THE FACTORS INFLUENCING THE ADOPTION OF IN-STORE MOBILE PAYMENTS: A VALIDATION AND EXTENSION STUDY

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Abstract- The aim of this study is to identify the factors influencing the adoption of in-store mobile payments. The development of mobile-phone technology is changing consumer demand and behaviors. Consequently, businesses are becoming ever more mobile orientated, offering mobile shopping, mobile payments and in-store mobile payments to consumers. The goals of in-store mobile payments are to i) save consumers time and ii) to facilitate cashless transactions. Regardless of the fact that businesses offer in-store mobile payments and the convenience thereof, consumers adapt slowly to this offering. Thus, the research question that emerged is "What are the factors influencing the adoption of in-store mobile payments?" The hypotheses of this study examine the relationships between the influencing factors and consumers' behavioral intention to use in-store mobile payments. The empirical study implemented a non-probability sample was used, with the sample comprising of students from the Business Management Department at the University of the Free State who owns a smartphone, but has no prior experience with in-store mobile payments. The results of the study indicated that initial trust, self-efficacy, relative advantage and compatibility have a significant positive influence on the intention to adopt in-store mobile payments. Furthermore, perceived risk was found to have a significant negative influence on the intention to use mobile payments in-store. The findings of the study provide guidance for developers and marketers of in-store mobile payments in developing a marketing strategy that would enhance the use of in-store mobile payments.

Index Terms– In-Store Mobile Payments, Marketing, Mobile E-Services, Mobile Payments

I. INTRODUCTION

Since the commercial use of the Internet started, the business sector has been revolutionised [1]. Connected users has the opportunity to shop more efficiently as they can find information about products, compare brands as well as prices and enabled users to purchase products online, whenever and wherever they are [2]. Recently, online shopping has been transferred to smartphones enabling consumers to purchase goods and services by making use of their smartphones [3]. Following this, a payment method was needed to facilitate transactions that took place via mobile phones and mobile payment methods were created.

The purpose of this study is to identify the factors influencing the adoption of in-store mobile payment methods.

II. BACKGROUND

Computers are constantly evolving to more advanced software enabling Internet-users to communicate with each other, as well as businesses globally. With nearly three billion active Internet users, the traditional use, and capabilities, are evolving on a daily basis [2].

The Internet has influenced what, and how, consumers buy [4]. The availability of information about products online has helped consumers compare products in terms of price, availability, product features and to find product information in a timely manner. Moreover the Internet has given consumers a platform to rate the products that they have purchased or the services they have experienced. This feedback given to businesses help them to identify which products or services need improvement [5].

As consumers are becoming more inclined to make use of the Internet, businesses started to take advantage of this emerging platform and electronic commerce (e-commerce) emerged [6]. E-commerce is the use of the Internet to sell and buy goods and services [7], thus changing the way strategies are designed and implemented [8].

Recently, mobile phones are becoming the most popular tool for accessing the Internet [9] and as wireless and mobile networks are evolving, businesses are adopting mobile commerce as a transactional method [10]. Mobile commerce is defined as using wireless technology to facilitate transactions, search for information, and user to measure task performance in consumer and business-to-business communications, with particular focus on mobile devices [11]. The goal of mobile commerce is not only to streamline and accommodate the existing payment systems available, but also to reach new markets in revolutionary ways [12].

Along with the emergence of mobile shopping, mobile payments have been launched. Due to the fact that businesses are providing consumers with the option of buying goods and services online via their smartphones, paying for a product or service via smartphones also became necessary [12].

Following this, the need for an electronic wallet rose, leading to the development of many mobile payment applications (apps) such as: Google Wallet, PayPal, O2 Money, and many more applications worldwide [13]. Mobile payment applications act as a digital wallet, saving the user time and allowing them to make secure payments [14]. However, regardless of

the advances made in electronic payments, studies have shown that debit card payment is still the most popular in-store payment method[15]. Consequently, the management dilemma is the lack of use of in-store mobile payment methods as the preferred method of payment, since credit and debit cards are still chosen as the primary payment method.

