

UNDERSTANDING CONSUMERS' BEHAVIOURAL INTENTION TO ADOPT MOBILE PAYMENT SERVICES IN RURAL TANZANIA: A CASE OF PWANI REGION

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Abstract

Although mobile payment services are acknowledged as potential means to provide financial services access to remote and unbanked population, majority of rural areas have not adopted the services compared to their counter parts in urban areas. The present study investigated motives, which influence consumers' behavioural intention to adopt mobile payments services in rural areas in order to comprehend the manner that can enhance and sustain utilization of the services in rural areas. The study involved a sample of 99 respondents from three districts of Pwani region and employed Partial Least Square- Structural Equation Modeling (PLS-SEM) to investigate the intrinsic and extrinsic motivations for consumers' behavioural intention to adopt mobile payment services in rural areas. To do this, the study established research conceptual model against collected data and henceforth, test established hypotheses. Findings from the study suggested that both extrinsic and intrinsic motivation were important factors towards behavioural intention. Hence, called for service providers and regulators to develop and implement services, strategies and value proposition to rural areas that not only address technology requirements but also technical human needs including needs for autonomy and competencies.

Keywords: Intrinsic Motivations; Extrinsic Motivations; Behavioural Intention; adoption; Mobile Payment Services; Rural Areas

Introduction

Mobile payment services is one of the mobile financial services, which enable transfer of financial values between person-to-person, government-to-persona and business-to-business (Donovan, 2012). Donovan (2012) further identified two types of mobile financial services as mobile finance, which involves credit, insurance and saving services and mobile banking offering transactional and information services. According to the Tanzania Communications Regulatory Authority (TCRA), Tanzania has currently 17.3 million mobile money users out of 39.2 million mobile subscribers as of March 2016.

According to FinScope's (2013) study, mobile financial services, including remittance services in Tanzania is one of the main reasons for significant drop in number of people who are totally financially excluded by half from 2009 to 2013. Majority (70.4 percent) of the Tanzanian population live in rural areas (Worldbank, 2015; NBS, 2012) and most of them are financially excluded because access to other formal financial services is very limited (National Council for

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Financial Inclusion, 2016). According to InterMedia (2015), only 55 percent of rural population is financially included compared to 81 percent in urban areas. As a result, the rural population remains with widespread basic need poverty at 33.3 percent (National Council for Financial Inclusion, 2016). As most Tanzanians in rural areas own and know how to use mobile phones (FinScope 2013, InterMedia, 2015), mobile payment services present potential to further reduce number of people who are financially excluded if well utilized in these areas.

However, a study conducted by InterMedia (2015) indicated that adoption of mobile payments services in rural areas is relatively lower with only 54 percent of rural mobile phone subscribers in rural areas were using mobile payment services than 83 percent in urban areas despite its potentiality (National Council for Financial Inclusion, 2016) to enable rural consumers to access financial services anywhere anytime. According to Ryan and Deci (2000), two types of motivation based on goals are known to give rise to an action including adoption, namely, intrinsic motivation and extrinsic motivation. Understanding both intrinsic and extrinsic motivations influencing consumers' behavioural intention to adopt mobile payment services in rural areas is important because it would help regulators, researchers, application developers and services providers develop actionable policies and value proposition strategies, and products and services, which are acceptable in rural areas, henceforth increasing utilizations and benefits of mobile payment services in rural areas. Given the extent to which this group is excluded from many formal financial services and the extent that mobile phone can reduce such rate of exclusion, then, understanding motivations that affect their intentions to adopt mobile payment system is important. Besides, not many available studies have specifically focused on rural areas. This study intended to address this gap.

Specifically, this study sought to achieve the following objectives:

1. to determine influence of intrinsic motivation on consumers' behavioural intention to adopt mobile payment services in rural areas;
2. to determine influence of extrinsic motivation on consumers' behavioural intention to adopt mobile payment services in rural areas; and
3. assess the manner influence of intrinsic motivation differs from influence of extrinsic motivation on consumers' behavioural intention to adopt mobile payment services in rural areas.

