

Factors Influencing Consumers' Intention to Use Mobile Applications for Online Shopping in the Kingdom Of Saudi Arabia (KSA)

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Abstract

This study examines factors influencing consumers' intention to use mobile applications for online shopping in the Kingdom of Saudi Arabia (KSA). The research employed quantitative methodology, using study sample consisting of 150 participants randomly selected from the Saudi community. A questionnaire was developed to collect the primary data, resulting in one hundred (100) usable responses, i.e. a response rate of 66.67% (100/150). The collected data was subsequently analysed using the Statistical Package for Social Software (SPSS) and the Amos programme, to establish the path of the independent variables using Structural Equation Modelling (SEM). The study results identified the following: firstly, a positive or strong significant correlation between subjective norms and customer intention to use mobile applications for online shopping in KSA. Secondly, a positive, significant correlation between customer intention and the use of mobile applications for online shopping in KSA. Thirdly, that Perceived Behavioural Control (PBC) had a negative correlation with customer intention to mobile applications for online shopping in KSA. Finally, that the main factors influencing consumers' intention to use mobile applications for online shopping in KSA consisted of: (1) attitude; (2) perceived behaviour control; (3) subjective norms; and (4) perceived trust. This research therefore contributes to the current literature by offering important evidence of how key players in the Saudi e-commerce sector can leverage consumers' intention to use mobile applications for online shopping in KSA. Due to its contribution to the picture of customer intentions towards online shopping in KSA, this study has significance for the Saudi e-commerce sector, online shopping companies and technological sector, as well as for online consumers.

Keywords: mobile applications, online shopping, attitude, perceived behaviour control, subjective norms, perceived trust

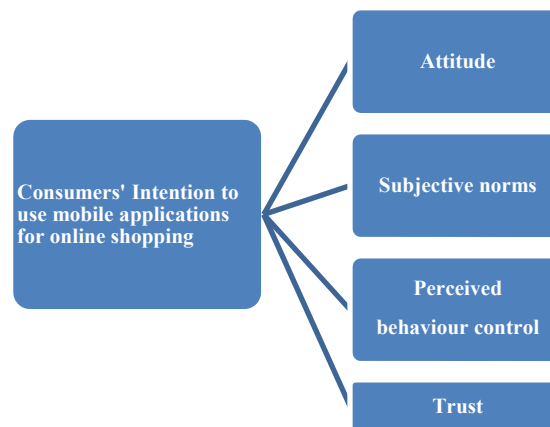
1. Introduction

Mobile applications assist mobile users or consumers in all aspects life, including: (1) searching for information; (2) video streaming; (3) gaming; (4) e-banking; (5) networking; and (6) online shopping (Taylor and Levin, 2014). Furthermore, mobile users install mobile applications onto their smartphones to access mobile commercial services, including mobile or online shopping, mobile auctions, mobile investing and banking (Fong, 2015). Online shopping is a form of e-commerce that allows the purchase of goods or services directly from sellers over the Internet. Doherty et al. (2010) viewed online shopping as a method of direct marketing requiring direct and effective communication between consumers and marketers, as well as a marketing instrument for services or goods. Azizi and Javidani (2010) stated that online shopping offers greater simplicity in the search for, and locating of, appropriate goods and services in a manner that is advanced, rapid and low-cost, and which normally ensures low prices for goods. Such mobile applications enable consumers to use their phones to search for and compare services or products through online functions, thus providing them with a considerable amount of assistance for making informed choices when buying a product online. Therefore, online shopping is of considerable value to consumers, enabling e-shoppers to access a greater choice of services or products. In comparison to other Arab nations, the Kingdom of Saudi Arabia (KSA) has a higher number of online shoppers, who spend more than \$3.0billion annually in the e-commerce sector. Currently, there are approximately 3.50 million e-commerce users, representing 14.260% of the population of Saudi population (Aldhmour et al., 2016). Herndon (2013) argued that, regardless of the preliminary higher expectations of increased use of mobile applications for online shopping, it remains problematic to develop effective and broadly implemented mobile

commerce. However, as noted by Tsai and Ho (2013), the latest intensive growth in the possession of smartphones reveals the potential for an increasingly successful global mobile commerce. The majority of existing studies have focused on the factors influencing consumers' actual usage of online shopping to buy specific services or goods, with little attention being paid to the significance of each factor influencing consumers' intention to use mobile applications for online shopping in Arab nations. This current study is therefore undertaken in response to a greater need to examine the factors influencing the intentions of consumers to use mobile applications for online shopping in KSA and thus answers the following research question: "What are the factors influencing consumers' intention to use mobile applications for online shopping in KSA?"

