

The Effects of Perceived Trust and Ease of Use on Adoption of Mobile Marketing in the Telecommunication Industry of Tanzania

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Abstract

This study examines the effects of perceived trust and perceived ease of use on the adoption of mobile marketing in the telecommunications industry of Tanzania. Guided by the Technology Acceptance Model (TAM) it predicts the adoption of mobile marketing in the Telecommunications industry in Tanzania. Survey strategy was employed in data collection, using structured questionnaires and collected data from 5 municipalities, 73 wards and 6 hamlets, by using multi stage sampling of 406 respondents in Dar es Salaam. Quantitative data were analyzed using multiple linear regression. Findings indicate that perceived ease of use and perceived trust had positive and significant influence on the adoption of mobile marketing. We provide recommendations to the telecommunications companies to improve their mobile marketing products and services by making better products that are easy to use and trustworthy so as to conform to the needs of their customers.

Keywords: Mobile Marketing; perceived ease of use; perceived trust; Technology Acceptance.

1. Introduction

Mobile marketing has changed the way business entities and consumers behave and interact [11].

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Mobile devices which were mainly for getting information have drastically changed into becoming the medium where customers can get the products or services, where businesses can sell, distribute and advertise their products or services. Mobile marketing has improved business performance. This is due to the increase in the customers' adoption, customers' communication and customers' sales, especially in developed countries [21]. Mobile marketing adoption can be attained effectively depending on how firms undertake the integrated mobile marketing communication strategies which can be easily known by the customers [34]. According to the Mobile Marketing Association [24] mobile marketing is the marketing activities and processes facilitated by mobile technologies through wireless communication for creating, communicating, delivering customers' and stakeholders' value through mobile devices online [44]. Mobile marketing adoption has a lot of benefits in business undertakings as it creates best business strategies for meeting consumers and marketers, and thus makes consumer understanding of products easy and enables purchase without the limit of place and time [27]. According to [12], which is an international mobile operation company, in the year 2016, there were 420 million mobile subscribers in Africa. Despite the fact that there is growing mobile subscription in the continent, Africa still has the lowest ratio of mobile marketing adoption when compared to the total mobile marketing adopters in the world [12]. However, Africa mobile penetration rate is 44%, which is lower than the global average penetration rate of 66 % [12]. According to the Tanzania Communication and Regulatory Authority (TCRA) report of 2018, the number of mobile subscribers in Tanzania was estimated to be 42 million in the year 2018 (TCRA, 2018), with mobile money subscribers amounting to 21million. The country has 7 land line and mobile operators, namely Vodacom, Bharti Airtel, Millicom Tanzania Limited (Tigo), Zantel, TTCL, Smart and Halotel [49]. However, Tanzania is among countries with cheapest mobile data [49]; while the internet penetration rate is as low as 43% [50]. The country has about 23 million internet users with the population of more than 50 million [51, 52]. Despite the fact that much transformation is taking place in the country in terms of policies and infrastructure that facilitated many persons to have mobile phones, few have adopted mobile marketing for business purposes [26, 28]. The most common type of mobile marketing is mobile payment and not the holistic mobile marketing context as defined in this study [26, 51]. This implies that most mobile subscribers use their phones for social and non-business activities rather than marketing purposes [15]. Nevertheless, the country has introduced the third and fourth Generation (3G, 4LTE) mobile services and wireless broadband services which have improved the internet services [49], but still there are few users of mobile marketing. In Tanzania, the ratio of mobile marketing adoption is significantly low compared to other neighboring countries [28, 29,32, 36,37,1] Due to the newness of the mobile marketing developments, the area has been insufficiently researched particularly in Tanzania [26,28]. There are few studies which were guided by the Technology Acceptance Model (TAM) on the effects of perceived ease of use and perceived trust in influencing customers' adoption of mobile marketing in telecommunication industry in Tanzania. However there are many studies done in developed countries [22]. Past studies in Tanzania have mostly indicated the effects of perceived ease of use in relation to behavioral intention [8] perceived ease of use and compatibility [26] perceived ease of use in relation to perceived usefulness in adoption of mobile payment [1,26]; perceived trust in relation to perceived ease of use of mobile payment [4]; perceived trust in relation to mobile payment in Small and Medium Enterprises [16]; personality characteristics, website characteristics in relation to trust [30]. Nevertheless, there are few studies in the telecommunication industry specifically on adoption of mobile marketing and relating it with perceived ease of use and perceived trust. Technology Acceptance Model (TAM) has been used in various