LITERATURE REVIEW

Unified Theory of Adoption and Use of Technology (UTAUT)

The Unified Theory of Adoption and Use of Technology (UTAUT) constitute the most superior technology adoption models compared to preceding eight most employed technology adoption models (McGrath, Waehama, Korthaus, & Fong, 2014). According to Taiwo and Downe (2013), UTAUT is the most robust theory commended for its ability to explain end- users' acceptance and use behaviour in different domains developed by Venkatesh *et al.*, (2003). Venkatesh *et al.* (2003) developed UTAUT as a comprehensive model by analyzing constructs used in previous models in technology adoption studies and identified four most significant influencing behavioural intentions to adopt and use technology. They include Performance Expectance construct is moderated by gender and age and was formulated by combining perceived usefulness from Technology Acceptance Model (TAM/TAM2), Extrinsic Motivation from Motivational Model (MM, job-fit from Model of PC Utilization (MPCU), relative advantage

from Innovation Diffusion Theory and outcome expectation from Social Cognitive Theory (SCT) (Venkatesh *et al.*, 2003).

Venkatesh *et al.* (2003) further note that Effort Expectance is moderated by gender, age and experience and was formulated from three constructs, namely, perceived ease of use (TAM/TAM2), complexity (MPCU) and ease of use (IDT). Social influence is moderated by gender, age, voluntariness and experience and was formulated by three constructs, namely, subjective norm (Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB)), social factors (MPCU) and Innovation Diffusion Theory (IDT). Facilitating Conditions is moderated by gender and experience and formulated by combining behavioural control (TPB, DTPB, C-TAM-TPB), facilitating conditions (MPCU) and compatibility (IDT).

Venkatesh *et al.* (2003) postulated that performance expectance, effort expectance, social influence and facilitating conditions constructs predict behavioural intention to adopt technology, a pattern, which determines actual use of technology. UTAUT has been widely tested and employed in information technology adoption studies and has outperformed previous models and is able to explain 70 percent of variance in adoption behaviour (Venkatesh *et al.*, 2003). UTAUT presents advantages over other models because it employs holistic approach to explaining social and psychological factors influencing adoption of technology using consistent and reliable instruments. However, the number of variables required is large and uneconomical for organizations to address all of them (Yoo, Han, and Huang, 2012). For this reason, several previous studies (for example, Lee, Cheung and Chen, 2005 as cited in Yoo, Han, and Huang, 2012) suggested for investigation of adoption of information technology to focus on investigation of motivations in order to understand association related to motivations. Yet, most previous studies (such as Zhou, Lu and Wang, 2010; Williams *et al.*, 2011; Abrahão, Moriguchi; and Andrade, 2016) on adoption of mobile payment services employing UTAUT indicate increased use of it in conjunction with external constructs. Such findings support adaptation of the UTAUT model to show the relationship between important factors preceding the intent of adoption and use of mobile payment.

Self-Determination Theory (SDT)

Self-Determination Theory (SDT) developed by Deci and Ryan (1985) distinguishes between different types of motivation based on the different reasons or goals that give rise to an action. The most basic distinction is between *intrinsic motivation*, which refers to doing something because it is inherently interesting or enjoyable and *extrinsic motivation*, which refers to doing something because it leads to a separable outcome (Ryan and Deci, 2000). Intrinsic motivation further occurs as a result of collection of factors that affect users' behaviour for its own sake such as interesting, enjoyable or engaging rather than desire for some external reward, while extrinsic motivation occurs when one is motivated to perform a behaviour or engage in an activity to earn a reward or avoid punishment (Lee *et al.*, 2005; Myers, 2010; Plotnik and Kouyoumjian, 2011). Central to SDT is the distinction between autonomous motivation and controlled motivation, where the former involves acting with sense of volition and having experience of choice while the latter involves acting with sense of pressure and sense of having to engage in the actions. When externally regulated, people act with the intention of obtaining a desired consequence or avoiding an undesired one or because it leads to a valued outcome such as improved job performance, pay and promotions (Deci, 1972; Lawler and Porter, 1967), promised rewards, praise and deadlines (Amabile *et al.*, 1993). An individual who does certain

behaviour because he/she personally believes it is valuable for his/her chosen endeavour is extrinsically motivated because he/she too is doing it for its instrumental value rather than because he/she finds it interesting. The study found this theory very useful to explain and investigate various forms of motivations and the way they may influence mobile payment services adoption.