III. MODEL DEVELOPMENT

In order to realise the goal of this study, factors that could influence in-store mobile payments have been identified and the study of [16] will be adopted and extended in order to develop the conceptual model. Before presenting the hypothesis for each of the factors, the Valance framework, and Innovation-Diffusion-Theory, will be presented as the theories supporting the conceptual model.

A. The Valance Framework

Valence can be defined as "an emotional quality of an idea that can be either positive or negative in its character, or high or low in its intensity" [17]. Furthermore, the valence theory is a type of consumer decision theory built on rational cognition, which studies consumers' behaviour from positive and negative attributes [18]. These framework studies perceived risk and perceived benefit to be the fundamental features of consumer decision-making.

Previous studies indicate that the valence framework is a valid model for the examination of the e-commerce environment [19], on the other hand, numerous innovation-diffusion-theory extensions are necessary to adapt the valance theory to the mobile environment. The innovation-diffusion-theory offers a range of characteristics which may influence a potential consumer's intention to adopt new technologies such as in-store mobile payments. These characteristics consist of compatibility, relative advantage, image, complexity, visibility, trialability, and results demonstrability [16], [18]. Relative advantage and compatibility have delivered the most reliable justification for consumer intentions in adopting financial and mobile technologies. Previous studies also indicated that individuals regularly respond to influences within their social environments to form or sustain a positive image [20], [21]. Since in-store mobile payments is a reasonably new application, a consumers' perceived public image will play an important role in their decision to use a new system [22]. Therefore, the following three constructs were chosen according their value: relative advantage, compatibility, and image.

The traditional valence frameworks only examine the influence of perceived risk. Forming the negative valence attribute of adopting mobile payment systems only on perceived risk is insufficient since individuals should be willing to pay for the transaction costs [16]. Thus, to study a

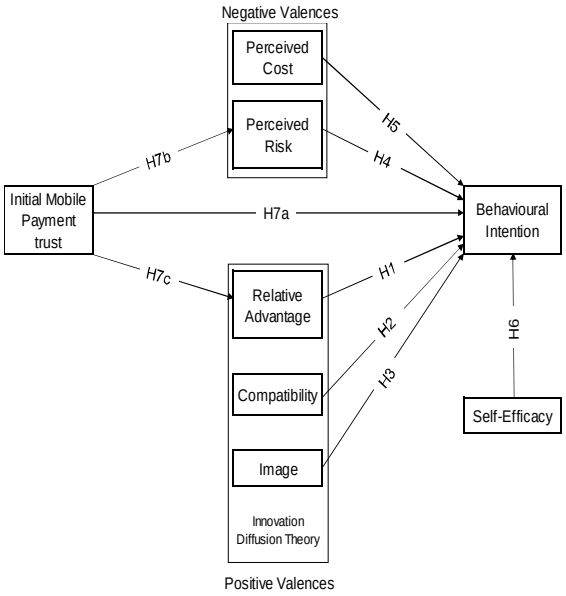


Fig. I Conceptual Model

user's intention to adopt mobile payment system options the influence of perceived cost must be considered as well.

B. Positive Valence

Reference [17] suggest that ideas with a high, positive valence generate a strong attractiveness, and therefore are likely to have a greater potential to influence policy change or in the case of our study influence the adoption of in-store mobile payment systems. For the purpose of this study, the following positive valances' influences on in-store mobile payments will be discussed: relative advantage, compatibility, and image.

1) Relative Advantage

Relative advantage, in the context of this study, can be defined as the degree to which consumer's believe that using in-store mobile payments provides them benefits compared to the costs [23]. Because mobile payment services provide interactivity and time convenience allowing consumers' access to financial assets, the relative advantage of mobile payment services can be expected to have a positive influence on consumers' intention to adopt the technology. Hence:

H1: Perceived relative advantage positively influences intention to use in-store mobile payment services.

2) Compatibility

According to reference [16], compatibility captures the consistency between the potential adopters' current needs, existing values, and present lifestyle and an innovation. The more compatible an in-store mobile payment system is with consumers' current lifestyle and habits the greater the intention to adopt the payment system by the consumer will be. We thus hypothesized:

H2: Compatibility positively influences intention to use in-store mobile payment services.

