DETERMINANTS OF ADAPTION OF MOBILE MONEY USAGE IN SRI LANKA

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ABSTRACT

The technology of transferring funds and performing banking services using mobile phones was first introduced in Kenya and is now widely spanned across the globe with more than 250 service providers. Albeit we observed a disparity in the popularity of using the mobile money facility within the Sri Lankan context. While integrating the Technology Acceptance Model with the Diffusion of Innovation theory we extended the Technology Acceptance Model expecting to identify the impact of the key attributes of the Technology Acceptance Model, (intention to use a system and usage of a system) on customers' adaption to use a system. This study especially focused on mobile money users and conducted the study by testing the theories using quantitative techniques. We collected 402 responses for the Likert scale questionnaire and analysed the data to unveil the findings. The results revealed that awareness, risk, trust, and knowledge are the determinants of the intention to use mobile money. Perceived usefulness, perceived ease of use, perceived network quality, and perceived costs determine the usage of mobile money while complexity and compatibility determine the adaption of mobile money. The study finally confirmed that the intention to use mobile money determines the usage of mobile money which then determines the adaption of mobile money. Accordingly, we can conclude that the usage of a system (Mobile Money) significantly influences the users' adaptation to the system. Accordingly, we reveal that the use of mobile money is a positive stimulus that motivates users to adapt to the facility. Since there is a disparity in the popularity of the Mobile Money facility in Sri Lanka, the service providers can develop loyal customers by promoting the Mobile Money facility among their users.

Keywords: Adaption to a System, Intention to Use a System, Mobile Money, Technology Acceptance Model, Usage of a System,

1. INTRODUCTION

Adaption to innovations is a key factor for the users to reap the benefits of technological advancements. Rogers described adaption as the decision to make full use of innovations (Rogers, 1995). The increasing penetration of technological advancements in the society we live in today has made many changes and requires users to adapt. Advancements such as the introduction of mobile money have accelerated the growth in the finance sector through its nature of facilitating financial

transactions in a quick, safe, and fast way. Spreading rapidly, mobile money has transformed the demography of financial inclusion and leapfrogged traditional banking services (Aron, 2018). Mobile money initially dominated domestic money transfers, but now it has expanded into a broader payment platform including the payment of utility bills, school fees, rent, taxes, and retail payments as well. The usage of mobile money has been increasingly used to overcome financial exclusion among the poor and has helped smoothen their economic activities. Even though the mobile money services offered by mobile networks provide advantages to their users, attracting the target group of customers towards the mobile money service has been a challenge so far. Motivated by this ongoing challenge, we designed this study to identify the determinants of adaption for mobile money usage among Sri Lankans.
Ample studies based around the Sub-Saharan region where mobile money originated but very few studies targeting to address issues based in the Sri Lankan context are found. Moreover, there is a noticeable gap in studies that have identified the intention to use mobile money and the usage of mobile money as the building blocks of its adaption. These problems paved the way for the construction of the research questions;

a) How does the Intention to Use mobile money provoke the usage of mobile money eventually allowing users to adapt to it?
b) What are the factors that have an impact on determining the intention to use mobile money, the usage of mobile money, and the adaption of mobile money in Sri Lanka?

To find answers to these questions, this study sought to identify how the adaption of mobile money eventually arises from the intention to use mobile money and the usage of mobile money and also to identify factors that have an impact in determining the intention to use mobile money, the usage of mobile money and the adaption of mobile money in Sri Lanka.

2. LITERATURE REVIEW

The Technological Acceptance Model

The Technological Acceptance Model explains how users come to decide how and when they will use new technology. The Technological Acceptance Model employs perceived ease of use and perceived usefulness as the determinants of the intention which in turn determines the usage (Silva, 2015). Numerous studies were conducted by Davis (1989) to emphasize that perceived usefulness and perceived ease of use are the key determinants of the usage of technological innovations. Two factors that affect the likelihood of an individual using new technology or "intention to use a system"; are perceived ease of use and perceived usefulness (Charness & Boot, 2016; Venkatesh & Davis, 2000). We define "perceived usefulness" as the user's likelihood that the use of a certain system will improve his/her actions and "perceived ease of use" as the degree to which the potential user expects the target system to be effortless

(Davis, Bagozzi, & Warshaw, 1989). We could derive these two factors as determinants of the usage of mobile money for our study. Thereby, we also could articulate that the positive stimuli from the "intention to use mobile money" motivate an individual to turn his or her intention into action (usage of mobile money), ultimately leading to the adaption.