Empirical Literature Review

In regard to technology adoption, the role of intrinsic or extrinsic motivation to explain users' technology usage and adoption has widely been examined (for example, Atkinson and Kidd, 1997; Heijden, 2004; Igbaria, Parasuraman, and Baroudi, 1996; Venkatesh and Davis, 2000; Venkatesh *et al.*, 2002; Sánchez and Hueros, 2010). Consensus is that intrinsic and extrinsic motivations are two critical factors to encourage potential users to adopt information technology (Davis, Bagozzi and Warshaw, 1992; Venkatesh, 1999) and they reflect human propensity to learn and assimilate new technology such as mobile phone payment services including reflecting external control or influence self-regulation respectively (Bandura, 2002).

Previous studies (such as Yoo *et al.*, 2012) suggest that intrinsic motivation is linked to success of information systems adoption. Furthermore, findings from studies conducted by Yoo *et al.*, and colleagues (2012) suggested that extrinsic motivation does not influence behavioural intention directly but through intrinsic motivation. However, Myers (2010) as well as Plotnik and Kouyoumjian (2011) assert that extrinsic motivators should be avoided in situations where the individual already finds the activity intrinsically rewarding. Deci and Ryan (1985) conceived that intrinsic motivation can be weakened by consistent environmental or socially sanctioned forces and expected rewards made contingent upon task performance, while offering excessive external rewards for an already internally rewarding behaviour can lead to reduction in intrinsic motivation, a phenomenon known as over justification effect (Myers, 2010; Plotnik and Kouyoumjian, 2011). For example, in the context of technology-mediated environments, Newby and Alter (1989) concluded that presence of extrinsic motivators (e.g., monetary reward) might prevent users from participating computer-based tasks that are intrinsically challenging and enjoyable. Their study (*ibid.*) further suggested that people might choose to complete a less intrinsically enjoyable task in order to receive extrinsic rewards.

In the context of UTAUT, Venkatesh, Thong and Xu (2012) emphasize that intrinsic and extrinsic motivations form internal schema beliefs associated with performing a specific behaviour. Davis *et al.*, (1992) as well as Heijden (2004) consider effort expectancy and attitudes as intrinsic motivational dimensions for determining behavioural intentions on technology usage. On the other hand, performance expectancy, social influence and facilitating conditions were identified as extrinsic motivators (Lee *et al.*, 2005; Venkatesh *et al.*, 2003). Other studies (such as Kankanhalli *et al.*, 2005; Cho and Perry, 2012) indicated generalized trust as a factor studied alongside intrinsic motivation factors.

However, although a few studies have attempted to investigate effects of intrinsic and extrinsic motivations difference in promoting technology acceptance, results remain inconclusive (Atkinson and Kidd, 1997; Venkatesh, Speier, and Morris, 2002.) It is also unclear as to what extent both intrinsic and extrinsic motivations influence mobile payment services and it is unclear whether or not intrinsic and extrinsic motivations might influence rural people's mobile payment systems acceptance levels differently. Authors think that understanding the role of each

motivator and what fosters each of them is an important issue to cultivate behavioural intention to use mobile phone payments services in Tanzania.

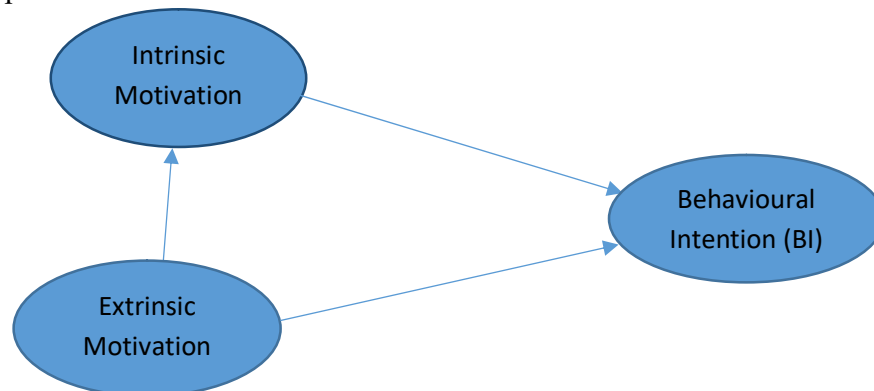
The study adapted five constructs from UTAUT including performance expectance (PE), effort expectance (EE), facilitating conditions (FC), social influence (SI) and behavioural intention (BI). Furthermore, the study involved perceived trustworthiness (PT) as proposed by Kankanhalli et al. (2005) as well as Cho and Perry (2012) in order to improve predictive power of UTAUT on mobile payment services (Vasileiadis, 2014).