3) Image

Reference [20] described image as a consumers' desire to develop, uphold, and avoid failure of their image associated with the specific activity. Image can also be described as the level by which consumers perceive the significance of innovation in comparison with potential consumers [21].

A recent study of reference [24] established that image, alongside other factors have a direct positive effect on intention to use mobile payment systems. Reference [16] acknowledged that image strongly increases the intention to use systems such as in-store mobile payments. Hence:

H3: Image positively influences intention to use in-store mobile payment services.

C. Negative valence

Reference [17] suggested that a strong positive change in one variable will lead to a strong negative change in another variable. This is the case with the relationship of perceived risk and perceived cost in relation to the intention to use in-store mobile payments. In this study, the monetary expenses include the access costs of using in-store mobile payments, such as mobile data usage. These costs are measured as perceived costs. Furthermore, the non-monetary expenses of this study refer to the extent to which potential users anticipate in-store mobile payment services to be uncertain and risky. These non-monetary expenses are measured as perceived risk.

1) Perceived Risk

A person perceives risk when he/she cannot fully predict the outcome of an action with absolute certainty, and then has to become vulnerable to a certain degree when deciding to still initiate the action. For this study perceived risk is defined as a consumer's belief that initiating an in-store mobile payment can result in potentially negative uncertain outcomes [25]. If this risk is perceived to be high, consumers will rather continue to use the traditional payment systems they know, understand, and trust more [26]. There are numerous previous studies that have hypothesised the negative valence between perceived risk and intention to use [16], [27]. Thus:

H4: Perceived risk negatively influences intention to use in-store mobile payment services.

2) Perceived Cost

In this study perceived cost is defined as the extent to which a consumer believes that using or adopting in-store mobile payment involves monetary expenses [16], [26]. These costs include access fees, such as data usage, to complete the transaction, and the cost to obtain the smartphone that can carry out the transaction action [26]. This implies that benefit must outweigh cost. Furthermore, this indicates that high perceived costs have a direct influence on usage intention. Therefore:

H5: Perceived cost negatively influences intention to use in-store mobile payment services.

D. Self-Efficacy

According to reference [28] self-efficacy expectations have a significant impact on the intention to use in-store mobile payments. Self-efficacy is the judgment of a person's knowledge, ability, or skills to use mobile payments in-store. Furthermore, self-efficacy can be defined as the belief that an person has the ability to use in-store mobile payments [28], [29]. The studies of references [27], [30], [31] state that the behavioural intention to use in-store mobile payments is greatly influenced by the self-efficacy to perform the anticipated operations through the use of smartphones. Once consumers believe they have the skills to use in-store mobile payments, they will have high behavioural intention to use them [32], [33]. Thus:

H6: Self-efficacy positively influences intention to use in-store mobile payment services.

E. Initial Mobile Payment trust

Finally, the inherently larger risks of developing a sense of a loss of control and uncertainty while conducting in-store mobile payment transactions, increase the importance of consumer trust as a determent of the intention to adopt in-store mobile payment services [16].

Trust is a belief that another will fulfil their commitments according to the expectations of the trusting party as well as not taking advantage of the situation [16], [34]. It is important because gaining trust reduces doubts and uncertainties [34]–[36]. Transactions conducted in a mobile network is likely to be more at risk and unreliable than those in the traditional environments and, for that reason, entail larger potential risk.

Since this study focuses on consumers with a no previous experience with in-store mobile payments, the consumers' trust is assumed to be initial trust. Initial trust is defined as trust between two or more unfamiliar parties and reflects the willingness of potential consumers to take risks in order to fulfil their needs [16], [37], [38]. In the sense of initial trust, unfamiliar indicates that potential consumer do not have concrete, verifiable information about in-store mobile payments, and what they do know is not from first-hand, personal experience [37].