studies in Tanzania on assessing the effects of user acceptance of mobile payment [4, 26, 16]. The other model that has been used is the Unified Theory of Acceptance of Technology (UTAUT) [8]. However, these studies emphasized on students' intention to use mobile payment [8], mobile payment acceptance on Small and Medium Enterprises (SMEs) [16]; mobile banking [1]; mobile payment [26]; relationship between consumer personality, web design and trust on consumer purchase of automobile using trust and signaling theories [30]. Previous studies in both developed and developing countries have mixed results on the influence of perceived trust on the adoption of mobile marketing. Studies such as those done by [18, 26], all found that trust has an influence on the adoption of mobile marketing. On the other hand, studies by [31, 16] found that trust has no influence on the adoption of mobile marketing. There are also disparities in relationships between perceived ease of use and adoption of mobile marketing in previous studies. Some scholars found positive and significant relationships [1,26,33,13,45] Other scholars found no significant relationships between perceived ease of use and adoption of mobile marketing [9]. This disparity of findings calls for a need to use the TAM model in assessing the effects of PEOU and PT on adoption of mobile marketing in the telecommunication industry of Tanzania. There are various models and theories which have been used in describing adoption and diffusion of technology. These are; Theory of Planned Behavior (TPB) [3]; Theory of Reasoned Action [17]; Technology Organization Environment (TOE) [40]; Diffusion of Innovation Theory(DOI) [40]; and Technology Acceptance Model(TAM) [53]. Among these theories and models, TAM has been used in more studies [38] because it highlights better adoption behavior of consumers in using technology [38]. In the current study, we have revealed that there is a need of still using TAM to increase the explanatory power of the model in predicting adoption of mobile marketing in telecommunication industry in Tanzania. Major TAM constructs are perceived usefulness (PU) and Perceived ease of use (PEOU), which are behavioral components of the model, and other components of the model are behavior intention (BI) and attitude (AT) as supporting components of PU and PEOU. Mobile marketing is at an early stage in Tanzania [26, 28]. Previous studies indicated that PEOU influences adoption at an early stage, while Perceived Usefulness (PU) on the later stage [6, 26], such that PEOU enhance the performances of PU [6], therefore PU was dropped from this study. Therefore, this study has adopted TAM and tested perceived ease of use (PEOU) and perceived trust (PT) on customers' adoption of mobile marketing in the telecommunication industry in Tanzania. However, behavioural intention (BI) under TAM was also dropped as previous studies have indicated that BI does not necessarily lead to the actual use of the system [2,5,46]. However, in his study, [5] argued that attitude partially influences the perceived usefulness (PU) and perceived ease of use(PEOU) towards behavior intention (BI) and [41] argued that, subjective norms manipulation affects only behavior intention(BI) and not attitude. According to [41] attitude can remain the same to an individual, regardless of the adoption and innovation process in new information technology. With those reasons, therefore, attitude was also not included as part of this study, under TAM constructs. However, perceived trust has been indicated as having relationship with PEOU and PU towards technology adoption [56]. Hence various studies had included perceived trust as part of the extension on the TAM model [56, 57]. Therefore, perceived trust has also been used as part of the constructs guided by the Technology Acceptance Model (TAM) under this study.

1.1. Perceived Ease of Use (PEOU)

Perceived Ease of Use (PEOU) refers to how a person feels in using the technology that he will be free from

effort [53]. Many studies have indicated the use of perceived usefulness (PU) and perceived ease of use (PEOU) as major components of technology adoption since PEOU attributes function effectively in the early part of technology adoption [53]. Due to the fact that mobile marketing adoption in Tanzania is at infant stage, the study used only PEOU as consumers need first to understand the technology in earlier stage before believing in using it. Therefore, PEOU suffices the efficacy to be tested under this study. Perceived ease of use is regarded a strong determinant of consumers' beliefs on adoption of mobile marketing products and services, especially at the introduction stage of the mobile marketing products or services in the market [53] Various studies have shown significant effects on PEOU and adoption of mobile financial services [10,13,19,42 , 47,54]. In Tanzania, [23], indicated that Perceived ease of use (PEOU) does not influence adoption of mobile financial services for the unbanked population. However, [26] found that PEOU has influence on mobile payment. [25] Indicated PEOU has an influence on mobile payment in Small and Medium Enterprises (SMEs). Therefore, this study has made the following Hypothesis:

H1a₁: Perceived ease of use has significant influence on consumers' adoption of mobile marketing in the telecommunication industry.

