

EFFECT OF MOBILE FINANCIAL INNOVATION ON PERFORMANCE OF DAIRY COOPERATIVE SOCIETIES IN AINABKOI SUB COUNTY, UASIN GISHU COUNTY, KENYA

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Abstract

The main purpose of the paper was to determine the effect of perceived ease of use, perceived usefulness of mobile financial innovation on Performance of Dairy Cooperative Societies in Ainabkoi Sub County, Uasin Gishu County. The study was informed by Diffusion of Innovation Theory. Explanatory design was used for the study. A census of all the dairy cooperative societies in Uasin Gishu County was done, where there are a total of 20 dairy societies. The primary data for the study was obtained using questionnaires. Pretest on two dairy societies will be done to test for reliability using Cronbach Alpha coefficient. Quantitative data collected was analyzed using descriptive statistical techniques which were frequencies, means, and standard deviation. Inferential statistics such as Pearson moment correlations was used to establish the relations between variables. Multiple regression was used to establish the cause relationship. The study found that that perceived ease of use, perceived usefulness of mobile financial innovations has a positive and significant effect on performance of dairy societies. The study concludes that use mobile financial services have enhances performance of dairy societies. It is therefore utmost necessary for MMT providers to formulate clear and understandable instructions on how to use the financial services, mobile phone companies should make it possible for their customers to know the state of their accounts faster, customers personal details need to be protected and measures should be put in place to prevent data loss and unauthorized access to their account. There is need for mobile phone companies to ensure that

the issues related to cost are addressed by ensuring that the cost of initial purchase price (handset fee), ongoing usage cost (subscription fee, fee service and communication fee), maintenance cost and upgrade cost are lowered to attract more customers.

Keywords: Perceived ease of use, perceived usefulness, mobile financial innovation, Performance

INTRODUCTION

The current business environment is getting more competitive especially with the advancement of new technologies. The recent emergence of the wireless and mobile networks has resulted in a new platform known as mobile financial innovation which is beginning to catch the attention of the business community. Khraim *et al*, (2011) stated that technology is a vital element in the competitive landscape of the financial services industry especially when a firm wants to increase its market share and satisfy its customers. As a result of these new advancements many companies have always strived to improve themselves by creating better products and services for their customers in order increase performance (Wei et al, 2009). Mobile phones are used by billions of people around the globe including the poor by providing an unprecedented opportunity for financial development and access, and are set to become a common tool for conducting financial transactions in the near future (Chatain et al, 2008). Mobile financial innovations are financial transactions effected by use of a mobile phone (Allen, 2003). Popularity of Mobile financial innovations services is attributed to low cost of transfers relative to alternatives, confidence in the system , speed of transfers and the convenience of a widespread agent networks handling cash-in/cash-out functions (Kimenyi and Ndung'u, 2009).

Today, unbanked population can securely transfer funds, pay bills, open bank accounts, withdraw cash and even access basic insurance products using mobile phones. Among the financial services that can be enjoyed by these players are domestic and international money transfers, deposits and withdrawals, bill and retail payments, payroll services, loan disbursement, repayments and stock exchange trading and even electronic currencies (Kleijnen et al, 2004). African continent over the years have witnessed an upsurge in mobile phone transactions due to availability of mobile phones and the need for financial access (Erick and Raymond, 2013). Research on MMT services and technology acceptance and / or adoption has been done in various countries. Beiginia et al, (2011) found that the quality of information, the bank reputation, ease of use, speed of transaction, and security of mobile banking system played an important role in attitude towards the behaviour to use mobile banking in Iran. Poon

(2007) found that lack of privacy and security are the major sources of dissatisfaction of e-banking services in Malaysia. In addition, the results indicated that speed, product features availability, reasonable service fees and charges as well as bank operations management are critical factors that leads to the success of the e-banking. Arumugam et al, (2009) found that perceived usefulness, social influence, perceived financial cost and trust are positively associated with consumer intention to use while perceived ease of use and trust do have an insignificant effect on consumer intention to use m-commerce.