Research Conceptual Model and Hypotheses Formulation

Based on classic definitions of intrinsic as well as extrinsic motivation and previous conducted studies, performance expectance, social influence and facilitating conditions are postulated as extrinsic motivators (Ryan and Deci, 2000; Venkatesh *et al.*, 2012; and Yoo *et al.*, 2012). Yoo *et al.* (2012) postulated effort expectance as an intrinsic motivator. This study hypothesizes perceived trust to be an intrinsic motivator using a similar argument of emotion factor provided by Yoo *et al.*, (2012).

Therefore, this study proposes the research conceptual model adapted from Yoo *et al.*,(2012). The constructs of the model, their definitions and respective indicator variables are presented in Table 1.

Figure 1 Conceptual Framework



Source: Adapted from Yoo, *et al* (2012).

Table 1: Table of Constructs and survey items

Construct	Definition	Survey Items	Citations
Effort Expectancy (EE)	... degree of ease associated with consumer's use of technology	1. Learning how to use mobile payment services is easy for me. 2. I find mobile payment services easy to use. 3. It is easy for me to become skillful at using mobile payment services. 4. I find Mobile Payment Services Systems flexible to interact with. 5. My interaction with Mobile Payment Services Systems would be clear and understandable	Venkatesh <i>et al.</i> , 2012

<p>Perceived Trust (PT)</p>	<p>...is defined as users' beliefs or faith in the degree to which a specific service can be regarded to have no security and privacy threats.</p>	<ol style="list-style-type: none"> 1. The mobile money service provider is trustworthy 2. Transactions can be easily refunded 3. With mobile payments services errors can be easily reversed 4. I believe that data sent is confidential. 5. I get immediate confirmation of the transaction. 6. Nobody else could accept the transaction as me 7. I have no privacy concerns using the mobile payment services. 8. It is easy to recover from theft or loss of the device 	<p>Gao,Krogstie and Siau,2011; Karma, Ali, and Ibrahim, 2014.</p>
<p>Performance Expectancy (PE)</p>	<p>... as the degree to which using a technology will provide benefits to consumers in performing certain activities</p>	<ol style="list-style-type: none"> 1. I find mobile payment services useful in my daily life 2. Using mobile payment services helps me make payments, receive and send money more quickly. 3. Using mobile payment services increases my productivity. 4. Mobile Payment Services enable me to use financial services whenever and wherever I need to use them. 5. Mobile Payment Services enable me to spend less time on performing financial transactions. 	<p>Venkatesh <i>et. al.</i>, 2012</p>
<p>Social Influence (SI)</p>	<p>.... as the extent to which consumers perceive that important other (e.g. family and friends) believe they should use a particular technology</p>	<ol style="list-style-type: none"> 1. People who are important to me think that I should use mobile payment services. 2. People who influence my behaviour think that I should use mobile payment services. 3. People whose opinions that I value prefer that I use mobile payment services. 4. I would only use Mobile Payment Services if I needed to. 5. I would use the Mobile Payment Services if my friends, family and colleagues used them. 	<p>Venkatesh <i>et. al.</i>, 2012; Alawadhi and Morris, 2008</p>
<p>Facilitating Conditions</p>	<p>....refers to consumers'</p>	<ol style="list-style-type: none"> 1. I have the resources necessary to use mobile payment services. 	<p>Venkatesh <i>et. al.</i>,</p>

(FC)	perceptions of the resources and support available to perform a behaviour.	<ol style="list-style-type: none"> 2. I have the knowledge necessary to use mobile payment services. 3. I can get help from others when I have difficulties using mobile payment services. 4. Given resources and knowledge necessary to use Mobile Payment Services, it would be easy for me to use the system. 5. Using the Mobile Payment Services fits into my life style and the way I like to perform financial transactions. 	2012; Alawadhi and Morris, 2008
Behavioural Intention (BI)	...is the person's subjective probability that he or she will perform the behaviour in question.	<ol style="list-style-type: none"> 1. I intend to continue use mobile payment services in the future. 2. I will always try to use mobile payment services in my daily life. 3. I intend to continue take advantages of mobile payments services in my transactions. 4. I plan to continue to use mobile payment services often. 5. I intend to continue learn how to use new services offered by mobile payment services providers 	Alawadhi and Morris, 2008

Source: Summarised from Literature

In order to answer and attain established research objectives, reviewed literature and proposed research model, the following three hypotheses were established:

H₁: Intrinsic motivation positively influences consumers' behavioural intention to adopt mobile payment services in rural areas.