Numerous studies validated the hypotheses stating that consumers' initial trust have an influence on their behavioural intention to use in-store mobile payments [16], [39]. Hence:

H7a: Initial trust positively influences intention to use in-store mobile payment services.

Over-all trust is an important factor that could lessen doubts and perceived risks in social or economic relations particularly when making decisions or adopting a new technology. Studies normally predict that perceived risk has an influence on the consumers' trust instead of trust influencing perceived risk [36], [40]. The findings of reference [40] indicate that trust enables consumers to decide to take a risk. Hence the following hypotheses:

H7b: Initial trust negatively influences the perceived risk of using in-store mobile payment services.

Trust influences perceived relative advantage positively in numerous environments, specifically, in the e-commerce environment [16]. A consumer that has initial trust in in-store mobile payment systems for example will take less time to make a decision about whether to use the system. Thus, saving time in the decision making process and therefore contributes to the perceived relative advantage [41], [42]. Therefore:

H7c: Initial trust positively influences the relative advantage of using in-store mobile payment services.

IV. RESEARCH QUESTION

Technology is constantly evolving. As of late, consumers are more focussed on working with, and on, their mobile phones [43]. As mobile phone technology is developing, it is changing consumer demand and behaviours. This is translating through to the way that they work, communicate, play, shop, and even complete transactions.

Although businesses offer in-store mobile payments as a method to pay for goods and services, consumers do not take advantage of this offering. The research question is therefore stated as: "what are the factors influencing the adoption of in-store mobile payments?"

V. RESEARCH METHODOLOGY

F. Research Design

The type of research design used in this study is a causal research design. Causal studies implicate that a change in independent variable will be the reason for, or will lead to, a change in the dependent variable [44]. In other words one variable produces changes in another variable.

The type of research that will be used in this study is cross-sectional research as it is useful in measuring attitudes about a specific topic. This design is appropriate as this study investigates factors influencing the adoption of in-store mobile payments [45].

G. Research Method

Quantitative research have been used as it addresses the research objective through empirical assessments by means of numerical measurements and analysis [46]. Quantitative research quantifies the problem by generating data transformed into statistics and quantifies attitudes, opinions, behaviours, and other variables as defined [47]. It involves administering standardised, structured questions, providing the respondent with predetermined response options to choose from [45].

H. Data Gathering Method

The quantitative data gathering method used was the distribution of hardcopy, self-developed, group administered questionnaires with mostly closed-ended questions. The questionnaire was handed out, completed, and collected again, within 10-15 min.

The questionnaires were distributed in selected Business Management classes at the University of the Free State during August 2016. In each class, students were asked to complete the questionnaire only if they have a smartphone and have not previously used SnapScan. Since a quantitative data gathering method was used, a self-administered questionnaire is applicable.

The questionnaire consists of three sections. The first section gathered demographical information such as gender, age, ethnicity, type of student, level of education, monthly income, and the main bank they bank with. Other questions included in Section A include is if they own a Smartphone, which Smartphone they own and if they used SnapScan before. To encourage honest and uninfluenced answers, information about SnapScan was included in Section B of the questionnaire. The information consist of descriptions and illustrations on how to set up, and use, SnapScan on your Smartphone. Section C captured respondents' perceptions on the different factors influencing respondents' intention to adopt SnapScan in relation to the different constructs included in the conceptual framework.

To confirm the validity of all the constructs included in the research model used in this study, each construct will be measured with multiple statements and all of them were adapted from reference [16] and other previous research, to fit the context of in-store mobile payments (Table I). Perceptions were measured by means of a seven point Likert Scale.

The 7-point Likert scale used for this questionnaire consist of "Strongly Disagree, Disagree, Somewhat, Disagree, Neutral, Somewhat Agree, Agree, and Strongly Agree".

