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# Antecedents of Trust and its Impact on Loyalty: An Empirical Study on Mobile Commerce's Customer in Saudi Arabia under Mediating Effect of TAM Model

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## Abstract

**Background:** The online commercial services have increased significantly over the last decade especially after the COVID-19 pandemic hit the world. Electronic commerce and mobile commerce have expanded significantly. Through these developments, it has become easier for people to access different kinds of information and develop interactions across the globe to conduct their business activities. The mobile commerce applications have made it efficient and economical to conduct shopping in Saudi Arabia as well. However, the managers of these companies are concerned about the loyalty of customers who use mobile commerce applications for making their purchases.

**Purpose:** The purpose of this study is to investigate the impact of factors of customer satisfaction on customer loyalty for mobile commerce customers in Saudi Arabia. Mobile commerce applications have expanded significantly in Saudi Arabia especially after the COVID-19 pandemic. Many companies have established online presence to conduct businesses through mobile commerce platforms. This study has

helped in identification of the antecedents of customer loyalty for mobile commerce customers in Saudi Arabia.

**Research Design and Methodology:** The quantitative research methodology and cross-sectional research design have been used in this study. The questionnaire was developed and responses from the participants were achieved through sending the questionnaires via email. The sample size for this study was 100 participants.

**Findings:** The dependent variable of the study was customer loyalty while independent variables include perceived ease of use, perceived use, customer satisfaction, trust, and continuance intention. According to the empirical analysis, perceived ease of use has no significant influence on customer loyalty. On the other hand, the analysis revealed that perceived use, customer satisfaction, trust, and continuance intention have a significant positive impact on customer loyalty. Furthermore, the findings suggest that the perceived use has the strongest impact on the customer loyalty while trust has very weak influence on customer loyalty for mobile commerce customers in Saudi Arabia.

**Practical Implications:** The findings of this study have important policy and strategic implications for the mobile commerce companies in Saudi Arabia. For the managers who are concerned about the customer loyalty for mobile commerce customers, the findings of this study have provided the antecedents that have impact on customer loyalty. These managers can develop their policies and strategies through which they can develop a sense of loyalty in their customers. Customer loyalty is considered as a very important asset because the company does not have to incur huge costs in acquiring new customers when it has a strong base of loyal customers.

**Originality/Value:** The theoretical model of this study is very unique and this kind of study has never been performed in Saudi Arabia. This is the kind of study which is needed after immediate adoption of mobile commerce channel by a lot of companies during COVID-19 pandemic. This study has successfully highlighted the

factors that can lead to customer loyalty of mobile commerce customers in Saudi Arabia.

**Limitations and Future Research Directions:** First, this study relies on collection of data from only one particular source which might not be reliable for developing comprehensive results and explanations. The time and resources for conducting this study were very limited due to which sample size comprised of just 100 participants. To achieve more representative sample and more generalizable findings, the sample size should have been larger. The future researchers should keep these limitations and recommendations in mind.

**Keywords:** Antecedents of Trust, Loyalty, Mobile Commerce's Customer, Saudi Arabia, TAM Model.

## Chapter (1): Introduction

### 1.1. General Introduction

A dramatic increase in commercial online services has been observed since late 1990s, especially in the electronic commerce field. E-commerce field has developed rapidly during this period due to which it has become easier for people to access different kinds of information online and establish interaction with the businesses around the globe (Valencia et al., 2019). Different kinds of E-commerce platforms have been established providing the customers with facilities for a variety of online transaction services. These platforms have become very popular due to their efficiency and economic value. Online shopping is one of the several aspects of E-commerce that has gained a lot of popularity in recent years. Another aspect of E-commerce that has gained a lot of popularity is online auctioning (Salloum et al., 2019). Online auctioning is an important application of Customer-to-Customer (C2C) business model. Due to the successful online platforms established by the

companies in recent years, many big businesses of the world have established such platforms including Amazon, Walmart, and eBay (Granic & Marangunic, 2019).

E-Commerce platforms have also gained popularity in the last two years because of Covid-19 pandemic. To limit the spread of the Covid-19 virus, the governments of approximately all countries of the world imposed strict lockdowns (Hasanat et al., 2020). In some parts of the world, entire markets were shut down to prevent the physical contact between the people. In such a situation, a lot of businesses developed their E-commerce platforms providing the customers with an opportunity to access the goods and services online. The companies are also very keen in enhancing the ease of use for the customers to acquire a larger market share (Triyogo et al., 2021). For this purpose, the companies are providing the customers with facility of downloading their commercial application that make it easier for the customers to use the platform through their mobile phones (Purba et al., 2021). It means that the customers do not need desktop computers or laptops to access the company's E-commerce platforms and they can use the company's website (Singh, et al., 2021).

The purpose of this research is to study trust as an important antecedent of loyalty while considering the mediating role of technology acceptance model (TAM). This study is proposed because a lot of customers in Saudi Arabia are still reluctant about using the online platforms because of low technology acceptance. This study will help the researcher in identifying the factors behind it. Based on these findings, the researcher will be able to develop recommendations for E-commerce businesses through which they can develop a loyal customer base just like the traditional businesses (Bhat, Darzi, & Parrey, 2018).

The statistics have indicated that the E-commerce platforms have become very popular in the past two decades and especially during last two years because of the Covid-19 pandemic (Singh et al, 2021). The statistics also indicated that the majority

of the customers use the mobile applications to access the online platforms in different parts of the world. However, in Saudi Arabia, the growth of E-commerce platforms and adoption of mobile applications is not as high as in other parts of the world despite the fact that per capita income is high in Saudi Arabia as compared to many other countries of the world. Previous studies have indicated a lack of trust in technology is the major cause resulting in lack of trust leading to lower level of customer loyalty in this segment of business. This study will highlight the key factors that have resulted in low customer loyalty in the E-commerce businesses that has resulted in stunted growth in this segment (Mbango, 2019).

## 1.2. Research Questions

Following are the research questions of this study:

- What are the major theories and models of technology adoption and acceptance?
- What are the key antecedents of customer loyalty in E-commerce trading according to the TAM model?
- What is the role of customer satisfaction in the relationship between customer loyalty and its antecedents according to the TAM model?