H₂: Extrinsic motivation positively influences consumers' behavioural intention to adopt mobile payment services in rural areas.

H₃: Extrinsic motivation indirectly influences consumers' behavioural intention to adopt mobile payment services in rural areas through intrinsic motivation.

Methodology

Data for this study were collected from three districts of Pwani region, namely, Bagamoyo, Kibaha and Mkuranga. Pwani is one of the Tanzania administrative regions bordering Tanga region to the north, Dar es Salaam region and Indian Ocean to the east, Lindi region to the south and Morogoro region to the west. Pwani region has a population of 1,098,668 (National Bureau of Statistics, 2012). The survey for this study employed 5-point Likert scale questionnaire (See Appendix 1) with items adapted from Venkatesh and colleagues (2012): performance expectance (PE), effort expectancy (EE), social influence (SI), Facilitating conditions (FC) and behavioural intention to use mobile payment services (BI). Perceived Trust (PT) was measured using validated items adapted from Zmijewska *et al.* (2004).

This study involved 99 respondents selected using convenience sampling procedure because of its relative economic advantages (see Kothari, 2004). Partial Least Square-Structure Equation Modelling (PLS-SEM) using Smart Partial Least Square Version 3 [SmartPLS 3.0 (Ringle *et al.*, 2015)] was employed to test collected data against established research model and hypotheses.

SmartPLS 3.0 PLS-SEM involved two steps to analyze collected data whereby the first step was to run Partial Least Square (PLS) Algorithm to estimate various measurement model parameters. In the second step, bootstrapping process was run in order to conduct significance test of various estimated parameters. Evaluation of PLS-SEM results involved the following two stages: evaluation of the measurement model and evaluation of the structural model. Evaluation of measurement model aimed at evaluating internal consistency reliability, indicator reliability, convergent validity and discriminant validity. In this study, evaluation of measurement and structural model was based on guidelines provided by Hair, Ringle and Sarstedt (2011).

Respondents’ demographic characteristics

Respondents’ demographic characteristics are presented in Table 2 and depict the following: males (49%), females (51%), ages below 20 years (16%), those aged between 20 and 29 years (28%), aged between 30 and 45 years (39%) and aged above 45 (17%).

Table 2: Respondents’ Age and Gender Distribution

Characteristics	Percentage
Age Group	
Below 20	16%
Between 20 and 29	28%
Between 30 and 45	39%
Above 45	17%
Total	100
Gender	
Male	51%
Female	49%
Total	100

Evaluation of Measurement Model

SmartPLS 3.0 PLS Algorithm was run in an iterative process to ensure that all indicators' reliability values are above 0.7, Average Variance Extracted (AVE), which assesses convergent validity is above 0.5, Composite Reliability, which measures internal consistency is above 0.7 or 0.6 (Hair *et. al.*, 2011). Furthermore, discriminate validity was assessed and established using heterotrait-monotrait ratio of correlations (HTMT) criterion as recommended by Henseler, Ringle and Sarstedt (2015), recommends HTMT value to be below 0.9.

Figure 1 Complete model outer loadings, path coefficients and composite reliability