Table I Construct definitions and statements used to measure each construct

Construct	Measurements	Source
Relative Advantage	· SnapScan has more advantages than making payments using traditional in-store payment methods (cash, debit or credit cards). · SnapScan is a more suitable payment method than using traditional in-store payment methods (cash, debit or credit cards). · SnapScan is a more efficient payment method than traditional in-store payment methods (cash, debit or credit cards). · SnapScan is more effective than making payments with traditional in-store payment methods (cash, debit or credit cards).	[16]
Compatibility	· Making payments using SnapScan is compatible with my other use of my mobile phone. · Using SnapScan is compatible with my lifestyle and habits. · Using SnapScan is a suitable method for me to make in-store payments. · Using SnapScan is compatible with my way to make in-store payments.	[50]
Image	· I think people who use SnapScan have a high profile. · I think people who use SnapScan have more prestige than those who do not. · Using SnapScan is considered a status symbol among my friends.	[51]

Perceived Risk	· I would not feel completely safe providing personal, private information using SnapScan. · I am worried that other people may gain access to my account information through SnapScan. · I would not feel secure sending sensitive information across the SnapScan application.	[16]
Perceived Cost	· Using SnapScan to make in-store payments is expensive. · Using SnapScan to make in-store payments is more expensive than using traditional in-store payment methods (cash, debit or credit cards). · I believe that the access fee (the data cost) for using SnapScan will be high.	[16]
Consumer's initial trust	· SnapScan provides an accurate in-store payment service. · SnapScan provides a reliable in-store payment service. · SnapScan provides a safe in-store payment service.	[43]
Self-Efficacy	· I could make payments in-store using SnapScan if someone showed me how to do it first. · I could make payments in-store using SnapScan if I had only online instructions for reference. · I could make payments in-store using SnapScan if some else had helped me get started. · I could make payments in-store using SnapScan if I had just the built-in help facility for assistance. · I could make payments in-store using SnapScan if there was no one around to tell me what to do as I go.	[52]
Behavioural intention to use	· Given the opportunity, I will use SnapScan. · I am likely to use SnapScan in the near future. · I am willing to use SnapScan in the near future. · I intend to use SnapScan when the opportunity arises.	[53]

I. Study, Population and Sampling

The target population of this study is students, male or female, who owns a basic smartphone and someone who has no prior experience with SnapScan. Smartphones provide respondents with the necessary technology that will enable them to make a mobile payment.

Non-probability sampling was used to determine the sample for this study. Non-probability sampling makes use of subjective methods to select which elements or respondents were included into the sample [48].

The non-probability method used in this research study is a convenience sampling method. Convenience sampling implies that any respondent forming part of the target population can be chosen to participate in the study. .

Group-administered questionnaires was distributed to 400 students in Business Managements classes on the main campus of the University of the Free State. The objective of this study is to determine whether the identified factors influence the adoption of in-store mobile payments. Therefore the aim is to distribute at least 400 questionnaires with questions related to SnapScan as a representative for in-store mobile payments. This approach is used to ensure that an appropriate sample of respondents is reached for data analysis, to provide feedback in order to make thorough conclusions.

J. Data Analysis

The researcher processed the responses to the questionnaires by using the Statistical Package for Social Sciences (SPSS). SPSS is a package of computer programmes that manipulate, analyse, and helps the user to present data in tables and graphs. It has a wide range of data entry, statistical and reporting capabilities [49].

Firstly, descriptive statistics were used to describe the respondents through the use of frequency tables and selected cross-tabulations, followed by the validity and