## 1.3. Research Objectives

The following are the key objectives of this research study:

1. To review the literature to identify the key antecedents of customer loyalty in context of E-commerce businesses.
2. To highlight the most important antecedents of customer loyalty in E-commerce trading while considering the mediating role of customer satisfaction.
3. To develop recommendations for the E-commerce businesses through which they can develop customer trust and customer loyalty in Saudi Arabia.

## 1.4. Significance of the Study

This research study will address a very important research problem. The E-commerce business platforms have become very popular across the world. The statistics indicate that the number of mobile phone users to access the E-commerce platforms have also increased around the world. However, the previous studies have indicated that the increase in number of E-commerce users in Saudi Arabia has not increased as much as in other parts of the world despite the fact that per capita income in Saudi Arabia is higher than most of the other countries of the world. Through identifying different antecedents of customer loyalty, the researcher will attempt to discover the role of these antecedents in determining customer loyalty while using technology adoption model (TAM) as the mediating variable.

### 1.4.1. Managerial Relevance:

The E-commerce business has gone through significant transformation during last two decades. It has become an alternative marketplace during this period and has become an important source of revenue for significantly large number of companies in the world. Some companies have only E-commerce platforms and these platforms are the only source of revenue for these companies. Because of the significance that this business model has achieved during last two decades, the organizational managers have started focusing the different aspects associated with this business model. Customer loyalty is one of the factors that concerns the organizational managers the most. The empirical studies have revealed that customer loyalty is very important because cost of attracting and engaging new customers is very high as compared to keeping the previously engaged customers loyal with the company. The managers in the E-commerce companies have started to realized the significance of customer loyalty in their business as well. The review of literature has revealed a number of theories that explain the adoption and acceptance of technology. The TAM model is one of the most popular and significant model in this regard that has

the power to explain why customers of the E-commerce platforms choose to remain loyal with certain platforms. Because of the power of this study to identify the antecedents of the customer loyalty for E-commerce business, this study has a lot of managerial relevance.

#### **1.4.2. Scientific Relevance:**

The scientific relevance of the study is determined by the contribution that they study makes in the scientific literature. This particular study falls in the domain of the social science research which is an important branch of science that deals with how human beings feel, intend, and behave. The empirical findings of this study have a lot of scientific relevance because this study is designed according to the social science research principles and procedures. The empirical findings of this study will contribute very significantly in the social science literature. The TAM model explains why human beings adopt and accept the technological applications. The factors involved in this theory have proved to be important antecedents of the customer loyalty for the E-commerce businesses. Because of these factors, it is justified to say that this study has a lot of scientific relevance as well.

### **Chapter (2): Review of Literature**

#### **2.1. Theories and Models of Technology Adoption and Acceptance**

Development of any particular technological advancement depends on the acceptance and confidence of the users in technology. Involvement of the user is an important component of systems development and it also plays a very important role in acceptance of technology (Adnan et al., 2019). In general, acceptance is defined as "...an antagonism to the term refusal and means the positive decision to use an innovation" (Tsai et al., 2019). The involvement of the users in development process allows the users to highlight the specific problems and issues, and the decision makers use this information during the phase of development to improve the

technology (Huang et al., 2019). The researchers as well as practitioners are concerned about the acceptance of technology to determine the factors that contribute to improve the acceptance. Through the factors, the researchers as well as the practitioners can design, predict, and evaluate the methods through which they can get a better response from the users (Sohn & Kwon, 2020). Technology acceptance models and theories have been applied in a variety of areas to predict the behaviors of the users and these fields include computer usage, consumer purchase behaviors, education, using birth control pills, choice of transport modes, breast cancer examination, women's occupational orientation, blood donation, family planning, dieting, and voting (Granic & Marangunic, 2019). A number of researchers have developed different models and theories of technology acceptance and adoption for development and implementation of different technologies (Adnan et al., 2019).

To understand the issue completely, it is very important to study different kinds of theoretical approaches to understand technology acceptance (Baishya & Samalia, 2019). It is also very important to treat these approaches independently for clarity in understanding. However, certain approaches to understand technology acceptance were developed only to address certain issues (Rahi et al., 2019). Therefore, it is necessary to review different general adoption models available in literature.

### **2.1.1. Theory of Reasoned Actions (TRA):**

Fishbein & Ajzen developed theory of reasoned actions (TRA) in 1975 for the studies that they conducted in the field of psychology and sociology (Vallerand et al., 1992). This theory has become popular to examine the IT usage behavior in the individuals. According to this theory, there are three main cognitive components that can explain and predict the human behavior (Xiao, 2019). These components include intentions, social norms, and attitudes. Intentions indicate the decision by the individual to or not to behave in a certain way. Social norms indicate the social influences leading to certain behaviors (Procter et al., 2019). Attitudes indicate the favorable or

unfavorable feelings of an individual towards certain behavior. The human behavior backed by these cognitive components is rational, systematic, and volitional (Copeland & Zhao, 2020). Three boundary factors are used to test and evaluation the theory of reasoned actions include measurement of intentions, stability of intentions over time, and volitional control (Liu & Tsaur, 2020). Furthermore, to streamline the relationship between corresponding intention and attitude, the methods include time horizon, context, action, target, and generality (Breslin et al., 2019). On the other hand, the TRA has some shortcomings associated with it including the lack of addressing the role of moral factors, misunderstanding through a survey, the cognitive deliberation, and the habits. In addition, the TRA also does not address the factor of usage voluntariness (Lin et al., 2020).

### **2.1.2. Theory of Planned Behavior (TPB):**

Theory of planned behavior is an extended version of TRA with an addition of perceived behavioral control (PBC) (Yuriev et al., 2020). The perceived behavioral control is achieved through availability of skills, opportunities, and resources, and the perceived significance of these skills, opportunities, and resources to influence the outcomes (Ulker-Demirel & Ciftci, 2020). The TRA as well as TPB assume that the behavioral intentions of an individual determine the behavior; however, the perceived behavioral control is the component in the TPB to explain the actions by an individual that are not in the volitional control (Ajzen, 2020). The perceived behavioral control is the factor that adds the realistic limitation to the TRA and also determines the self-efficacy behavior by the individual (Bosnjak et al., 2020). Therefore, three key components of the TPB model include behavioral attitude, subjective norms, and perceived behavioral control as the factors influence the behavioral intentions (La Barbera & Ajzen, 2020). The TPB model also has some limitations associated with it. First, if an individual cannot access the computer system, there is no relevance for his/her attitude towards information technology

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(Sussman & Gifford, 2018). Second, the revised version of the TPB is more suitable for describing the voluntariness of an individual to choose the utilization of the IT-based applications at his/her workplace (Soorani & Ahmadvand, 2019).