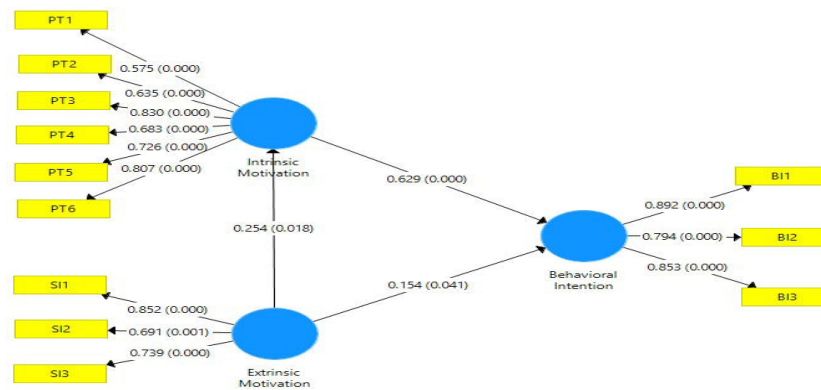
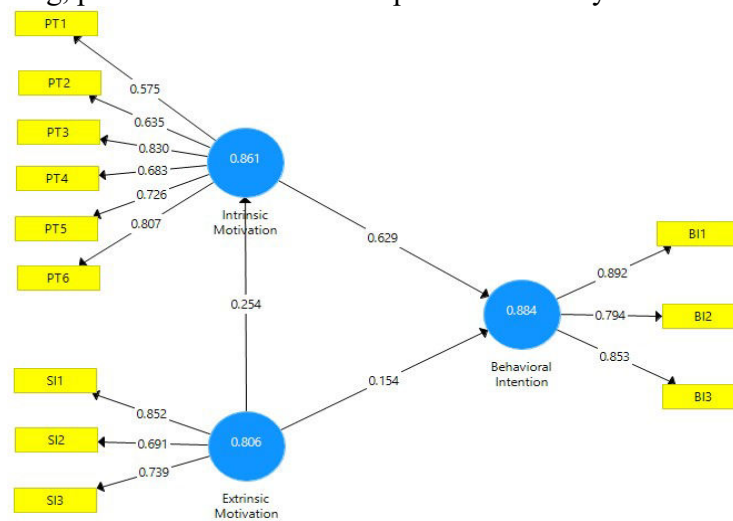


Figure 2 Indicator loading, path coefficient and Composite Reliability



Multi-collinearity was assessed for each indicator's variance inflation factor (VIF) to conform to requirements that VIF value should be less than 5 (Hair *et. al.*, 2011). Results of the PLS Algorithm employed in assessment of measurement model are shown in Figure 2, Figure 3 and Figure 4. Summary of results are provided in Table 4, Table 5 and Table 6.

Table 4: Complete model Indicators, Indicator Loadings, Composite Reliability, and AVE

Indicator	Loading	Construct	Composite Reliability	AVE	Confirmed (above 0.4 for exploratory research)	Citation
PT1	0.575	Intrinsic Motivation	0.861	0.511	Yes,	(Hulland, 1999 cited in Wong, 2013)
PT2	0.635				Yes	
PT3	0.830				Yes	
PT4	0.683				Yes	
PT5	0.726				Yes	
PT6	0.807				Yes	
SI1	0.852	Extrinsic Motivation	0.806	0.583	Yes	
SI2	0.691				Yes	

SI3	0.739				Yes
BI1	0.892	Behavioural Intention	0.884	0.718	Yes
BI2	0.794				Yes
BI3	0.853				Yes

Table5: Discriminant Validity using HTMT Value

Relationship	HTMT Value	Confirmed
Extrinsic Motivation ->Behavioural Intention	0.387	Yes
Intrinsic Motivation ->Behavioural Intention	0.815	Yes
Intrinsic Motivation -> Extrinsic Motivation	0.315	Yes

Table 6: Co-linearity Statistic (Variance Inflation Factor- VIF)

Indicator	Outer VIF	Indicator	Outer VIF
PT1	1.315	SI1	1.245
PT2	1.304	SI2	1.458
PT3	2.100	SI3	1.334
PT4	1.474	BI1	2.210
PT5	1.707	BI2	1.604
PT6	1.911	BI3	1.777

Evaluation of Structural Model and Hypothesis Testing

Results of structural model were assessed using coefficient of determination (R^2) and path coefficients (β). Furthermore, bootstrapping technique was employed to assess significance of obtained parameters and hypothesis validation.

Results in Table 7 indicate that coefficient of determination, R^2 of behavioural intention (BI) is significant ($p < 0.05$), whereas coefficient determination of extrinsic motivation prediction of intrinsic motivation is non-significant ($p > 0.05$). Results mean proportional of variance found on BI predicted by intrinsic motivation and extrinsic motivation is 0.468, which is considered moderate (Hair *et. al.*, 2011) and variance found in intrinsic motivation caused by extrinsic motivation is 0.065, which was considered very weak. The results suggest that intrinsic motivation, since it is weakly influenced by extrinsic motivation, has the strongest direct effect on consumers' behavioural intention.