Financial services industry especially SACCOs is changing rapidly due to the development of new technologies and competitive markets. As a result, mobile financial services providers are trying to offer their customers not just anytime financial services but anywhere-anytime financial access through appropriate application of developments in the information technology area. All these advancements are primarily aimed at providing better and more innovative services to customers so as to increase performance. Customers use MMT services due to benefits such as easy access to finances, low transaction cost, time saving and convenience. However, despite studies indicating importance of mobile financial innovation, the dairy cooperative societies have faced various challenges especially after liberation and most of the cooperative societies in Uasin Gishu County are not performing well compared to other cooperative societies in similar regions in the country. According to Karanja (2003), factors that could influence poor performance of cooperative societies particularly in the liberation era include lack of training and unpreparedness by cooperative societies to modernize and embrace change, lack of essential services. In addition, no studies have attempted to link mobile financial innovation with performance of dairy societies in Kenya. Thus, the study hypothesises that

Ho₁: Perceived ease of use of MMT service has no significant effect on performance.-

Ho₂: Perceived usefulness of MMT service has no significant effect on performance.

THEORETICAL FRAMEWORK

Innovation is defined as an idea, practice or object that is perceived as new by an individual or another unit of adoption while diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 1995). Diffusion of innovations theory seeks to explain how, why, and at what rate new ideas and technology spread through cultures. The theory proposed 4 major elements that influence the spread of a new idea which includes innovation, communication channels, time, and a social system. This means that diffusion is the process whereby an innovation is communicated through certain channels over time among the members of a social system. The theory also explains the stages in which individuals progress through in adopting technology such as

knowledge, persuasion, decision, implementation, and confirmation and so if the innovation is adopted, it can be spread via various communication channels. The theory further shows that there are characteristics which influence the rate of technology adoption to those people with the system. These features are relative advantage, compatibility, complexity, trialability and observability.

The diffusion process of innovation is also explained through 5 groups of adopters namely; innovators, early adopters, early majority, late majority and laggards. The underlying assumption on diffusion of innovation is that a new idea is adopted very slowly during the early stages of its diffusion process. Then, as the innovation is perceived relatively advantageous by its early adopters, its rate of adoption rises when the early adopters share the favourable experiences regarding the innovation with potential adopters. The implication of the theory in the study was that when customers perceive that using mobile financial services as simple, they tend to adopt it. Therefore, innovations that are simpler to understand are adopted more rapidly than the innovations that require the adopter to develop new skills and understandings. In addition, when the customers perceive that using mobile financial services speeds up financial transactions, improves the quality of financial transaction, makes financial transaction and services easier, gives greater control in financial transactions and enhances financial activities, then their usage intention increases.

EMPIRICAL REVIEW

Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort (Davis, 1989). He found to be an antecedent to usefulness rather than a direct determinant on performance from his regression analysis results. An individual's perception of mobile phone as easy to operate will lead to automatic performance. Leong and Viehland (2007) found that most New Zealand respondents (56%) perceived mobile payments to be easy or very easy to use. However, if customers perceive mobile phone to be complex, then performance will be very low. The small size of mobile devices including small screens and tiny multifunction keypads may be troublesome to use and impair the usability of mobile banking service. This was witnessed by Laukkanen, (2007) who found that some bank customers consider bill payment via mobile phone to be difficult and time consuming as the device enables only a limited amount of information processing and hence the whole bill is not visible on the display inhibiting the progress in the service process.

Perceived ease of use determines the behavioural intention towards adoption of new innovations. This is shown by Wang *et al*, (2003) who found a significant effect of ease of use on behavioural intention to use internet banking. Similarly, Perceived Ease of Use (PEOU) was

found to have positive relationship to performance mobile banking (Cheah *et al*,2011). It also resulted in a medium effect size from the framework applied to mobile banking users (Puschel *et al*, 2010). In addition to that, simplicity was found significant and positive only for computer banking according to (Kolodnisky *et al*,2004). Moreover, a comparative study of consumer's intention to use mobile internet in USA, Russia and china by Vatanparast and Qadim (2009) showed that positive correlation between perceived ease of use and behavioural intention was supported in those countries. Dass and Pal (2011) suggested that by ensuring ease of use of the offered service in terms of technology and financial products, it would be an important factor in performance as regards MMT.