### **2.1.3. Theory of Interpersonal Behaviors (TIB):**

Theory of interpersonal behaviors (TIB) recognizes the complexity of human behaviors under the influence of emotional and social factors (Fearey et al., 2021). Therefore, this model comprises of all the components of the TRA and TPB model, and some additional factors such as facilitating conditions, habits, and the affect to improve the power of prediction for the model (Handley & Berdanier, 2019). The component of the social factors in the TIB model is very similar to the construct of subject norms in the TRA. The social factors include the self-concept, norms, and roles (Joyal-Desmarais et al., 2019). According to this theory, an individual is never fully social, autonomous, deliberative, or automatic. The key difference between the TIB model and the TRA model is the fact that the TRA model uses the fewest variables to account for the most variance in the behavior while the TIB model address the most variance in total considering the social significance of even small amount of variance (Madrid et al., 2019). In the TIB model, the key factors behind the intentions of an individual include habits, social factors, and emotions. The TIB explains human behavior at three different levels (Sung et al., 2019). At the first level, the previous experiences and the personal characteristics of an individual determine the social factors, attitudes, and personal beliefs as associated with the behavior (Gagnon et al., 2003). At the second level, the intention to behave in a particular way is influenced by personal normative beliefs, social and cognitive determinants, and affect. At the third level, past experiences, situational conditions, behavioral intentions predict the possibility of behaving in a certain way (Kupfer et al., 2019). The TIB model also has some disadvantages associated with it including the lack of parsimony and complexity as compared to the TPB and the TRA (Dang

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Vu & Nielsen, 2022). Furthermore, the TIB fails to offer the functional definitions of the variables that have been included in the model (Rocchi et al., 2017).

#### **2.1.4. Technology Acceptance Model (TAM):**

The TAM model is another one of the extended versions of the TRA. The TRA model has uncertain psychometric and theoretical status (Granic & Marangunic, 2019). The TAM model has eliminated the personal interests and subjective norms of the individual from the model. According to the TAM, the users are motivated by three components including: (1) attitude towards use; (2) perceived ease of use; (3) perceived usefulness (Salloum et al., 2019). Therefore, behavioral intentions have been included as component in the TAM model along with two other factors that have considerable influence on intentions including perceive ease of use and perceived usefulness (Kamal et al., 2020). These factors determine the favorable and unfavorable intentions of the individual towards a system (Rafique et al., 2019). The TAM model also allows the space for some external factors such as the nature of implementation process, the involvement of user in the designing process, system characteristics, and user training (Sagnier et al., 2020). TAM has become one of the most famous and widely used model to understand the technology acceptance in the users. A number of research scholars have performed empirical studies based on this model (Estriegana et al., 2019). According to the TAM model, the adoption of technology has no social influence due to which they model cannot be used to study the technology adoption beyond workplaces (Alsharida et al., 2021). Besides, the TAM model demands the addition of some external variables in the basic model to improve the predictability of the system use. The TAM model also does not address the intrinsic motivation due to which this model cannot be applied in the customer context (Gunar & Acarturk, 2018).

### 2.1.5. Extension of TAM (ETAM):

ETAM is an extension of the basic TAM model with some additional factors that have the ability to improve the adaptability, specificity, and explanatory power of TAM (Revythi & Tselios, 2019). Two separate studies have proposed this model. The first study has emphasized the behavioral intentions and perceived usefulness as antecedents, and named the model as TAM2 (Yang & Wang, 2019). Two groups of constructs were added in the TAM2 model including cognitive (output quality, job relevance, and result demonstrability) and social influence (voluntariness, subjective norms, and image) (Huang & Teo, 2019). These constructs were added in the basic TAM model to improve the predictability power of the perceived usefulness. The TAM2 outperformed for both, mandatory and voluntary environments (Estriegana et al., 2019). Subjective norm is the only exception in this model that has the impact on the mandatory settings but has no impact in the voluntary settings (Hoang et al., 2021). In the second study, the researchers focused the constructs that became the antecedents of perceived ease of use. These antecedents were divided into two main groups including anchors and adjustments (Diop et al., 2019). The anchor groups consists of the general beliefs that the users have to use the computer systems including objective usability and enjoyment (Kamal et al., 2019). The adjustments include the general beliefs that a user develops from the direct experience from a certain computer system usage including computer playfulness, computer anxiety, computer self-efficacy, and external control (Wang et al., 2018).

### 2.1.6. Igbaria's Model:

The Igbaria's Model (IM) emphasizes the influence of intrinsic and extrinsic motivators on acceptance or rejection of the new technologies (Taherdoost, 2019). According to this model, intrinsic motivator is perceived fun, extrinsic motivator is perceived usefulness. These two kinds of motivators act as the antecedents of attitude (computer satisfaction) and behavior (computer usage) (Gunasinghe et al., 2019). In

addition to these factors, some direct and indirect antecedents of user acceptance include perceive fun, computer satisfaction, computer anxiety, and perceived usefulness (Yujong et al., 2021). According to the IM, the key antecedents of technology adoption include perceived usefulness and perceived fun. This theory has also proposed that the perceived usefulness also has the influence on the perceived fun (Igbaria, 1993). On the other hand, computer anxiety is proposed to have the negative impact on the perceive usefulness as well as perceived fun. The empirical study has proved that the computer satisfaction has a direct positive impact on the computer usage (Zhong et al., 2021).