1.2. Perceived Trust (PT)

Trust refers to the expectation of others on products or services that has an implication on consumers' decisions on product or service choice [53]. Past studies indicated that trust positively influences adoption of mobile payment [35, 39, 57, and 18]; while [31] has indicated that trust has no influence on customer's adoption of mobile marketing. In Tanzania past studies have indicated that perceived trust positively influences adoption of mobile payment [1, 15, 26]. However, the study done by [16, 4] indicated perceived trust to have no influence on the adoption of mobile payment. Therefore, the following hypothesis is proposed:

H2a₁: Perceived trust has significant influence on consumers' adoption of mobile marketing in the telecommunication industry.

1.3. Methods

The study was conducted in five municipalities of Dar es Salaam, namely Ubungo, Kinondoni, Ilala, Kigamboni and Temeke using primary data. The areas were chosen due to the large contribution of Dar es Salaam on the country's Gross Domestic Product (GDP), accounting for 30% in 2018 [49]. Out of 440 questionnaires, 406 were returned. The questionnaires had mainly three sections, which were demographic information of respondents, adoption of mobile marketing (AMM), Perceived trust (PT), Perceived ease of use (PEOU). The population consisted of all customers of the three telecommunication companies namely Vodacom, Airtel and MIC (T) Limited (Tigo) in the 5 municipalities out of 7 land line and mobile operators in the country. These telecommunication companies were selected because they account for about 87% of the country market share. Multistage sampling was applied in selection of respondents who use mobile marketing platforms. A Cross section survey design was applied in this study. 7-point Likert scale was used as a measurement scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Perceived Trust (PT) was measured by seven items, which were

adopted from [5] and [19]; Perceived ease of use (PEOU) was measured by five items, adopted from [53] and [5] while Adoption of Mobile Marketing (AMM) was measured by seven items adopted from [5]

1.4. Results

1.4.1. Profile of respondents

The sample were the customers of the three telecommunications companies categorized as the employees which included the respondents with formal employment and paid up salaries who had mobile phones (128), which accounted for 31.5% of the respondents, business persons which included the sales agents, wholesalers of consumer and industrial products who have mobile phones (89) which accounted for 21.9% of the respondents and customers working in the informal sector (not with formal employment) which were retailers of consumer and industrial products with mobile phones 96 (23.6%) and 93 (22.9%) were students from tertiary education institutions. Since gender has an influence on technological adoption [26], the gender of the respondents was analyzed. Out of 406 participants who returned the questionnaires, 203 (50%) participants were females and 203 (50%) were male.

1.5. Reliability Test

Cronbach’s alpha was used to measure the internal consistency of the research instruments. The results on the reliability on Cronbach’s alpha ranged from 0.905 to 0.921. Since all the values were above 0.7 which is the cutoff point, that indicated that the questionnaire used was reliable in measuring the studied constructs [43]. Table 1 indicates the reliability results. In order to assess if items measured the same construct, exploratory factor analysis was done. Before exploratory factor analysis was done, there was a need to test the sample to see if the data were enough and suitable for factor analysis. In testing the adequacy of the sample, Kaiser Mayer Olkin (KMO) and Bartlett’s Test for Sphericity (BTS) results were used. KMO value should be greater than 0.6 and BTS values should be less than 0.05 in order to indicate that the data were suitable for factor analysis [7]. In this study, BTS had a value of less than 0.001 and KMO had a value of 0.8 that the data were suitable for FA. According to [7], for items which measure similar construct to have similarities, factor loading should have the cutoff point of above 0.3 such that the item with factor loading above 0.3 was retained for analysis. As indicated in Table 2, factor loading had value above 0.3 which is the cutoff point that indicated that items were reliable for the studied phenomenon and analysis.