Attitude plays a major role in an individual's mind as far as simplicity of a new system is concerned. This was demonstrated by Beiginia *et al*, (2011) who revealed that ease of use among other factors plays an important role in performance in the adoption of mobile banking. However, (Kumar and Ravindran 2012) found that perceived ease of use was not significant factor but rather it represents cognitive beliefs formed by second hand information and as well shows insignificant effect on consumer intention to use m-commerce (Wei *et al*,2009). Therefore, it was hypothesized that perceived ease of use has no significant effect on the performance of mobile financial services.

The adoption of mobile technology to make financial transactions is viewed to be of great benefit to the users because they can enable them to make several transactions anytime anywhere. Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her performance (Davis1989). He further found that perceived usefulness has a strong correlation to user acceptance of information technology. Perceived usefulness was found to be the most significant determinant to predict consumer performance in Malaysia (Wei *et al*,2009). Leong and Viehland, (2007) found that 59% of New Zealand respondents perceived mobile payment to be useful or very useful from their study on acceptance and use of mobile payments. A comparative study of consumer's intention to use mobile internet was conducted in United States of America USA, Russia and China by Vatanparast and Qadim (2009) and they found that perceived usefulness and behavioural intention was supported in China and Russia only. These results reveal that the perceived usefulness on behavioural intention is different in different countries.

Shin (2010) found that perceived benefit has influence on user acceptance of mobile payment system. Kumar and Ravindran (2012) stated that perceived usefulness represent cognitive beliefs formed via second hand information and so satisfaction was found to be a stronger predictor of continuance intention; there is significant effect of perceived usefulness on the intention to use internet banking (Wang *et al*,2003). Dass and Pal (2011) found a positive

effect on demand and performance of mobile financial services from perceived usefulness predictor. Perceived usefulness has positive relationship in examining performance in Malaysia (Cheah *et al*,2011). Therefore, it was hypothesized that perceived usefulness of Mobile Money Transfer Transaction has no significant effect on performance.

Review of the literature has attempted to address the aspects of adoption of mobile financial innovation. It has however, not adequately linked the adoption of mobile financial innovation on firm performance in rural areas.

MATERIAL AND METHODS

The study adopted the explanatory research design. This design was best for determining the causal effect adoption of mobile financial adoption on performance of dairy societies.

The study targeted 267 employees drawn from 20 dairy corporative societies in Uasin Gishu County (County agriculture director office, 2013). Simple random and stratified sampling technique was used to select a sample size of 180 employees. Employees were randomly selected from each of the categories.

The primary data for the study was obtained using questionnaires. The content, construct and face validity of the questionnaire was assessed by experts and peers from the department of agricultural economics and resource management who validated the questionnaire developed by the researcher. Cronbach's coefficient alpha was computed for each variable to test for reliability.

Quantitative data collected was analyzed using descriptive statistical techniques which will be frequencies, mean, standard deviation. Inferential statistics such as Pearson moment correlations was used to establish the relations between variables. Multiple regressions was used to establish the cause effect.

FINDINGS AND DISCUSSIONS

Perceived Ease of Use Descriptive Statistics

The findings in Table 1 indicated that respondents agreed with the fact that they find mobile financial services system easy to use and the instructions in the mobile financial services system are clear and understandable, farmers learn to use mobile financial services easily, mean (4.15) and standard deviation (0.9). However, there number of farmers using mobile financial services has increased but with very low rate. This might be attributed to the fact that the respondents do not usually utilize the mobile financial services website and not necessarily that they use it.