#### **2.1.7. Social Cognitive Theory (SCT):**

The social cognitive theory (SCT) was inspired from the social psychology field and it has three key components including personal, behavior, and environment (Schunk & DiBenedetto, 2020). These factors interact with each other bi-directionally to predict individual as well as group behaviors. The SCT model has the ability to recognize the factors that can modify and change behaviors (Beauchamp et al., 2019). The key focus of the behavior factor in the SCT model is on adoption, performance, and usage issues. The personal factor in this model emphasizes the demographic, cognitive, and personality aspects that determine the personality of an individual (Middleton et al., 2019). The environmental factor in the SCT model include the factors external to the individual including social and physical environmental factors (Cai & Shi, 2020). The SCT model is based on triadic structure in which all the elements of the model can act as the predictors as well as the predicted (Wang et al., 2019). The integrated form of the SCT model can be used to evaluate the usage of information technology by using some constructs including personal outcome expectations, affect outcome expectations, anxiety, outcome performance expectations, and self-efficacy (Ma et al., 2020).

### 2.1.8. Diffusion of Innovations Theory (DOI):

The diffusion of innovation (DOI) theory introduces four factors to examine the diversity of innovations. These factors include social systems, innovation, communication channels, and time (Min et al., 2019). These factors have the influence on the dispersion of new idea. The DOI theory has been used at individual level and organizational level, and provides theoretical foundations to understand the adoption of technology at the global scale (Juliana Sipahutar et al., 2020). Three major components integrated by the DOI model include innovative decision-making process, characteristics of innovation, and characteristics of adopter (Goh & Sigala, 2020). The innovative decision-making process comprises of five steps including: (1) confirmation; (2) knowledge; (3) implementation; (4) decision; and (5) persuasion (Carreiro & Oliveira, 2019). The members of the similar social systems have to use different communication channels to implement the innovative decision-making process for over a period of time. The characteristics of innovation comprises of five key elements including observability, trailability, complexity, compatibility, and relative advantage (Garcia-Aviles, 2020). These factors have been believed to play a crucial role in technology adoption process. The key characteristics of the adopter leads to five major categories of the adopters including early adopters, innovators, laggards, late majority, and early majority (Dong, 2021). In short, the key focus of the DOI theory is on the characteristics of system, environmental aspects, and organizational characteristics (Vargo et al., 2020). On the other hand, the DOI model has less explanatory power as well as limited practical implication as compared to most of the other information technology acceptance and adoption models (Mayowski et al., 2019).

### 2.1.9. Perceived Characteristics of Innovating Theory (PCIT):

The PCIT is an extension of the DOI theory and it has three additional factors that it identifies to understand the technology adoption including behavior, voluntariness,

and image (Al-Rahmi et al., 2019). Perception of voluntariness influences the behavior and this perception has the impact on the actual behavior of the individual rather than the voluntariness (Yuen et al., 2020). The empirical studies have revealed the association between demonstrability and adoption rate while the rapid increase in the adoption rates lead to the increase in the demonstrability as well (Shi et al., 2020). This model also proposes two sub-characteristics of observability including result demonstrability and visibility (Yuen et al., 2020). The PCIT model argues that the decision to accept or reject an innovation by the user is influenced by the voluntariness factor.

#### **2.1.10. Motivational Model (MM):**

The two key determinants of the system use include the extrinsic motivation and intrinsic motivation (Shafiei & Maleksaeidi, 2020). The extrinsic motivation is defined as "...the perception that the users will want to perform an activity because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself" (Wigfield & Koenka, 2020). Improved job performance is an important example of extrinsic motivation. Intrinsic motivation, on the other hand, is defined as, "...the perception that the users will want to perform an activity for no apparent reinforcement other than the process of performing the activity per se" (Oakley et al., 2020). The empirical studies have revealed that perceived usefulness as one of the extrinsic motivational factors while perceived enjoyment as one of the intrinsic motivational factors (Ling et al., 2019). Generally, the two key antecedents of perceived usefulness and perceived enjoyment include perceived ease of use and the output quality. The studies have also revealed that task importance plays the role of moderating variable in relationship between output quality and ease of use on the perceived usefulness (Louick & Muenks, 2021).

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### 2.1.11. Uses and Gratification Theory (U&G):

The primary focus of this theory is on describing why people are involved in certain communication mediums as compared to the others. Particular gratifications are involved in using certain kinds of media (Kujur & Singh, 2020). The U&G model emphasizes the psychological and social aspects associated with using certain technologies to achieve satisfaction and motivation. Three main constructs included in this theory include gratification/satisfaction, behavioral usage, and motivation (Ray et al., 2019). Motivation can be defined in terms of overall disposition that has the impact on the actions of the people to meet their requirements. Behavioral usage can be defined in terms of patterns of exposure to usage including type of use, duration of use, and the amount of use (Liu et al., 2019). The U&G is the model that is based on a unique framework that can be applied to all kinds of media better than the DOI and the TPB models (Tanrikulu & Erdur-Baker, 2021). Furthermore, this kind of framework can be applied for communication media as well as the media used for work and play purposes (Hossain et al., 2019).

### 2.1.12. The Model of PC Utilization (MPCU):

The model of PC utilization is very important to predict the adoptability and acceptance of personal computers (PC) by the people. The primary focus of the MPCU model is on the actual behavior which means that the behavioral intentions have not been included in this model (Ray et al., 2019). Furthermore, this model also excluded the factor of habits because of their tautological relationship with the current PC usage (Goh & Sigala, 2020). The primary focus of this model is one evaluation of direct impact of job fit, complexity, social influences, perceived consequences, long-term consequences of use, and facilitating conditions on the behavior of an individual (Kamal et al., 2020). Empirical studies have indicated the key antecedents of PC usage as complexity, long-term consequences, social factors, and job fit. Facilitating conditions was not proved to be a predictor of behavior

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(Kupfer et al., 2019). This model has excluded the habit although habits play a very important role in determining individual behavior.