Diffusion of innovation

Diffusion of Innovation is the theory that explains how, why, and at what rate new ideas and technology spread. Rogers (2003) defines diffusion as the process by which an innovation is communicated over time among members of a social system. This theory is often used to explain the behaviour of adaption. "Relative advantage" is the degree to which an innovation is considered to be better than the already existing ones, "complexity" which is the extent to which an innovation is difficult to be understood, "compatibility" is the degree to which an innovation is believed to adhere with existing values and norms, "trialability" which is the extent to which an innovation can experiment, and "observability" which is the degree to which the results of innovation can be observed by others, are the main influences of adaption behaviour according to the theory (Rogers, 1995). Therefore, as per the Diffusion of Innovation Theory, we measured the level of adaption for mobile money through relative advantage, complexity, compatibility, trialability, and observability.

Review of Literature

To increase the adaption and usage of technological innovations, it is important to identify the factors that motivate and stimulate the intention to use (Tao, 2008). Several studies confirmed that "awareness" (Alkhunaizan & Love, 2012) or familiarity with the existence of a product or service, "knowledge" (Alkhunaizan & Love, 2012) or know-how of products or service usage and includes technology, complexity, and level of performance, "risk" (Sweeney, Soutar, & Johnson, 1999) or the absence of security during a transaction due to unexpected errors or dishonesty among the parties involved, and "trust" (Kim, Mirusmonov, & Lee, 2010) or the willingness to use new products or services with a sense of comfort, safety, and risk acceptance are the key proxies of "intention to use mobile money". This evidence led us to identify awareness, risk, trust, and knowledge as the key determinants of intention to use mobile money. "Perceived network quality" (Njele & Phiri, 2021) also the quality of service of the telecommunication service provider, and "perceived cost" (Lema, 2017) also the unit cost a user thinks he undertakes for the consumption of a good or service, have a strong impact in the usage of mobile money (Lin, Li, & Ding, 2020). This evidence helped us identify perceived network quality and perceived cost as determinants of the usage of mobile money.

3. METHODOLOGY

The study was conducted based on the deductive research approach using quantitative techniques. Accordingly, we derived a Likert scale questionnaire with 5 scales to measure the variables. The study focused on the conceptual model (Figure 1) derived

based on the literature review. The users of mobile money were the population of the study which is unknown and thereby we applied a non-probabilistic sampling technique for collected data. Accordingly, we used a convenient sampling technique and received 402 responses from the M-Cash and Easy Cash users. Although Morgan's table suggests a 385-sample size with a 0.05 level of significance (Krejcie & Morgan, 1970), we considered all the responses for the analysis.

The analysis initially derived the regression models to forecast the intention to use mobile money, usage of mobile money, and adaption for mobile money. Later, we tested the impact of intention to use mobile money on the usage of mobile money, and finally the impact of usage of mobile money on adaption for mobile money. The Conceptual Framework is built using evidence from previous empirical studies.