2. Literature Review

The framework of this study drew on the Theory of Planned Behaviour (TPB) model, introduced in 1980 as the Theory of Reasoned Action (TRA). The concept described behaviours the individual can control, and focused on relationships between attitudes, beliefs, behavioural intention and behaviours, in public relations, healthcare and advertising. The theory states that attitude has an influence on behavioural intention, as related to behaviour, subjective norms and Perceived Behavioural Control (PBC), (Ajzen, 1980, 1985, 1991, 2006; Fishbein, 1980; Pavlou & Fygenon, 2006; Taylor & Todd, 1995a). There are four proposed constructs in this current research model, facilitating an understanding of the perception, and actual experience, of Saudi consumers in relation to using mobile applications for online shopping. The conceptual framework underpinning the research is set out below in Figure.



2.1 The Role of Attitude in Using Mobile Applications for Online Shopping in KSA

Aldhmour et al. (2016) defined 'attitude' as consumers' psychological approach to purchasing over the Internet, while Chiu et al. (2003) viewed it as representing their emotions. Alam et al. (2011) employed TPB to establish that attitude predicted purchasing behaviour in relation to halal food, with other relevant theories including the Theory of Reasoned Action, TPB and the Technology Acceptance Model (TAM) (Aldhmour et al., 2016). Furthermore, Jusoh et al. (2012) identified a significant association between consumers' attitudes towards online shopping and customer service. Yulihhasri et al. (2011) applied TAM to identify significant predictors of consumers' use of e-shopping in Malaysia, i.e. (1) security; (2) ease of use; (3) usefulness; and (4) compatibility. In a sample study of 120 participants, Azizi et al. (2010) also confirmed that attitude has a positive impact on online shopping. Mpinganjira (2012) established that specific customer attitudes are determined in relation to an object's attributes, while other studies considered significant factors as being: (1) reputation; (2) usability; (3) after-sale services; (4) security; and (5) privacy. It can therefore be concluded that the same factors influence consumer's attitudes towards using mobile applications for online shopping (Jun & Jaafar, 2011). By understanding consumer attitudes, an e-commerce site can easily predict their customers' intentions, with Ahn, Ryu, and Han (2016) postulating that attitude has a positive impact on the intention of customers to employ new technology. Thus, the existing literature confirms that a positive attitude towards the use of mobile devices for online shopping leads to a greater intention to use such devices. Further studies, including that of Jahng et al. (2002), defined attitude as a multidimensional construct, including consumers' acceptance of the Internet for shopping. In the context of mobile technology, it can be defined as the consumer's acceptance of their mobile devices as a method of shopping.

Hypothesis 1: Attitude towards using mobile applications for online shopping in KSA will have a significant

impact on customers' intentions.

2.2 The Impact of Subjective Norms

Ham et al. (2015) defined the subjective norm as social pressures prompting human beings to believe that a significant individual (or group) will approve and support certain behaviour. This is primarily drawn from the efforts made by individuals to conform to the views of others. Previous studies have established that, although subjective norms influence the intention to use technology, this is weaker in comparison to the influence of attitude. Additionally, the study by Krueger et al. (2000) established a lack of any correlation between subjective norms and the individual's intention to establish their own business. This results in a need for further studies examining the influence of subjective norms. Kumar (2012) designed a study to analyse the variable in more depth, focusing on the determinants of an intention to purchase in relation to environmental sustainability, concluding that a subjective norm is unrelated to purchase intention. However, in a related study, Chen (2007) found that the subjective norm played a role in influencing consumer's intention to buy food that was both organic and sustainable. This high level of inconsistency stems from the majority of the information concerning this variable having already been reflected in the desirability of specific behaviours. There are considerable limitations to the theory of planned action, arising from the weak relationship between the subjective norm and intention (Ham et al., 2015). The limitation of this relationship has been explored by Ajzen (1991), who identified that intention is heavily influenced by personal factors, i.e. PBC and attitude. On the other hand, Armitage and Conner (2001) acknowledged the existence of a weak correlation, but noted that this arose from the narrow conceptualisation of the variable of subjective norms. Howladar et al. (2012) found that online purchasing intentions (including subsequent continuity) relies on consumer attitudes, which tend to be influenced by their beliefs or by trust. They noted that subjective norms are formed by society and the media, along with friends or peers and some support facilities, while consumers' intentions towards online purchasing are also positively influenced by: (1) the control of risk; (2) family support; (3) the media; and (4) social support. Howladar et al. (2012) thus concluded that subjective norms influence customers' intentions towards online shopping. Atilgan-Inan et al. (2011) investigated the factors giving rise to the formation of the behavioural intentions of younger customers while shopping on the Internet, identifying subjective norms as the most important variable predicting their behavioural intention towards online shopping.