### **2.1.13. The Unified Theory of Acceptance and Use of Technology (UTAUT):**

The unified theory of acceptance and use of technology (UTAUT) has highlighted the four key determinants of intentions and behaviors of individuals and these determinants include facilitating conditions, social influence, effort expectancy, and performance expectancy (Dwivedi et al., 2020). The impact of these determinants of intentions and behaviors is moderated by voluntariness of use, experience, age, and gender. According to this theory, it is possible to examine the existence of these determinants in the environment (Tamilmani et al., 2021). The researcher scholars as well as the practitioners can examine these determinants to assess the intention of an individual to use a particular system (Dwivedi et al., 2020). The UTAUT was developed through integration between eight dominant models and theories including the Social Cognitive Theory (SCT), Innovative Diffusion Theory (IDT), the Model of PC Utilization, a combined TAM/TPB, the Theory of Planned Behavior (TPB), the Motivational Model, the Technology Acceptance Model (TAM), and the Theory of Reasoned Actions (TRA) (Yildik Durak, 2019).

A number of research scholars have successfully adopted and implemented these abovementioned theories to understand the technology adoption and acceptance in a variety of disciplines including management, social psychology, marketing, and information systems (Rahi et al., 2019). The UTAUT has implications especially for designing and conducting the empirical studies on adoption and diffusion of technology in various disciplines (Zhang et al., 2019).

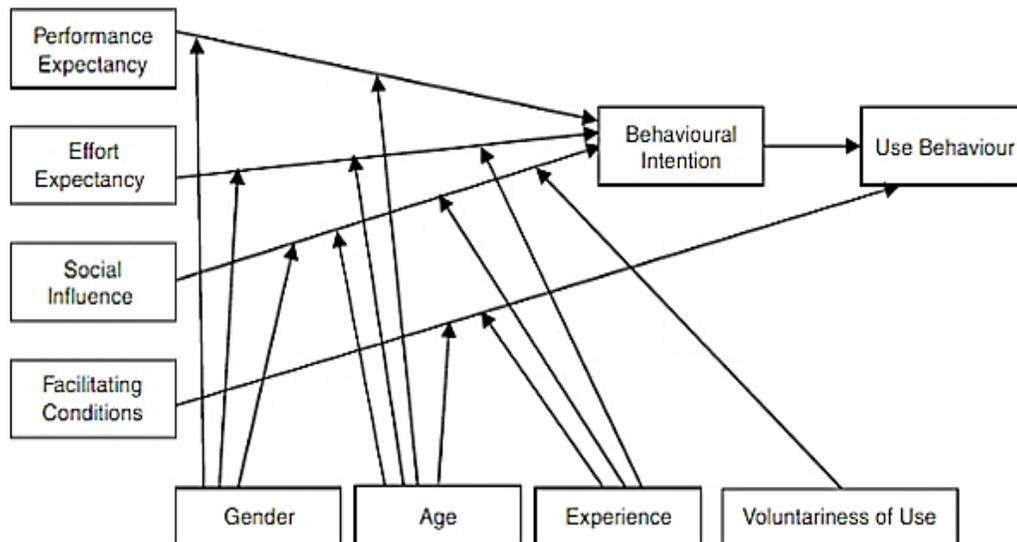


Figure (1): Unified Theory of Acceptance & Use of Technology (UTAUT) (Dwivedi et al., 2020)

#### 2.1.14. UTAUT2 Model:

UTAUT2 is considered as one of the most comprehensive models of technology acceptance and diffusion. UTAUT2 model recognizes the constructs identified in UTAUT model and some new constructs (Tamilmani et al., 2021). According to UTAUT2 model, the intention to use technology is influenced by hedonic motivation, price value, and habit (Ramirez-Correa et al., 2019). Hedonic motivation is defined as the degree to which a user perceives the use of technology to be enjoyable. Price value is defined as the cognitive trade-off between monetary costs and perceived benefits associated with using technology (Duarte & Pinho, 2019).

The UTAUT as well as the UTAUT2 model consider the performance expectancy to be an important construct in the explaining the behavioral intentions (Shaw & Sergueeva, 2019). The performance expectancy indicates the extent to which the usage of technology product or a new technology-based process can provide the consumer with certain benefits (Tseng et al., 2019). For example, Phablet is a smart

mobile device that has been introduced to enhance employee performance (Lee et al., 2019). The users of this smart phone device expect that this device will help them in improving the performance through satisfying the needs and wants of the customers more effectively (Widodo et al., 2019).

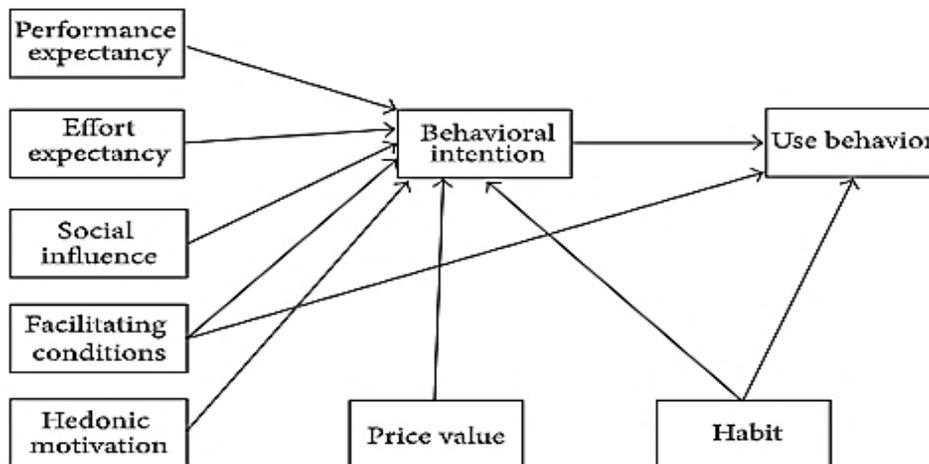


Figure (2): UTAUT2 Model (Lee et al., 2019)

## 2.2. Technology Acceptance in E-Commerce

The technology adoption model (TAM) was developed on the basis of theory of reasoned action (TRA). The TRA was developed by Fishbein & Ajzen (Valencia et al., 2019). The TAM model addresses the acceptance of technology-based solutions by the users. According to previous literature, most of the users adopt the technology-based solutions and applications based on two factors (Ardiansah et al., 2020). First factor is perceived usefulness and the second factor is perceived ease of use. Empirical studies in the past have revealed that the TAM model has been successful in describing the intentions and behaviors of the users of technology (Mohammad Ebrahimzadeh Sepasgozar et al., 2020). Therefore, it is very important to determine the customers' intention to use the technology and their behaviors while using that particular technology (Rizan et al., 2020).