Table 1: Perceived Ease of Use and Performance

	Mean	Std. Deviation	Skewness	Kurtosis
Our members easily learn to use mobile financial services easily	4.15	0.900	-1.305	1.857
Instructions in the mobile financial services system are clear and understandable	4.22	0.788	-0.890	0.687
We find mobile financial services system easy to use	4.23	0.735	-0.782	0.490
The number of members have increased due to it easy to use	3.75	0.979	-0.430	-0.558
Perceived ease of use	4.10	0.613	-0.967	1.614

Perceived Usefulness Descriptive Statistics

The findings of the study showed that the respondents agreed that despite the negative skewness values; mobile phone financial services helps them to know the state of their account faster, and. These findings agree with those of David (1989) who found out that perceived usefulness has a strong correlation to user acceptance of information technology. Despite this, the respondents were undecided on the fact that they can perform banking and payment business 24 hours per day using mobile financial services, mean (3.88) and standard deviation (1.044) and that they can complete their banking and payment tasks more quickly using mobile financial services, mean (3.96) and standard deviation (0.908). These findings indicate that other than the normal mobile phone financial services, the customers do not often use the service for their banking and payment needs. These findings agree with those of Shin (2010) who found that perceived benefit has influence on user acceptance of mobile payment system.

Table 2: Descriptive Statistics Perceived Usefulness

	Mean	Std. Deviation	Skewness	Kurtosis
Most of our farmers are able to complete banking and payment tasks more quickly using mobile financial services	3.96	0.908	-0.735	0.494
Our members perform banking and payment business 24hrs per day using mobile financial services	3.88	1.044	-0.768	0.019
I find mobile financial services increase my efficiency and effectively in utilizing banking and payment services	4.04	0.963	-1.022	0.771
Our members are able to check their account status anytime anywhere using Mobile phone financial services	4.12	0.944	-1.198	1.474
Perceived usefulness	4.001	0.748	-1.063	1.370

Correlation results

From the Table 3, it is clear that there is positive and significant relationship between the various independent factors and performance of dairy societies at a significance level of 0.01(1%). The Table shows that perceived ease of use was significantly and positively related with performance of dairy societies ($r=0.491$, $p<.05$). Also perceived usefulness had significant and positive relationship with performance of dairy societies. From the above mentioned findings, there is linear relationship between perceived ease of use, perceived usefulness, related with performance of dairy societies

Table 3. Correlation results

	Mean	Std. Deviation	Organizational performance	Perceived ease of use	Perceived usefulness
Organizational performance	4.1111	0.58127	1		
Perceived ease of use	4.1	0.613	0.491**	1	
Perceived usefulness	4.001	0.748	0.468**	0.541**	1

** Correlation is significant at the 0.01 level (2-tailed).

Multiple Regression Results (Hypothesis Testing)

With the result of the correlation analysis indicating a clear relationship between the independent variables with the dependent variable, the study developed a regression model that can be used in predicting the outcome of performance of dairy societies considering the effect of the independent factors. The results of the regression analysis was summarized and presented in Table 4.

The model summary indicated that the value of R-square of the model was 0.339 which indicated that the model contributed 33.9% of the total variation in performance (adjusted $R^2 = 0.332$). This represents less variation than expected although the model was shown to be significant considering the F-value of 44.839 with a p-value of 0.000 at α value of 0.05. By the thumb rule the interpretation of the variance inflation factor was carried out. From Table 4, the VIF for all the estimated parameters was found to be less than 5 which indicates the absence of multi-collinearity which indicates that the variation contributed by each of the independent factors was significant and all the factors should be included in the prediction model.

Based on the above model summary, the findings showed that perceived ease of use was significant with a p-value of 0.000 considering the standardized coefficients where the t-value was 7.775 which showed that perceived ease of use contributed over 7.7 the amount of variation contributed by the error due to it. The value of β_1 was 0.433 showing that with each unit

increase in the perceived ease of use, there is 0.433 increase in performance. These findings indicate that we fail to accept the hypothesis stating that perceived ease of use has no significant effect on performance.