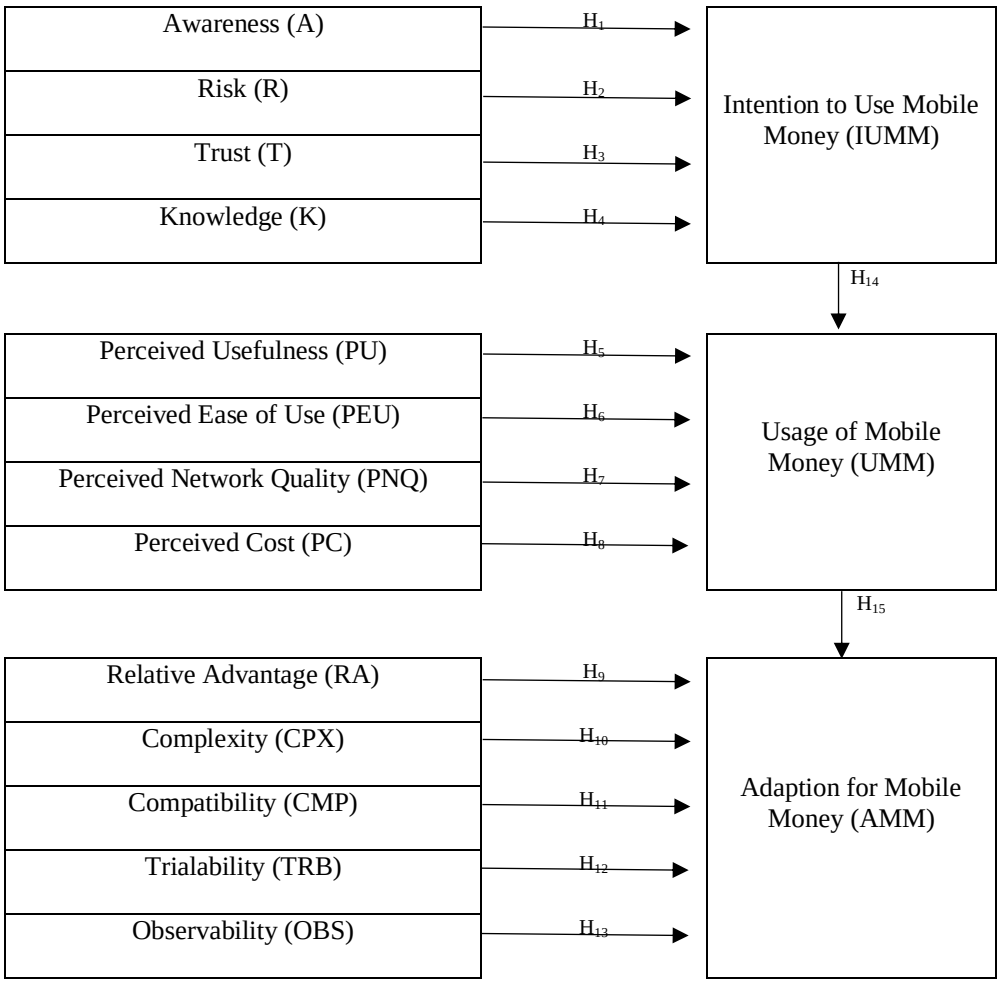

Figure 1: Conceptual Framework

4. FINDINGS AND DISCUSSION

The study measured the reliability of the Likert items using Cronbach's Alpha statistic, convergent validity, discriminant validity, composite reliability, Wilks' Lambda, and Box's M test. Further, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was used to measure the adequacy of the sample size to test the variables.

Table 1: Cronbach's Alpha Statistics

Model 01			Model 02			Model 03		
Variable	Statistic*	N of Items	Variable	Statistic*	N of Items	Variable	Statistic*	N of Items
A	0.806	3	PU	0.831	3	RA	0.793	3
R	0.753	3	PEU	0.832	3	CPX	0.882	3
T	0.828	3	PNQ	0.599	3	CMP	0.790	2
K	0.838	3	PC	0.832	3	TRB	0.649	3
IUMM	0.883	3	UMM	0.788	3	OBS	0.708	2
						AMM	0.877	3

***Statistic: Cronbach's Alpha Value**

The reliability of all the Likert items in defining each variable can be summarized as follows. The Cronbach's Alpha statistics of all the variables are closer to or above 0.6. Thereby, we confirm the internal consistency of the Likert items in measuring the variables. The bivariate correlation analysis confirmed that all the values within the same construct range between 0.5 and 0.7 and are significant at 0.01 level, suggesting that there is a strong convergent validity. The majority of the correlations of the different constructs were below 0.3; confirming the existence of discriminant validity among Likert items in the different constructs. The P-values of Wilk's Lambda test also supported the discriminant validity results of the correlation analysis. The composite reliability of all variables is ≥ 0.6, thus can be considered that the internal reliability of each latent variable is high. Since the significance value of the Box's M is less than 0.001, it is concluded that there is an unequal group variance. Finally, the KMO statistic is more than 0.7 for all the variables; therefore, the sample size is sufficient to conduct the analysis.

Accordingly using the desired Likert items, we measured the variables and derived the multiple regression to understand the relationship between the variables.