Hypothesis 2: Subjective norms towards using mobile applications for online shopping in KSA will have a significant impact on customers' intentions.

2.3 The Significance of Perceived Behavioural Control

Perceived Behavioural Control is defined as the potential influence of internal and external forces in defining an individual's behaviour. Alam and Sayuti (2012) considered PBC a predictor of an individual's intention to perform a specific function, while Numraktrakul et al. (2012) found PBC to be an indication of consumers' intention to purchase a specific house. However, other studies, including that of Yusliza and Ramayah (2011), have disputed this view, with their own research concluding that PBC has no bearing on intention. Giantari et al. (2013) examined the impact of experience on the intention to online purchasing mediated by PBC and trust. The study findings revealed that PBC has a significant impact on consumers' intentions to undertake online shopping.

Hypothesis 3: Perceived behavioural control towards using mobile applications for online shopping in KSA will have a significant impact on customers' intention.

2.4 The Role of Trust in Customer Intention to Use Mobile Applications

Trust is a vital factor in reducing a feeling of insecurity and improving the simplicity of online transactions, so developing an optimistic consumer intention towards online shopping. Trust can be a precursor component for the intention to undertake online transactions, associated with consumer attitudes and behaviour. Security concerns towards mobile applications, as well as those related to privacy, can weaken a consumer's level of trust (Khosrow-Pour, 2018). Online trust can therefore be developed by means of: (1) an interface that has ease of use; (2) the promotion of a belief that inbuilt safety mechanisms are an integral aspect of the web-based interface; and (3) the belief that a vendor gains nothing by cheating. Tuteja et al. (2016) examined consumers' trust in online integration and perceived competence, finding that consumers' trust in Internet shopping positively related to their intention to purchase online in relation to: (1) a legal framework; (2) integrity; (3) perceived privacy control; (4) perceived security control; (5) perceived risks; (6) quality orientation; (7) prior buying experience; (8) website design; and (9) brand orientation. Gana and Koce (2016) found that consumers' trust and perception of privacy reduces the perception of risk related to their intention to use a mobile device for online shopping, while a lack of trust hinders the use of mobile marketing applications. Gao and Yang (2014) studied the role of trust in the implementations of mobile services in China, by extending TAM with added trust-associated concepts. The

study findings revealed that customers' trust in mobile services were directly influenced by perceived structural assurance, as well as perceived reputation.

Hypothesis 4: Trust will have a significant impact on customer intention when using mobile applications for online shopping in KSA.

3. Research Methodology

This study employed quantitative methodology to test the study hypothesis and achieve the research aim, i.e. to investigate factors influencing consumers' intention to use mobile applications for online shopping in KSA. This arose in response to the variables of the study being measurable, and therefore achievable using quantitative strategy. Moreover, this study was conducted as a quantitative study, designed to test the study hypothesis and realise the main objective. The research used primary data, with the primary data employed for data analysis and to test the study hypothesis, as well as to determine the factors influencing consumers' intentions to use mobile applications for online shopping in KSA. A survey method was used to collect primary data from the predetermined study population, which was subsequently used to test the study hypotheses and answer the research question. The participants were all volunteers and the researcher respected their choice to take part. None were coerced into participating, and any decision to withdraw had no bearing on any other aspect of how they were treated, i.e. the study participants were given the right to withdraw from this study without fear of harm.

4. Data analysis

This study used simple a random sampling technique, with the study sample consisting of 150 participants, randomly selected from the Saudi community. The selected participants included individuals working in diverse industries and in different organisations, while the study respondents included online customers or those who chose to shop online in KSA. The participants were selected randomly from; (1) universities; (2) online shopping companies; (3) Saudi online shopping communities; and (4) businesspeople from both the public and private sectors. One hundred (100) usable responses were collected from this sample, i.e. a response rate of 66.67% (100/150). The survey method was used to collect the data to test the hypotheses, with the survey questionnaire administered to participants who had previously signed a consent form agreeing to participate in the study. The demographic features of the participants were included in the model testing, due to the aim of the study being to determine the factors influencing consumers' intention to use mobile applications for online shopping in KSA. In this study the respondents were divided equally between male and female. The largest percentage (39%) by age group were those aged between twenty-one and thirty-nine, while the lowest percentage was made up of those aged fifty and over. The survey participants were generally well educated with over 30% holding a diploma and 46% holding a four-year first degree, while 12% held PhDs and 2% Master's degrees.