Different studies have used TAM to understand and explain the online shopping acceptance by the customers. The empirical evidences have suggested that the acceptance of system strongly depends on their attitude towards the success of the online system (Granic & Marangunic, 2019). The attitude of the customers towards the online system is determined and developed by perceived use and perceived ease of use (Vukovic et al., 2019). Furthermore, empirical studies have also revealed that the TAM has the potential to describe the behavior and showed that TAM is a robust and parsimonious model for this purpose. Based on these empirical evidences, it is hypothesized that E-commerce customers would be satisfied in regard to perceived ease of use and perceived use (Rizomuliotis, 2021).

### 2.3. Customer Satisfaction

Numerous empirical studies have revealed that the key driving forces behind customer satisfaction include trust and consumer loyalty. Customer satisfaction is the indication of feelings of the customer after using the services of a particular website in case of E-commerce trading (Hamzah & Shamsudin, 2020). Customer satisfaction shows how much happy the customers are with the E-commerce services and their experience regarding the products/services obtained online (Basari & Shamsudin, 2020). Therefore, the customer satisfaction is the important determinant of customers' future visits to the website and making purchases (Kurdi et al., 2020).

### 2.4. Trust

Most of the online businesses have not yet established strong brand names and they have not been able to develop long-term and pleasant relationships with their customers (Isaeva et al., 2020). In the recent past, online transactions were governed by only a handful of rules and regulations due to which it was difficult to establish the customer trust in E-commerce (Bosic & Kuppelweiser, 2019). Due to the fewer rules and regulations, internet frauds and incidents of information disclosures have

increased over the years due to which the customers do not trust the E-commerce shopping (Bozic et al., 2020). Francis Fukuyama defined trust as, “trust is the expectation that arises within a community of regular, honest, and cooperative behavior, based on commonly shared norms, on the part of the members of the community” (Isaeva et al., 2020). The customer develops the trust when he/she feels that the other party will behave socially, ethically, and dependably. The research studies in the past have indicated that the factor of trust plays an important role of catalyst in the transactions between the buyers and the sellers (Isaeva et al., 2020).

Previous empirical studies have indicated that it is important to understand trust to develop the nature of interpersonal relationships. The factor of trust is very important for the online businesses because the customers have to perform financial transactions with new and unknown sellers most of the time. The empirical studies have also reported that trust is an important antecedent of the customer satisfaction as well. Therefore, it is hypothesized that trust has positive impact on customer satisfaction in the E-commerce businesses (Rather et al., 2019).

## **2.5. Relationship between Perceived Ease of Use and Loyalty**

The empirical findings reported by the studies in the past have highlighted that perceived ease of use has positive influence on customer loyalty. According to Tu et al. (2012), perceived ease of use is one of the two variables that drive use of technology by the users. According to Ajzen (2020), the perception about the easy usage of the product/service allows the users to develop loyalty with the particular technology. Alsharida et al. (2020) argued how TAM model explains the association between perceived ease of use and loyalty.

## **2.6. Relationship between Trust and Loyalty**

The empirical findings reported in the past have indicated the positive influence of customer trust on customer loyalty. According to Anugrah (2020), customer trust is

one of the most important preconditions to achieve customer loyalty. Ozturk et al. (2016) argued that trust in using E-commerce and mobile commerce applications is antecedent of customer loyalty. The researchers have conducted the study on the loyalty of the customer who use mobile application for booking hotels. This study has highlighted customer trust to be an antecedent of customer loyalty. Tu et al. (2012) conducted an investigation of impact of different factors on customer loyalty in e-Auction marketplace. E-Auction marketplace is a commercial online service that customers can use to sell and purchase different goods. Customer trust was one of the antecedents in this study. The findings suggested that the trust in electronic commercial services is an antecedent of customer loyalty.

## **2.7. Relationship between Perceived Use and Loyalty**

According to Tu et al. (2012), two factors that drive the use of technology include perceived ease of use and perceived use. The relationship between perceived use and customer loyalty was empirically proved by Tu et al. (2012). Jashari & Rrustemi (2017) also reported the positive influence of perceived use on customer loyalty. Ajzen (2020) argued that perceived use is an important antecedent of customer loyalty.

## **2.8. Relationship between Customer Satisfaction and Loyalty**

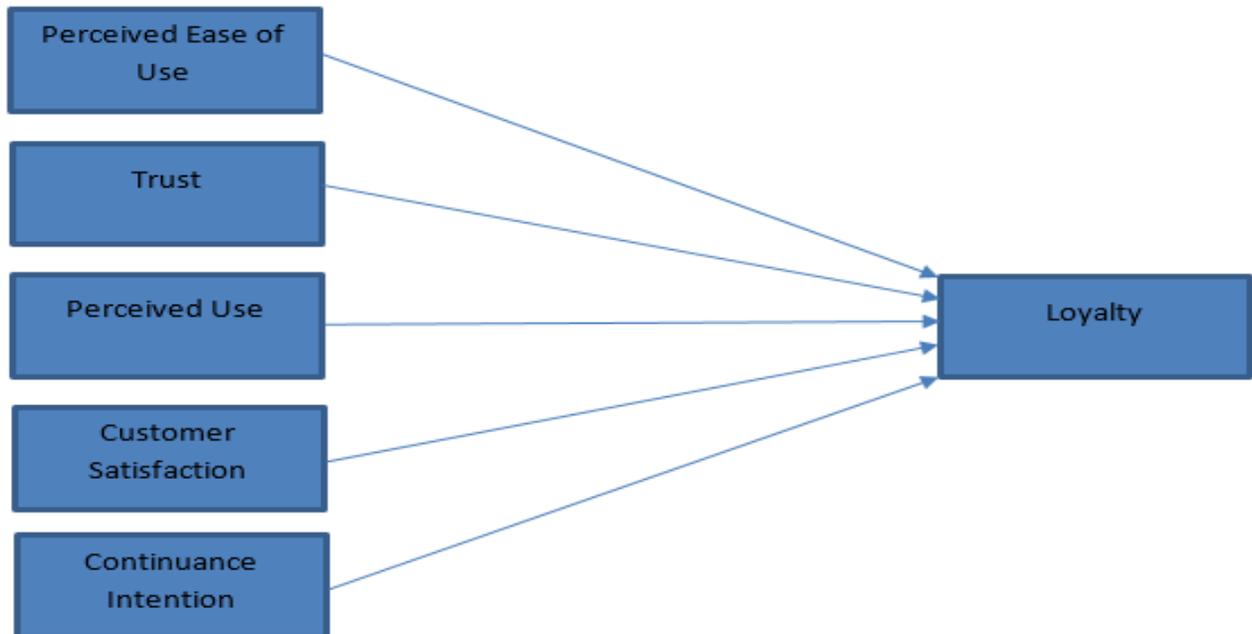
Customer satisfaction is considered as one of the most important antecedents of success for the E-commerce businesses. The customer satisfaction also determines how customer feel about making the purchases online (Otto et al., 2019). Furthermore, the studies have also indicated the significance of customer satisfaction for developing the repurchase intentions in the customers. Based on these factors, the customer satisfaction is treated as an attitudinal measure (Rita et al., 2019). Based on the previous empirical findings, it hypothesized that customer satisfaction has positive impact on customer loyalty in E-commerce businesses (Hult et al., 2019).