Table II Rotated factor loadings: Eight-factor solution

Item	Factor 1 Self-Efficacy	Factor 2 Behavioural Intention to Use	Factor 3 Relative Advantage	Factor 4 Compatibility	Factor 5 Perceived Risk	Factor 6 Image	Factor 7 Initial Trust	Factor 8 Perceived Cost
SE4	**.847**	.199	.173	.118	.037	.053	.113	.011
SE3	**.841**	.255	.198	.122	.009	.041	.046	.004
SE1	**.817**	.268	.182	.054	.073	.050	.086	.037
SE2	**.809**	.159	.172	.152	.003	.130	.131	-.007
SE5	**.598**	.125	-.050	.126	-.144	.130	.243	.044
BIU2	.255	**.855**	.155	.204	-.111	.055	.096	.083
BIU3	.292	**.837**	.183	.223	-.095	.016	.139	.017
BIU4	.306	**.805**	.202	.183	-.097	.084	.106	.009
BIU1	.236	**.779**	.177	.135	-.114	.045	.194	-.033
RA2	.160	.230	**.828**	.218	-.050	.072	.149	.012
RA3	.157	.179	**.817**	.303	-.044	.071	.163	.011
RA4	.176	.150	**.785**	.312	-.032	.113	.167	-.034
RA1	.198	.143	**.753**	.240	-.057	.040	.205	-.024
C2	.163	.149	.224	**.831**	.008	.044	.019	.035
C3	.177	.172	.260	**.810**	-.051	.083	.216	.063
C4	.187	.188	.265	**.809**	-.046	.119	.173	.055
C1	.036	.189	.273	**.612**	.129	-.064	.153	.023
PR2	.012	-.073	-.069	-.009	**.894**	-.040	-.026	.115
PR3	.030	-.124	.004	.011	**.878**	-.054	-.033	.142
PR1	-.051	-.085	-.057	.024	**.848**	.073	.030	.059
I2	.062	.064	.076	.042	-.005	**.918**	.025	.066
I1	.129	.044	.083	.017	.046	**.850**	.127	.029
I3	.096	.028	.042	.067	-.056	**.841**	.058	.141
IT2	.183	.166	.243	.183	-.025	.121	**.812**	.048
IT1	.122	.119	.185	.091	.126	.074	**.795**	.064
IT3	.227	.161	.168	.208	-.155	.059	**.751**	.027
PC2	-.001	.013	-.067	.019	.011	.069	.026	**.909**
PC1	.045	.022	-.058	.010	.105	.079	.060	**.878**
PC3	.015	.015	.102	.087	.192	.077	.027	**.708**
Eigen Value	**9.503**	**3.029**	**2.377**	**2.191**	**1.780**	**1.398**	**1.232**	**1.089**
α-Value	**.896**	**.938**	**.921**	**.879**	**.865**	**.861**	**.836**	**.789**

reliability results of the research model testing, tested with an exploratory factor analysis (EFA) and Cronbach's alpha.

Lastly, the hypothesis was tested with multiple linear regressions and the results will be presented.

VI. RESULTS

K. Assessment of the measurement model

A principal component analysis (PCA) was conducted on the 29 items with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin measure (Table III) verified the sampling adequacy for the analysis, KMO = .872 ('great' according to reference [50]). Bartlett's test of sphericity χ^2 (406) = 7907.483, $p < .001$, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component in the data. Eight components had eigenvalues over Kaiser's criterion of 1 and in combination explained 77.93% of the variance. The scree plot was slightly ambiguous and showed inflexions that would justify retaining both components 2, 4, and 8. Given the large sample size, the convergence of the scree plot, and Kaiser's criterion on eight components, eight components were retained in the final analysis. Furthermore all indicators loaded on the expected factors and were higher than 0.7, while loading on other factors for all indicators were lower than 0.4, suggesting good convergent and discriminant validity.

Table II shows the factor loadings after rotation. Loadings greater than 0.4 were considered significant, therefore they appear in bold in Table II. The items that cluster on the same components suggest that factor 1 represents Self-Efficacy, factor 2 the Behavioural Intention to Use, factor 3 the Relative Advantage, factor 4 Compatibility, 5 represents the Perceived Risk, factor 6 Image, factor 7 Initial Trust, and factor 8 the Perceived Cost.

All of the constructs had a Cronbach's α of more than 0.7, which is the acceptable reliability coefficient [51]. Behavioural intention to use and relative advantage had high reliabilities, all greater than 0.9. However, compatibility, perceived, risk, image, and initial trusts' Cronbach's α were slightly lower, ranging between 0.8 and 0.9, but still acceptable. Furthermore, perceived cost had a lower reliability with a Cronbach's α of .789.

L. Results of hypotheses testing

Multiple linear regressions were conducted to predict respondents' behavioural intention to use based on relative advantage, compatibility, image, perceived risk, perceived cost, self-efficacy, and initial trust as well as to predict respondents' perceived risk and relative advantage, based on initial trust. Figure II presents the results of the testing of the conceptual model.