Table 1: Summary of Reliability and Validity of Data (Constructs)

Construct	Reliability			
	Cronbach’s alpha	No. of items	KMO	BTS X ² (P-Value)
Adoption of Mobile Marketing	0.921	7	0.915	1840.2 (<0.001)
Perceived Trust (PT)	0.907	7	0.901	1691.411 (<0.001)
Perceived Ease of Use (PEOU)	0.905	5	0.857	1286.215 (<0.001)

Source: Fieldwork, (2020)

Where;

KMO: is the Kaiser-Meyer-Olkin Measure of Sampling Adequacy

BTS: is the Bartlett's Test of Sphericity

Table 2: Factor loading for each item under the studied constructs

Construct	Item	Factor Loading
Perceived Ease of use (PEOU)	PEOU1	0.879
	PEOU2	0.855
	PEOU3	0.845
	PEOU4	0.838
	PEOU5	0.837
Perceived Trust (PT)	PT1	0.804
	PT2	0.824
	PT3	0.815
	PT4	0.829
	PT5	0.778
	PT6	0.77
	PT7	0.789
Adoption of Mobile Marketing (AMM)	AMM1	0.837
	AMM2	0.819
	AMM3	0.831
	AMM4	0.8
	AMM5	0.794
	AMM6	0.836
	AMM7	0.842

Source: Fieldwork, (2020)

1.6. Correlation Analysis

Correlation Analysis was undertaken to establish the relation between the variables. According to [48] correlations ranges from $+0.00$ to $+0.30$ shows little correlation, $+0.30$ to $+0.50$ shows low correlation, $+0.50$ to $+0.70$ moderate, $+0.70$ to $+0.90$ high and $+0.90$ to 1.00 extremely high correlation. Multicollinearity is possible in the model when $r \geq +0.9$ [48]; The correlation in Table 4.3 indicates that correlation between independent variables and dependent variables ranges from $r = 0.467$ to $r = 0.568$ at $p < 0.01$, this shows that all independent variables have significant relationship with adoption of mobile marketing (AMM) in Tanzania in

telecommunication industry.

Table 3: Pearson Correlation among variables (N=406)

Variable	AMM	PT	PEOU
AMM	1	0.467**	0.568**
PT	0.467**	1	0.467**
PEOU	0.568**	0.568**	1
N	406	406	406

**Correlation is significant at the 0.01 level (2-tailed); Source; Field work, (2020)

1.7. Multiple Linear Regression Analysis

Multiple Linear Regression Analysis was undertaken in order to test the hypothesis of the studied objectives.

Table 4: Multiple Linear Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		Collinearity Statistics			
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	-0.688	0.184		-3.737	0	-1.05	-0.326					
	PT	0.181	0.057	0.181	3.159	0.002	0.069	0.294	0.767	0.157	0.084	0.217	4.617
	PEOU	0.177	0.056	0.177	3.13	0.001	0.066	0.288	0.768	0.156	0.084	0.224	4.459
R	0.849	R squared	Adjusted R	Std error of estimate	Du blin Wa tso n	F	Sign (P value)						
		0.719	0.711	0.53789977	1.8	91.432	(<0.001))						

Source: Fieldwork, (2020)

As indicated in Table 4, the fitness of the model used was analyzed on the Analysis of Variance (ANOVA) and

indicated the F statistics to be ($F=91.432$ which was significant at $p<0.001$. which indicated the model was fit on the studied phenomenon; that all variables explained the adoption of mobile marketing. The coefficient of determination R squared was 0.719, and the adjusted R was 0.711, that indicated that all variables explained 71 percent on adoption of mobile marketing, as indicated in Table 4.

1.8. Effect of Perceived Trust (PT) on AMM

The findings from Table 4 indicated that Perceived Trust (PT) has significant effects on the adoption of mobile marketing at $P=0.002$ (95% CI; 0.069, 0.294). Therefore, the alternative hypothesis, that Perceived trust significantly influence adoption of mobile marketing is supported.