## 2.9. Relationship between Continuance Intention and Loyalty

Jashari & Rrustemi (2017) have reported that the continuance intention has a positive impact on loyalty. Ajzen (2020) argued that the continuance intention may be an outcome of factors such as perceived ease of use, past experience with using technology, and perceived benefit with using the technology. According to Hoang et al. (2021), continuance intention has positive influence on the customer loyalty.

## 2.10. Conclusion of Literature Review

Following is the model that shows relationships and directions of these relations according to the hypotheses of the study:



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## 2.11. Hypothesis

### Hypothesis -1

*H1:* Perceived ease of use has positive impact on customer loyalty in E-commerce businesses.

### Hypothesis -2

*H2:* Perceived use has positive impact on customer loyalty in E-commerce businesses.

### Hypothesis -3

*H3:* Online trust has positive impact on customer loyalty in E-commerce businesses.

### Hypothesis -4

*H4:* Continuance intention has positive impact on customer loyalty for E-commerce businesses.

### Hypothesis -5

*H5:* Customer satisfaction has positive impact on customer loyalty for E-commerce business.

## Chapter (3): The Methodology

### 3.1. Research Approach

#### 3.1.1. General Plan:

There are two main approaches to conducting the research and selection of one of these approaches depends on the nature and objectives of research. These two approaches are known as the deductive approach and the inductive approach.

The deductive approach is applicable when researchers in the past have conducted the research on the subject matter and one of more theories have been developed by

the research scholars to explain the phenomenon. The researcher can review the literature as well as theories to identify the research gap, develop research objectives and questions, and develop hypothesis to verify the claims. The researcher can use the deductive approach when the previous research scholars have conducted the exploratory studies on the phenomenon under study and the research on the subject matter has reached the descriptive stage.

The inductive approach, on the other hand, is based on the inductive reasoning. The researcher can adopt this research approach when the research on the subject matter is at its exploratory stage. The researcher has to adopt this research approach because the literature and theories on the phenomenon under study does not exist or is very limited. The researcher collects the data on the phenomenon using the primary methods such as observations. The data is analyzed to study themes and patterns in the collected data.

In this particular study, the researcher has attempted to study the antecedents of customer loyalty in case of mobile commerce customers in Saudi Arabia. A number of researchers have explored and conducted descriptive studies in the past on the subject matter of loyalty. Customer loyalty is well-studied phenomenon and various research scholars have reported their findings regarding different antecedents of loyalty in the literature. The literature on this subject matter comprises of theories, qualitative studies, and the quantitative studies. However, the researchers have not conducted such study for the mobile commerce customers in Saudi Arabia. This particular study has attempted to close this gap through this empirical study.

### **3.1.2. Research Approach:**

The research approach is defined as the plan and procedures for conducting the research. The research approach comprises several elements including defining assumptions, selecting the methods to collect data, conducting analysis, and

interpreting the findings. The research has to take several decisions in developing the research approach considering the nature and objectives of the study. The researcher has to consider the philosophical assumptions to conduct the study, selecting the particular research design, selecting the methods for collecting and analyzing data, and developing interpretations based on the findings. The decisions regarding the research approach depend a lot on the research problem and the objectives of the study. There are three popular research approaches used by majority of the research scholars in their studies and these approaches include the qualitative research approach, the quantitative research approach, and the mixed method approach.

Qualitative research approach is used when the researcher is focusing on exploring and understanding the social or human problem as ascribed by the individuals or groups. Using this particular research approach, the researcher has to consider the emerging questions and procedures during the process of conducting research. The researcher has to collect the data usually in the participants' settings. The researcher has to use the inductive approach to analyze the data that involves developing themes from particular to general. The interpretations are made by the researcher according to the meaning of data. The researchers who adopt the qualitative research approach have to consider the inductive approach and emphasize the individual meaning

Quantitative research approach is used for the purpose of testing the objective theories. The research tests theories by studying the relationships between the variables. The process of measuring the variables involves using the specific instruments and the instrument is useful in measuring the variable in quantitative terms. This numerical data can be analyzed using statistical tools and techniques. There is a particular format of quantitative research approach that comprises of several sections including introduction, literature review, research methodology,

analysis, interpretations, and conclusion. The researcher uses the deductive approach to test the theories. The researcher has to consider controlling for the alternative explanations, develop protection against bias, generalize the findings, and replicate the findings.

Mixed method is the form of inquiry in which the researcher uses the mix of quantitative as well as qualitative research approaches. The research designed developed for this kind of study is based on integrating theoretical frameworks and philosophical assumptions of the qualitative and quantitative research.

In this particular study, the researcher has used the quantitative research approach. The researcher has attempted to investigate the relationships between the variables of the study by collecting the data using an instrument. The instrument has allowed the researcher to collect the quantitative data that was analyzed using statistical techniques.