The conceptual model explained 46.4% of the variance in respondents' intention to use in-store mobile payments. The determinant of the relative advantage explained 24.6%

Table III KMO and Bartlett's Test Results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.872
Bartlett's Test of Sphericity	Approx. Chi-Square	7907.483
	df	406
	Sig.	.000

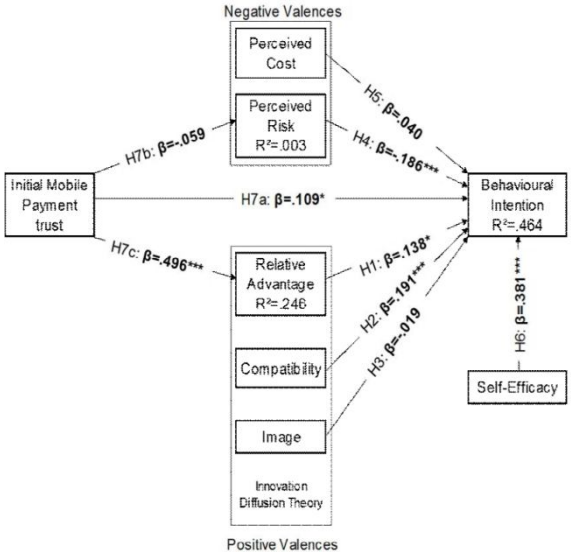
Fig. II Results of the Model Test

*p < 0.05 Significant, **p < 0.01 Significant, ***p < 0.001 Significant

of the variance in the construct, whilst initial trust explained 0.3% of the variance of the perceived risk of in-store mobile payments. The results in Fig. II indicate that six out of the nine hypotheses were supported. Firstly, users' behavioural intention to use in-store mobile payments is significantly influenced by the positive valances: relative advantage ($\beta = .138$, $p = .010$) and compatibility ($\beta = .191$, $p = .000$). The influence of only perceived risk ($\beta = -.186$, $p = .000$) as a negative valance influence, were found significant. The influences of initial trust ($\beta = .109$, $p = .020$) and self-efficacy ($\beta = .381$, $p = .000$) on the adoption intention of mobile payment in-store were also found to be significant. In conclusion, image ($\beta = -.019$, $p = .636$) and perceived cost ($\beta = .040$, $p = .328$) were not found as significant determinants of the behavioural intention to adopt in-store mobile payments. Secondly, the results in Fig. II also indicate that the initial trust in in-store mobile payments has a positive and significant influence on the relative advantage of in-store mobile payments ($\beta = .496$, $p = .000$), but not on perceived risk ($\beta = -.059$, $p = .258$, not significant). A summary of the hypotheses results is presented in Table IV.

Table IV Summary of Hypotheses Testing

Hypothesis	Independent	Dependent	Direction	Hypothesis: Accepted/ rejected
H1	Relative Advantage	Behavioral Intention to Use	+	Accepted
H2	Compatibility	Behavioral Intention to Use	+	Accepted
H3	Image	Behavioral Intention to Use	-	Rejected
H4	Perceived Risk	Behavioral Intention to Use	-	Accepted
H5	Perceived Cost	Behavioral Intention to Use	+	Rejected
H6	Self- Efficacy	Behavioral Intention to Use	+	Accepted
H7a	Initial Trust	Behavioral Intention to Use	+	Accepted
H7b	Initial Trust	Perceived Risk	-	Rejected
H7c	Initial Trust	Relative Advantage	+	Accepted



CONCLUSIONS

M. Limitations

1) The 400 respondents were chosen on a convenience sampling basis and do not represent the entire population of potential users of in-store mobile- payments in South Africa.

2) Since the research questionnaire was based on the in-store mobile payments service, SnapScan, another limitation is the financial institution the respondents were consumers of. Since SnapScan is sponsored by Standard Bank, it could influence consumers of other financial institutions' views of SnapScan. Future research could base their research questionnaire on an in-store mobile payment service which is not sponsored by a specific bank.