1.9. Effect of Perceived Ease of Use (PEOU) on AMM

The findings from Table 4 indicated that Perceived Ease of Use (PEOU) has significant effects on the adoption of mobile marketing at $P=0.001$ (95% CI; 0.066, 0.288). Therefore, the alternative hypothesis that Perceived ease of use (PEOU) significantly influenced adoption of mobile marketing is supported.

2. Discussion

The findings have established, for researchers and practitioners on the significance of adoption of mobile marketing in telecommunication industry, in relation with the effects of perceived ease of use and perceived trust. Regarding the perceived trust, the findings are consistent with the study by [26, 15, 35, 39, 57] that perceived trust positively influenced adoption of mobile payment as part of mobile marketing. This implies that, mobile service providers and researchers, should keep emphasizing on the need of consumers' trust on the mobile marketing products and services. As it has been noted, customers do not only buy products, but need protection of their privacy and security when using the mobile marketing platforms. This had been indicated by respondents that they may use the mobile marketing platforms of telecommunication companies in Tanzania, if the platforms keep promise and commitment, also the mobile marketing platforms can be used only, if it they have clear conception; nevertheless, they can be used only if customer have system control of the mobile applications. This signifies mistrust between organizational products and the customers. Therefore, there is a need of mobile companies in Tanzania, to further enhance better trust of their products by removing all the barriers that impose mistrust between customers and the organizations. The findings are inconsistent with the study by [16, 4], which indicated that perceived trust has no influence on the adoption of mobile payment. This could be attributed to the differences on the sectors that the study was done and the profile of the respondents' demands and needs, as [20] insisted that consumer needs are dynamic, that they change with variation in marketing environments and market forces. In theoretical understanding, these findings give imperative knowledge on the important factors in customers' adoption of mobile marketing in the telecommunication industry in Tanzania, particularly the importance of perceived trust as the key determinant of consumers' adoption of mobile marketing. The findings are consistent with the Technology Acceptance Model (TAM). However, the findings support the study by which indicated that PEOU and Perceived Usefulness (PU) have positive relationship with trust. Regarding the findings on Perceived ease of use, which indicated that Perceived

Ease of Use (PEOU) has significant effects on the adoption of mobile marketing in telecommunication industry in Tanzania, these findings are consistent with the study by [10,13,19,42,47] that PEOU significantly influences adoption of mobile financial services. As [26] insisted that mobile marketing is still at its early stages in Tanzania, hence mobile marketing service providers should ensure that their products are found easily by customers, that mobile marketing products should be easy and simple to use. This will facilitate more adoption of mobile marketing platforms. The findings have no surprising results as mobile marketing needs to be easily and accessible in using them [14]. That consumers will not need a more complex device and platform in both hardware and software parts, that consumers need a user-friendly product and services that can ease their performances for the intended marketing activities [55]. The findings are not consistent with the study by [9] which found insignificant relationships between perceived ease of use with mobile marketing adoption. These could be attributed to the contextual factors, that customer preferences and adoption of mobile marketing products are attributable to the culture, environmental factors, and lifestyle and demand patterns [54]. The important findings on this study entails that mobile marketing strategies by the mobile marketing service providers need to ascertain the demographic differences of their customers before designing and selling of their mobile marketing products and services in the market. In theoretical understanding, these findings give out the important factors in customers' adoption of mobile marketing products, particularly the importance of perceived ease of use as the important determinant of consumers' adoption of mobile marketing products and services in the telecommunication industry in Tanzania. The findings are consistent with the Technology Acceptance Model (TAM) that PEOU positively influences consumers' adoption of technology.

2.1. Theoretical and Practical Implications

The findings of this study have made up the following theoretical and practical implications for future use. In theoretical underpinning of the study, the perceived ease of use construct as part of Technology Acceptance Model and perceived trust as part of extended TAM constructs was significant in understanding the customer's adoption of mobile marketing in telecommunication industry in Tanzania. Since the study was guided by TAM it has revealed that customers perceive positive adoption on mobile marketing platforms and accept mobile marketing platforms that are more easy to use and trustworthy; also that consumers assess the mobile marketing products depending on how the system is easy to use and trustworthy. Therefore, Technology Acceptance Model (TAM) has shown efficacy in studying the adoption of mobile marketing in telecommunication industry in Tanzania. The model may be used in other studies in the context of developing countries. This study has applied Technology Acceptance Model (TAM) and validated it in the context of developing countries, particularly in Tanzania. Therefore, this study has contributed on the factors that influence adoption of customers' mobile marketing in telecommunication industry in Tanzania, by showing that perceived ease of use and perceived trust has a significant influence in customers' adoption of mobile marketing products in the telecommunication industry in Tanzania. Mobile service providers and researchers need to understand what are customers' benefits on the mobile marketing products that customers seek for ease of use of the products or services; an important component of customers' benefits. To the researchers, the findings of this study have indicated the parsimonious model with high explanatory power as determinant on the adoption of mobile marketing in telecommunication industry in Tanzania. However, the service providers (practitioners) need to improve their marketing and business strategies in relation with understanding the consumers' demands,