4.1 Structural Equation Modelling (SEM) and Validation of the Measurement Scale

The researcher employed Structural Equation Modelling (SEM) to test the measurement model to determine the internal consistency reliability, as well as to construct the validity of the item scales (i.e. the questionnaire) utilised in operationalising the research variables.

Table 1. Summary of the measurement scale

Constructs	Measures
Attitude (A)	A1. I think the use of the mobile applications for online shopping in KSA would be good for me. A2. I think the use of the mobile applications for online shopping in KSA would be good for me. A3. I am pleased with my use of the mobile applications for online shopping in KSA. A4. Overall, using the mobile applications for online shopping in KSA would be a pleasant experience.
Perceived behavioural control (PBC)	PBC 1. I think that I am able to use the mobile applications for online shopping in KSA. PBC 2. I think that using mobile applications for online shopping in KSA would be entirely within my control. PBC 3. I think that I have sufficient knowledge to use mobile applications for online shopping in KSA. PBC 4. I feel comfortable using mobile applications for online shopping in KSA on my own.
Subjective Norms (SN)	SN 1. People who are important to me (i.e. family) would approve if I used the mobile applications for online shopping in KSA. SN 2. People who influence my behaviour (i.e. friends) would think that I should use the mobile

	applications for online shopping in KSA.
	SN. 3. People I know would expect me to use the mobile applications for online shopping in KSA.
	SN. 4. People whose opinions I value would approve of my using the mobile applications for online shopping in KSA
Perceived Trust (PT)	PT. 1. Mobile applications for online shopping wish to be known as sites that fulfil their commitments.
	PT. 2. Mobile applications for online shopping are trustworthy.
	PT. 3. I find the information on mobile applications for online shopping is realistic.
	PT. 4. Compared to other web sites, mobile applications for online shopping are reliable.
Intention to use mobile applications (PI)	PI. 1. I intend to use the mobile applications for online shopping in KSA in future.
	PI. 2. Given that I have access to the Internet, I predict that I will use the mobile applications for online shopping.
	PI. 3. In future, I intend to regularly use mobile applications for online shopping.
	PI. 4. I expect my use of the mobile applications for online shopping will increase in t future.

Table 2. Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.703	20

Table 3 demonstrates a high level of internal consistency in the gathered data for the purpose of the chosen sample size for this current study. Internal consistency reliability refers to the measure of the effectiveness of a test to address different constructs (i.e. questionnaire questions) and deliver reliable scores. Determining internal consistency includes measuring different versions of each individual response from each individual respondent regarding a similar question/item within the same questionnaire or test. In quantitative studies, research works are evaluated based on the level of validity and reliability associated with the measurement techniques/procedures and the internal validity established through the research design. In addition, the external validity and the degree to which the techniques of sampling allow generalisability of the study findings (Lincoln & Guba, 1986; Creswell, 2008; Rubin & Babbie, 2010). Therefore, internal consistency was significant in this research, as it defined the consistency of the outcomes and findings. Internal consistency also ensures that the different questions in the questionnaire (which are used to measure the different constructs) provide consistent scores based on the participants' responses. Cronbach's alpha test was conducted to confirm internal consistency within the items of the Likert scale questionnaire, indicating that each item was consistent. The Cronbach's alpha value obtained from questionnaire was .703 for the twenty items. This was a positive value and greater than 0.7, thus, indicating the presence of internal consistency levels of considerable reliability in the survey findings gathered from the 100 participants.

4.2 Examination of Research Hypotheses

The findings relative to the structural model and the hypothesis formed for each construct are discussed in the following sections. The study hypotheses were:

Hypothesis1: Attitudes towards using mobile applications for online shopping in KSA will have a significant impact on customers' intention.

Hypothesis2: Subjective norms towards using mobile applications for online shopping in KSA will have a significant impact on customers' intention.

Hypothesis3: Perceived behavioural control towards using mobile applications for online shopping in KSA will have a significant impact on customers' intention.