Cognate to the results, Cheah *et al* (2011) opine that perceived ease of use (PEOU) has positive relationship to customer satisfaction mobile banking. In the same way, Dass and Pal (2011) suggest that by ensuring ease of use of the offered service in terms of technology and financial products, it would enhance customer satisfaction especially in MMT services. Similarly, Beiginia *et al* (2011), opines that in the adoption of mobile banking, ease of use plays a significant role in customer satisfaction.

Furthermore, Viehland and Leong (2007), found that most New Zealand respondents (56%) perceived mobile payments to be easy or very easy to use. Consequently, their individual perception of mobile phone as easy to operate leads to automatic customer satisfaction. As well, Wang *et al.*, (2003) found out that there was significant effect of ease of use on behavioral intention to use internet banking. Contrary to the results, Kumar and Ravindran, (2012) echo that perceive ease of use was not a significant rather it represents cognitive beliefs formed by second hand information.

Table 4 also shows that $\beta_2 = 0.278$ (p -value = 0.000 which is less than $\alpha = 0.05$). This implies that we reject the null hypothesis stating that there is no significant relationship between perceived usefulness and performance. This indicates that performance increases by 0.278 units with each unit increase in perceived usefulness. In addition, the effect of perceived usefulness is stated by the t -value = 5.195 which implies that the effect contributed by the estimated parameter related to perceived usefulness is over 5 times that contributed by the error associated with the parameter.

Consistent with the results, Wei *et al* (2009) stated that perceived usefulness was found to be the most significant determinant to predict customer satisfaction in Malaysia. In a similar vein, Viehland and Leong (2007), found that 59% of New Zealand respondents perceived mobile payment to be useful or very useful from their study on acceptance and use of mobile payments. Moreover, Dass and Pal (2011) found out that perceived usefulness has a positive and significant effect on customer satisfaction. As well, Cheah *et al* (2011) was also of the opinion that perceived usefulness has positive relationship with customer satisfaction. Thus, perceived usefulness has influence on user acceptance of mobile payment system.

Table 4. Hypothesis testing

	Unstandardized		Standardized			Collinearity	
	Coefficients		Coefficients			Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	0.467	0.313		1.493	0.136		
Perceived ease of use	0.613	0.079	0.433	7.775	0.000	0.609	1.641
Perceived usefulness	0.314	0.06	0.278	5.195	0.000	0.663	1.509
R ²	0.339						
Adjusted R ²	0.332						
F	44.839						
Sig.	0.000						
Dependent Variable: performance							

CONCLUSIONS AND RECOMMENDATIONS

From the research findings, it was shown that perceived ease of use of financial has a positive and significant effect on performance of dairy societies. From the findings, respondents found it easy to use mobile financial services. Consequently, there was heightened performance of dairy societies through the ease of use of technology and financial products and mobile payments. It was also conceived that perceived usefulness of MMT service positively and significantly affects performance of dairy societies. Specifically, it was affirmed that mobile phone financial services helps them to know the state of their account faster, perform banking and payment business 24 hours per day and also complete their banking and payment tasks more quickly. As a result, perceived usefulness strongly relates with user acceptance of information technology. As evidenced in the study results, perceived ease of use has a positive and significant effect on performance of dairy societies. It is therefore utmost necessary for dairy societies to providers to formulate clear and understandable instructions on how to use the financial services. User friendliness of the financial services website could also be enhanced. Likewise, perceived usefulness also has a positive and significant effect on performance of dairy societies. As a result, mobile phone companies should make it possible for their customers to know the state of their accounts faster. Also, there is need to perform banking and payment business 24 hours per day so as to make it possible for customers to access the services quickly at their own convenience. More elaborate research is necessary to accurately establish the effects of MMT services on customer satisfaction. For instance, aspects such as characteristics of customers,

such as their background which include income and sizes of households should be included by other scholars. This would enable the service providers to develop services that can effectively and efficiently cater for the needs of the various cadres of potential users and thus expand their market niche.

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