Table 2: Summary of Regression Results

Model 01					Model 02					Model 03				
	B	t	P*	VIF		B	t	P*	VIF		B	t	P*	VIF
C	-.564	-2.195	.029		C	.174	1.125	.261		C	1.303	4.597	.000	
A	.147	2.712	**.007**	2.134	PU	.170	3.251	**.001**	3.087	RA	.074	.848	.397	2.141
R	.135	3.077	**.002**	1.040	PEU	.350	6.542	**.000**	3.362	CPX	.647	9.636	**.000**	1.557
T	.395	6.441	**.000**	1.562	PNQ	.123	3.134	**.002**	1.217	CMP	-.256	-3.714	**.000**	1.557
K	.432	6.978	**.000**	2.270	PC	.264	6.270	**.000**	2.088	TRB	.088	1.170	.243	1.330
										OBS	.016	.180	.857	2.528

***P value = 0.05 level of significance**

As per the regression results of model 01, we confirm that the intention to use mobile money has been significantly and positively influenced by awareness (A), risk (R), trust (T), and knowledge (K). Accordingly, we accept hypotheses H_1, H_2, H_3, and H_4. Model 02 directs us to accept hypotheses H_4, H_5, H_6, H_7, and H_8. Thus, we accept that perceived usefulness (PU), perceived ease of use (PEU), perceived network quality (PNQ), and perceived cost (PC) have a significant positive impact on determining the usage of mobile money. Finally, by accepting H_{10} and H_{11} we considered complexity (CPX) and compatibility (CMP) as the determinants of adaption to mobile money. Accordingly, we measured the intention to use mobile money, usage of mobile money, and adaption to mobile money only by using significant variables.

The summary of the derived hypotheses of this study and the decision made is as follows.

Table 3: Summary of Hypotheses Testing

Hypotheses	Conclusion
H_1: There is a significant positive impact of Awareness on the Intention to Use Mobile Money	Accepted
H_2: There is a significant negative impact of Risk on the Intention to Use Mobile Money	Accepted
H_3: There is a significant positive impact of Trust on the Intention to Use Mobile Money	Accepted
H_4: There is a significant positive impact of Knowledge on the Intention to Use Mobile Money	Accepted
H_5: Perceived Usefulness increases the Usage of Mobile Money	Accepted
H_6: Perceived Ease of Use increases the Usage of Mobile Money	Accepted
H_7: Perceived Network Quality increases the Usage of Mobile Money	Accepted
H_8: Perceived Costs decrease the Usage of Mobile Money	Accepted
H_9: Relative Advantage and the Adaption of Mobile Money are positively connected	Rejected
H_{10}: Complexity and the Adaption to Mobile Money are negatively connected	Accepted
H_{11}: Compatibility and the Adaption to Mobile Money are positively connected	Accepted
H_{12}: Trialability and the Adaption to Mobile Money are positively connected	Rejected
H_{13}: Observability and the Adaption to Mobile Money are positively connected	Rejected
H_{14}: The Intention to Use Mobile Money determines the Usage of Mobile Money	Accepted
H_{15}: The Usage of Mobile Money determines the Adaption of Mobile Money	Accepted

To evaluate what we articulated earlier; the positive stimuli from the "intention to use mobile money" motivate an individual to turn his or her intention into action (usage of mobile money), ultimately leading to the adaption", we initially tested the

relationship between intention to use mobile money and usage of mobile money. The findings confirmed a significant positive influence of intention to use mobile money on the mobile money usage decisions of customers (accept H_{14}). Finally, we assessed the impact of the usage of mobile money on the adaption of mobile money which is also found to be positively significant (accept H_{15}).

5.CONCLUSION(S)

We aimed to identify the determinants of the adaption of mobile money among Sri Lankans through this study. Further to the findings of this study, we can conclude that complexity (CPX) and compatibility (CMP) directly impact determining the adaption of mobile money among Sri Lankans. Even though Rogers (1995), introduced five factors for adaption behaviour, the findings of this study confirmed that relative advantage, trialability, and observability are not influential factors when considering the mobile money market. Further, we found that awareness, risk, trust, and knowledge are the root causes that stimulate customers to use mobile money which ultimately leads to adaption through the motivation that they gather by using mobile money. After all, we confirm that as the motivators for usage, the customer perceptions such as perceived usefulness (PU), perceived ease of use (PEU), perceived network quality (PNQ), and perceived cost (PC) also motivate the users to adapt to mobile money.

Initially, we highlighted the challenge faced by mobile money service providers when attracting the target group of customers. While referring to the findings of the current study, the respective service providers can improve customer awareness, develop customer trust, ensure risk controls, and improve customer education on M-Cash or Easy Cash to popularize their products among customers. Successful attempts in these areas will ultimately improve the perceived behaviour of the customer. If the mobile money service providers expect to develop loyal customers, then they must focus on delivering their service at a low cost, with more access points to improve the usability among customers, while improving the network quality.

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