Hypothesis 4: Trust will have a significant impact on customer intention when using mobile applications for online shopping in KSA.

The author assessed the structural model by examining the path coefficients beta weight, which illustrates the strength of the association between independent and dependent variables and the (R^2) value illustrating the degree of variance explained by independent variables. Chwelos et al. (2001) stated that the R^2 and the path coefficients indicate how well the model is performing. R^2 shows the predictive power of the model, with the values being interpreted in the same way as R^2 in a regression analysis. The path coefficients should be significant and consistent with expectation. Figure 1 demonstrates the standardised estimates of each variable influencing customer's purchase intentions when using mobile applications for online shopping in KSA using

SEM.

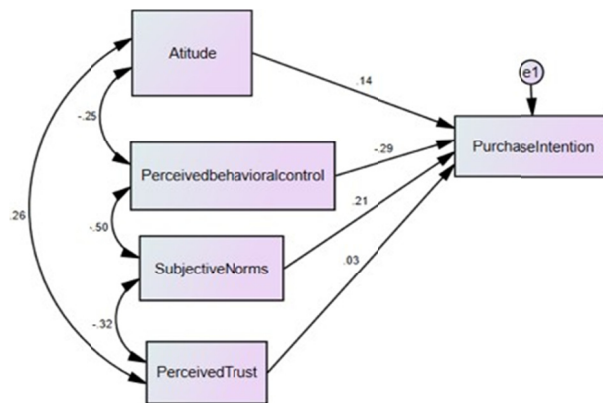


Figure 1. Structural Equation Modelling (SEM) (standardised estimates)

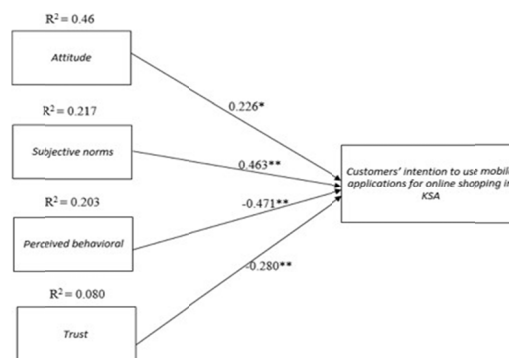


Figure 2. The results of structural model

5. Interpretation of the Findings

The results of the SEM model revealed a strong and positive correlation between attitude and customers' intention to use mobile applications for online shopping in KSA. This demonstrates that consumers' attitude towards using mobile applications for online shopping in KSA has a positive or significant impact on their intention. Thus, the results validated the first study hypothesis, and the study therefore concludes that a consumer's attitude towards using mobile applications for online shopping in KSA will have a significant impact on their intention. The results of the SEM model showed a positive correlation or relationship between subjective norms and a customer's intention to use mobile applications for online shopping in KSA. This reveals that subjective norms can positively influence consumers' intentions to use mobile applications for online shopping in KSA. Therefore, the study accepted the second hypothesis and concluded the presence of subjective norms towards the use of mobile applications for online shopping in KSA. The results of the SEM model revealed a negative significant correlation or association between a PBC and customer's intention to use mobile applications for online shopping in KSA. This means that PBC concerning the use of mobile applications for online shopping in KSA has a negative or significant impact or influence on customers' intentions. Hence, the study accepted the third hypothesis, concluding that PBC towards using mobile applications for online shopping in KSA will have a significant impact on customers' intention. Finally, the results of the SEM model indicated a negative correlation between trust and customer's intention to use mobile applications for online shopping in KSA. This implies that consumers' perceived trust significantly impacts on customer intention when using mobile applications for online shopping in KSA. Thus, the study accepted the fourth hypothesis, concluding that trust has a significant impact on customer intention when using mobile applications for online shopping in KSA.

6. Discussion

An increasing trend is currently taking place towards the use of mobile applications for online shopping in KSA, as the population embraces the growing use of technology for seamless transactions and shopping. However, the use of mobile applications for online shopping in KSA differs significantly between online consumers, including

factors determining consumers' intention to use mobile applications for online shopping as identified in this study, i.e. (1) perceived behaviour control; (2) subjective norms; and (3) perceived trust. The study also found that an increase in trust among Saudi online consumers' intentions towards the use of mobile applications for online shopping also results in an increase in their intentions to undertake online shopping. Higher trends of consumer attitudes and perceived trust leads to increased rates of online shopping, since consumers have are reassured that there is no risk of losing their personal details to online hackers. On the other hand, the study reveals that perceived behaviour control and subjective norms have a weaker influence on consumers' intentions towards the use of mobile applications or online shopping. Higher subjective norms or increased social pressure and perceived behaviour control have significant effects on customer's intentions towards online shopping in KSA.