markets and types of products, with the reflection of understanding of customers' benefits. As [20] denotes, that the consumers' preference on products or service is the core benefit of the product a consumer is looking for. This will imply that, mobile service providers ought to improve the performance of the mobile marketing systems and programs over time, and undertake thoroughly marketing research, that will stimulate customer benefits,, hence much adoption, for the better business growth of telecommunication sector. These findings have revealed that customers need products that are easy to use. Most designers in information system think of designing products that are useful to the customers. It should be understood that usefulness is important but not sufficient [53], but further it should be understood that customers need products that are easy to use. Therefore, mobile service providers need to understand their customers' needs and demands, and influence the consumers' interests, by explaining the benefits of their products and services, in order to offer more differentiated products that conform to the usefulness of the customers in the markets; but most important designers and practitioners should ensure products that are easy to be used by customers. Mobile service providers should develop mobile marketing systems and programs that are trustworthy and that protect the privacy of their customers. As it has been revealed, easy to use and perceived trust go hand-in-hand in influencing the customers' adoption of mobile marketing platforms. Mobile service stakeholders and government should work hand-in-hand on formulating better policies that can assist mobile service providers to sell more on mobile products and services that meet the demands of the customers. This calls for the mobile service stakeholders to improve by having better technology infrastructure, which goes with the support of reduction in tax by the government to stimulate customers' demand, which will enhance the economy of the country and the growth in telecommunication business in Tanzania.

2.2. Conclusions and Recommendations

The findings of this study conform to the Technology Acceptance Model (TAM) on assessing the effects of perceived ease of use, perceived trust on adoption of mobile marketing in Tanzania. Perceived trust and perceived ease of use showed positive influence on adoption of mobile marketing in Tanzania. The study managed to include better representation on the demographic variables which included better gender considerations. The study recommends that mobile companies with the cooperation of business stakeholders should make sure they develop mobile platforms and applications that are easy to use and trustworthy on the consumers' perspectives. Notwithstanding, their marketing approach should ensure that they position their products as user friendly to the consumers. This could be attained by involving their marketing, information technology and research and development personnel, such that they can cooperate in designing, planning of having better mobile marketing products, in accordance with the customer's needs. Having regular customer feedback by conducting marketing research will improve the mobile marketing products and services, thus enhance business growth and better national economic growth of the nation.

2.3. Limitations and Areas for Future Studies

The study applied cross sectional research design and quantitative approach. Therefore, the findings of the study were established by inferential analysis without explicit proof. The study recommends future studies, could be done through longitudinal research design approach in order to have the more explicit proof on the effects of

perceived trust and perceived ease of use on adoption of mobile marketing in the telecommunication industry of Tanzania. The sample was taken from Tanzania. Since respondents have diversity and differences in demographic characteristics which can affect the validity of the sample taken. The study recommends the studied model to be tested in other countries in order to identify the factors influencing customers' adoption of mobile marketing adoption in telecommunication industry in other countries, concerning the effects of perceived trust and perceived ease of use. There are a lot of factors which have not been undertaken in this study. Further studies regarding the the effects of perceived trust and ease of use on adoption of mobile marketing in the telecommunication industry of Tanzania need to be done. Since the study was done only in one region out of the 26 regions of Tanzania, the sample may sometimes not be the actual representation of the entire population regarding mobile marketing adoption in Tanzania. However, this study was limited to perceived ease of use and perceived trust. Further study may include other factors such as perceived usefulness, perceived risks, attitude and perceived behavioural intention.

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