Table 7: Coefficient of Determination (R Square)

Full Model	Original Samples	Sample Mean	T-Statistic	P-Values
behavioural intention (BI)	0.468	0.472	4.685	0.000
Extrinsic Motivation -> Intrinsic Motivation	0.065	0.086	1.185	0.237

Recall, this study formulated three hypotheses in order to attain its specific objectives. The bootstrapping process was employed to test significance of the outer model by estimating t-statistics and p-values of path coefficient in the model. In order for the path coefficient to be significant, t-values must be greater than 1.96 at $p=0.05$ significance and 2.58 at $p=0.01$ significance (Hair *et. al.*, 2011). According to Table 8, the critical t-value obtained for H_1 was

validated at t-value of 8 with significance level $p= 0.01$ significance. The second hypothesis H_2 was validated at t-value of 2.053 and significance level = 0.05, whereas H_3 was validated at t-value of 2.170 at significance level = 0.05.

Table 8: Path Coefficient Direct effect

Model (β)	Original Samples	Sample Mean	T-Statistic	P-Values
Extrinsic Motivation ->behavioural intention (BI)	0.154	0.157	2.053	0.041
Extrinsic Motivation -> Intrinsic Motivation	0.254	0.273	2.364	0.018
Intrinsic Motivation ->behavioural intention (BI)	0.629	0.620	8	0.000

Table 9 indicates that path coefficients (β) for relationship between extrinsic motivation and behavioural intention [$\beta = 0.314$, $p= 0.001$], extrinsic motivation and intrinsic motivation [$\beta = 0.254$, $p= 0.018$] and intrinsic motivation and behavioural intention [$\beta = 0.629$, $p= 0.000$] are all significant at ($p < 0.05$).

Table 9: Path Coefficient Total effect

Model (β)	Original Samples	Sample Mean	T-Statistic	P-Values
Extrinsic Motivation ->behavioural intention (BI)	0.314	0.328	3.468	0.001
Extrinsic Motivation -> Intrinsic Motivation	0.254	0.273	2.364	0.018
Intrinsic Motivation ->behavioural intention (BI)	0.629	0.620	8	0.000

Furthermore, the result in Table 10, indicates that there is a significant indirect effect of extrinsic motivation toward behavioural intention [$\beta = 0.160$, $p= 0.030$] at ($p < 0.05$).

Table 10: Path Coefficient Indirect effect

Model (β)	Original Samples	Sample Mean	T-Statistic	P-Values
Extrinsic Motivation ->behavioural intention (BI)	0.160	0.171	2.170	0.030

In other words, an increase of one standard deviation in intrinsic motivation translates to 0.629 increase of behavioural intention. An increase of one standard deviation in extrinsic motivation translates to 0.254 increases in intrinsic motivation. This finding implies that intrinsic motivation is a stronger predictor of behavioural intention compared to extrinsic motivation directly and indirectly effect combined. Furthermore, this finding suggests increasing intrinsic motivation will translate to increase in consumers' behavioural intention and intrinsic motivation could be increase by increasing extrinsic motivations. Moreover, an increase of one standard deviation in extrinsic motivation translates to 0.314 increase of behavioural intention directly and to 0.160 increases in behavioural intention indirectly through intrinsic motivation.

Discussion

This study sought to attain results based on the following three specific objectives: to determine influence of intrinsic motivation on consumers' behavioural intention to adopt mobile payment services in rural areas; to determine influence of extrinsic motivation on consumers' behavioural intention to adopt mobile payment services in rural areas; and to determine extrinsic motivation on consumers' behavioural intention to adopt mobile payment services in rural areas, and to assess the manner influence of intrinsic motivation differs from influence of extrinsic motivation on consumers' behavioural intention to adopt mobile payment services in rural areas. In order to achieve established specific objectives, the following three hypotheses were proposed: H₁ "Intrinsic motivation positively influences consumers' behavioural intention to adopt mobile payment services in rural areas;" H₂ "Extrinsic motivation positively influences consumers' behavioural intention to adopt mobile payment services in rural areas;" and H₃ "Extrinsic motivation indirectly influences consumers' behavioural intention to adopt mobile payment services in rural areas through intrinsic motivation."