6.1 Insightful Interpretation of Results

The study found that attitude had a positive and significant correlation with customer intention, particularly when using mobile applications for online shopping in KSA. This implies that customers' intention when using mobile applications increases in relation to attitude. This is consistent with Chiu et al. (2003), who stated that attitude influences the Internet purchasing behaviour of consumers. Attitude can have either a positive or negative influence on the online purchasing behaviour of consumers and can have a significant impact on customers' intention to use mobile applications. Therefore, attitude predicts customers' intention to use mobile applications. This is consistent with the Theory of Reasoned Action (Fishbein & Ajzen, 1975) and the Theory of Planned Behaviour (Ajzen, 1991), both of which emphasise attitude as an important predictor of human behaviour. The study results reveal the existence of a positive or strong significant correlation between subjective norms significant correlation and customer intention when using mobile applications for online shopping in KSA. This is consistent with the findings of Chen (2007), who noted that subjective norms play a significant role in influencing consumer's buying intention. Subjective norms have significant or different impacts on customer's intention when using mobile applications in KSA. However, the study findings contradicts the findings of Kumar (2012), who concluded that subjective norms are not correlated with an individual's intention to purchase. However, this study has established that subjective norms play a significant role in customer intention when using mobile applications for online shopping in KSA. On the other hand, the study found that PBC had a negative correlation with customer intention when using mobile applications for online shopping in KSA. This is consistent with a number of studies (i.e. Numraktrakul et al., 2012; Alam & Sayuti, 2012), which viewed PBC as predicting the purchasing intentions of customers. Moreover, the study findings demonstrated that perceived trust had a significant impact on customer intention when using mobile applications for online shopping in KSA. This finding is consistent with those of Gefen et al. (2003) and Njite and Parsa (2005), which identified that trust influences the attitude of consumers towards certain online products. Perceived trust can influence customer intentions in a genitive or positive way, and thus plays an important role in consumer's online purchasing behaviour. This study indicated that consumer's attitudes and trust can have a significant influence on consumers' intention to use mobile applications for online shopping in in KSA. For example, increased perceived trust and consumer attitude led to increases in consumer purchase intentions towards online shopping. In addition, higher trust and consumer attitude can positively increase consumers' intention to use mobile applications for online shopping. Thus, when consumers trust an e-commerce site (as a result of improved security and website interface, which allows online shoppers to shop easily and securely), they tend to have a highly positive view of the e-commerce site and will influence their friends to shop on the same website. This also influences their attitudes, perceived behaviour, choices and online purchasing decisions.

6.2 Study Contributions

The study makes an important contribution to the Saudi e-commerce sector, online shopping companies and technological sector, as well as the online consumers, due to its analysis of customer intentions towards online shopping in KSA. The study has identified the major factors that key players in the Saudi e-commerce sector can use to enhance or influence consumers' intention to use mobile applications for online shopping in KSA. The study found the main factors influencing consumers' intention to use mobile applications for online shopping in in KSA were: (1) attitude; (2) perceived behaviour control; (3) subjective norms; and (4) perceived trust. The study also contributes to the current literature by offering significant evidence concerning the ways key players in the Saudi e-commerce sector can leverage consumers' intention to use mobile applications for online shopping in KSA. Based on the literature review, none of the existing and documented studies in this study has previously examined factors influencing consumers' intention to use mobile applications for online shopping in KSA, along with a lack of existing literature focussing on the factors influencing consumers' intention to use mobile applications for online shopping in KSA. Therefore, this study is of considerable significance, since it adds a

body of knowledge to existing literature.

7. Conclusion

This research identified the factors influencing consumers' intention to use mobile applications for online shopping in KSA. The findings provide beneficial information for e-commerce websites, online shoppers and Saudi e-commerce practitioners in general. The study employed the SEM model to contribute to validate the role of customer intention when using mobile applications for online shopping in KSA in relation to attitude, perceived behaviour control, subjective norms and perceived trust. Finally, the study found that the main factors influencing consumers' intention to use mobile applications for online shopping in KSA consist of: (1) attitude; (2) perceived behaviour control; (3) subjective norms; and (4) perceived trust.

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