3) Furthermore, the data in this study were collected from the students of the Business Management Department of the University of the Free State only, such a narrow sample group may hinder the generalizability of findings because of the possible unique characteristics of this demographic. Future studies should extend the range of the sample group in order to make it more representative of the general population.

N. Managerial Implications of the study

Based on the findings and conclusions, the following practical implications and recommendations can be suggested to improve the intention to adopt in-store mobile payments.

1) Firstly, a consumers' perceived compatibility is also a critical determinant of in-store mobile payment service adoption. It is recommended that developers and designers of in-store mobile payments should make the application as compatible as possible. Providers should think about developing marketing campaigns which showcase the compatibility of in-store mobile payments for consumers.

2) Relative advantage has proven to have a moderately strong, positive influence on the behavioural intention to use in-store mobile payments. This indicates that the higher consumers perceive the relative advantage of using mobile payments to be the higher the chance for them to adopt in-store mobile payments will be. Therefore, service providers should emphasise the advantages of using in-store mobile payments over using other payments such as internet payments or traditional payment methods, to potential consumers.

3) Furthermore, self-efficacy has a strong and positive impact on consumers' behavioural intention to use mobile payments in-store. Thus, service providers should carefully consider the issues of self-efficacy to ensure that their offering meets their consumers' current values, needs, and lifestyles. In order to increase perceived self-efficacy among potential consumers, it is recommended that service providers point out similarities between in-store mobile payments and other payment methods consumers are more familiar with.

4) Firms should also look for opportunities to encourage their consumers' initial trust in in-store mobile payment services. Therefore it is recommended that the marketing managers make use of marketing campaigns, such as the social media campaign mentioned above, to enhance consumers' trust through communicating a strong reliable and reputable brand.

5) Moreover, perceived risk also has a significant impact on the intention to adopt in-store mobile payments. Therefore service providers should pay careful attention to possible risks associated with in-store mobile payments and form tactics to decrease these perceived risks. Recommended tactics include that the mobile payment service providers should frequently educate consumers on how to keep their passwords protected and to create awareness of new security threats, and more importantly, how these threats will handled.

6) The moderately strong and negative influence of perceived risk on the intention to use in-store mobile payments indicates that this negative valence play an important role in reducing consumers' mobile payment services adoption decision. Mobile payment firms should concentrate on reducing consumers' perceptions of risk. Trust-building measures that can improve their consumers' perceptions of risk include satisfaction guarantee policies, training and trial events, and disclosure of security and privacy assurances.

O. Theoretical Implications of the Study

1) The first theoretical contribution that has been made, was the validation that initial trust, as well as negative and positive valances have a significant influence on the intention to adopt in-store mobile payments. On the other hand, this study could not validate the significant influence of image and perceived risk on the behavioural intention to adopt mobile payments in-store.

2) The second contribution was the exclusion of the "internet payment trust" construct. Since the study is

based on the factors influencing the adoption of in-store mobile payments, trust in internet payment were not considered a necessary factor.

3) Another important theoretical contribution of the study is the extension of the model of Lu, Yang, Chau et al. (2011) with self-efficacy. The measurement model, including the new construct self-efficacy, explain 46.4% (R^2_{AB}=.464) of the behavioural intention to use in-store mobile payments. The measurement model without the self-efficacy construct explain 36% (R^2_A=.360) of the intention to adopt mobile payments in-store.

Cohen's f² effect size measure for sequential multiple regressions [52] were calculated (1) to measure the effect of adding self-efficacy to the measurement model:

$$f^2 = \frac{R^2_{AB} - R^2_A}{1 - R^2_{AB}}$$

$$f^2 = \frac{0.464 - 0.360}{1 - 0.464}$$

$$f^2 = \frac{0.104}{0.536}$$

$$f^2 = 0.194$$

(1)

With a f² of 0.194, self-efficacy have proven to have a medium [53] effect on the measurement model's influence on in-store mobile payments. Therefore, self-efficacy is a necessary aspect that consumers take into account to make their decisions about using in-store mobile payment services.

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