Findings from this study with regard to the first objective suggest that intrinsic motivation has positive and direct influence on consumers' behavioural intention to adopt mobile payment services in rural areas. According to findings, increase in one standard deviation of intrinsic motivation translates to 0.629 increases in behavioural intention to use mobile payment services. This finding is consistent with previous studies conducted that investigated influence of motivation on adoption of information systems in which intrinsic motivators were found to have significant influence (Yoo *et. al.*, 2012). Ryan and Deci (2000) urged that intrinsic motivation is pervasive, important and with an inherently organic propensity form of motivation thereby it is concurrent with the current study and as such, intrinsic motivation is expected to be strong in most tasks. They (*ibid.*) argue that in order to improve intrinsic motivation tasks or activities that involved facilitating conditions must support human needs for autonomy as well as competence and tasks must be interesting to individuals through novelty, challenging, interesting and aesthetic. These findings call for mobile payment services providers and regulators to develop application, services and value proposition strategies that would not only address technical requirements in order to confront the effort expectancy, but also address human needs for autonomy and competences in order to enhance intrinsic motivations, which is the strongest motivation factor. This will call for mobile services providers to develop application with functions and features that are interesting such that consumers can easily learn and become competent through clear guidelines and regular feedback through reliable, competent technical support provision, ensuring privacy and integrity of data and provision of high as well as reliable services. According to Xin (2015), trust related characteristics of mobile service provider and mobile payment vendors including reputation and opportunism may reduce the level of transaction specific uncertainties a consumer may perceive towards new technologies coming up with mobile phones. In other words, if consumers perceive any opportunistic behaviour conducted by mobile payment vendors, they are likely to place lower trust in mobile payment and vice versa is true.

Secondly, this study found that extrinsic motivation influences on consumers' behavioural intention to adopt mobile payment services in rural areas directly and indirectly through intrinsic motivation. That is to say, an increase in one standard deviation of extrinsic motivation translates to 0.314 increases in behavioural intention to use mobile payment services. Also, an increase in

one standard deviation in extrinsic motivation translates to 0.254 increases in intrinsic motivation. The two- intrinsic and extrinsic motivations positively influence on behavioural intention to use mobile phone payment services. This finding contradicts those from the study by Yoo *et al.*,(2012) whereby extrinsic motivation was found to be a non-significant factor in adoption of e-learning at workplaces. Furthermore, despite direct and indirect influence of extrinsic motivation on consumers' behavioural intention, influence of intrinsic motivation is stronger than that of extrinsic motivation.

These findings imply for a need for vendors to develop mobile phones with features and functions that render payment applications perceived ease to use and that are perceived trustworthy in accomplishing the mobile payment services. According to Rao and Troshani, (2007), perceptions of a secure environment and that users' personal information is not abused are both likely to increase trust and consequently, they would positively affect users' attitude and behavioural intentions to adopt mobile services. Provision of facilitating conditions makes adoption behaviour less difficult by removing any obstacles to adoption and sustained usage (Thompson, Higgins, and Howell, 1994; Venkatesh *et. al.*, 2003). These conditions can be provided by mobile operators, mobile content providers, the government and other stakeholders (Lu *et. al.*, 2003). For example, Teo and Pok (2003) exemplify those mobile phones operators can encourage adoption by providing handset subsidies, free content, mass advertising campaigns and active promotion aimed at increasing awareness about mobile services. Establishment of clear guidelines, policies and regulations, including regular feedback as well as reliable technical support provision, ensuring privacy and integrity of data plus provision of high and reliable services will change the society's perception on services usefulness thereby, would facilitate intention to use the mobile phone payment services.

Thirdly, the study found that influence of intrinsic motivation differed from influence of extrinsic motivation. Extrinsic motivation influenced on consumers' behavioural intention to adopt mobile payment services in rural areas directly and indirectly through intrinsic motivation. This finding suggests that improving factors, which change extrinsic motivation may improve both intrinsic motivation and behavioural intention consistent with proposition made by Ryan and Deci (2000). According to Ryan and Deci (2000), an individual exposed to an activity because of an external regulation, for example, rewards might experience the activity's intrinsic properties resulting in orientation shift.

Conclusion

Findings from this study suggest that both intrinsic and extrinsic motivations are important factors influencing on consumers' behavioural intention to adopt mobile payment services in rural areas. Furthermore, findings suggest that intrinsic motivation is a stronger factor than extrinsic motivation despite direct and indirect influence of extrinsic motivation. This finding calls for regulators and mobile service providers to develop applications to foster improvement of both intrinsic motivation and extrinsic motivation in order to increase adoption and utilizations of mobile payments services in rural areas. Even though the employed research model explained almost half of variance in consumers' behavioural intention to adopt mobile payment services in rural areas, still half of variance remained an explained. This study recommends future studies to identify variables that could account for the remaining variance and use additional data.

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