### 3.1.3. Philosophical Standpoint:

This particular research is based on the philosophical paradigm that is known as the 'post-positivism'. This research paradigm represents the traditional kind of research. This paradigm is most suitable for conducting quantitative research. The research based on this philosophical viewpoint is also known as scientific research. Post-positivist research paradigm challenges the traditional notion of the absolute truth of the knowledge. According to this viewpoint, the researcher cannot be positive about the claims regarding the knowledge when studying the actions and behaviors of human beings. Most of the 19<sup>th</sup> century research scholars have recommended the post-positivist paradigm for conducting research studies based on quantitative research approach.

The post-positivism paradigm is based on deterministic philosophy. Deterministic means that the probable causes determine the outcomes or effects. This kind of

research allows the researcher to use statistical tools and techniques to analyze the statistical data and assess the causes of specific problems or outcomes. In this particular study, the primary focus of the researcher is on assessing the causes of the customer loyalty in the mobile commerce activity. The probable causes selected for the customer loyalty include the antecedents of customer satisfaction in Saudi mobile commerce sector.

### 3.2. Research Design

Research design represents the overall functional plan or blueprint for the research. The research design represents the method of inquiry within the quantitative, qualitative, or mixed method approaches. It comprises of the specific directions for the researcher to conduct the study. Some researchers have used the term “strategies of inquiry” for research designs. These strategies comprise of decisions regarding the collection, analysis, and interpretation of data. Numerous research designs have emerged and evolved over the years and the researcher has the freedom to adopt any particular design depending on the nature of study and the objectives of the research. Cross-sectional survey design is one of the most popular designs that has been selected for conducting this study. There are several advantages of adopting this design for this particular study. The most important advantages include the feasibility of this design when the time and resources to conduct this study are limited.

#### 3.2.1. Cross-Sectional Survey:

Cross-sectional survey is one of the several kinds of research designs and it has become very popular for conducting educational research studies because of its several advantages. It is easier to adopt and implement this research design for the research scholar and the educational research scholar can perform their studies within a short period of time and using limited financial resources. Research scholars can conduct this study within a short period of time because this design

requires collecting the data for only once in the study. For this particular study, the research scholar has collected the data from the participants using a standardized research instrument. The data collected using the instrument has allowed the researcher to assess and study the causes of customer loyalty for the mobile commerce users in Saudi Arabia. The researcher has collected the data within a very short period of time which is one of the key advantages of using this research design.

Another advantage of using this research design is that the researcher can conduct the study with very limited financial resources. For this particular study, the researcher developed the instrument and used Google Forms service to float the survey among the participants. The participants filled the survey online and returned the complete surveys to the researcher. This process did not require incurring any expenses for collecting the data for this study. The third advantage of using this research design is that it is effective for measuring the current attitudes as well as the behaviors of the participants. Using cross-sectional survey, the researcher has attempted to study the attitudes as well as the behavior of the mobile commerce users in the Saudi Arabia.

### **3.2.2. Characteristics of Cross-Sectional Survey Design for Mobile Commerce Users in Kingdom:**

The cross-sectional surveys have some general characteristics and the researcher has to consider these characteristics and assumptions while designing the study.

#### ***Sampling Process:***

Cross-sectional survey involves collecting the data from the participants of the study using a survey instrument. The individuals who can become the participants of the study are viewed as the group that is known as the population. All the members included in the population group have same or very similar characteristics. However,

the number of individual members in the population may be very large due to which the researcher might not be able to reach and collect data from all individual members of the population. For this purpose, the researcher has to conduct sampling process. The sample consist of the group of individual members of the population upon which the researcher conducts the study. To conduct sampling process, the researcher should have the idea about the target population or the sampling frame. The sampling frame consists of the actual individual members of the population from which the sample is to taken.

For this particular study, the population comprises of the individuals who use mobile phones for different purposes. Most of the individuals use mobile phones for making phone calls, sending messages, surfing the internet, using different kinds of applications, and using different social media platforms. The sampling frame comprises of all the individuals who use smartphones and use different E-commerce platforms on their mobile phones to purchase different items. These are the individuals from which the researcher has drawn the sample.

There are two main forms of sampling used in the research known as the random sampling and the non-random sampling. In using random sampling technique, each member of the target population has equal chance of getting selected in the sample. Non-random sampling, on the other hand, is the sampling technique in which the members of the target population do not have equal chance of getting selected in the sample. The researcher has used the non-random sampling technique for the purpose of this research.

There are several techniques of non-random sampling techniques used by research scholars in different studies. A particularly popular technique of non-random sampling used by the researchers is known as the convenience sampling technique. This technique was used in this research to select the members from the sampling frame for this study. The convenience sampling involves collecting the data from the

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participants who are conveniently available or approached by the researchers. The use of such a sampling technique is justified considering the short time and financial resources available for conducting this research.

***Research Instrument:***

The research instrument is defined as the tool or technique through which the researcher collects the data. While conducting the cross-sectional survey, the researcher has the freedom to choose one or more of the available tools of collecting data. Two of the most important tools in this regard include the interviews and the questionnaires. The selection of any particular tools depend on the objectives of the research as well as the research approach. Questionnaire is the tool in which the researcher provides the participants with form with empty spaces or the choices for selecting in response to the questions. In studies based on the quantitative research approach, the researcher uses different dimensions of each variable to develop the questions regarding that variable. The participants have to choose from the available choices to respond to the questions. The interviewing, on the other hand, is a technique of collecting data in which the researcher uses the open-ended questions and the participants provide the researchers with detailed information. This technique is very effective in collecting detailed information about the phenomenon.

For this particular study, the researcher has used questionnaires as the tool for collecting data. The questionnaires were developed using Google Forms which is one of the several services offered by Google, Inc. The participants of the study received the questionnaire as Google Form on their emails. The participants could respond to the questions using their mobile phones as well as personal computers. The email addresses of these participants were obtained from the directories of different E-commerce platforms.

**Instrument:**

Table (1): Questionnaire

Items		Sources
<b>Perceived Ease of Use</b>		
PEU1	I think it is easy to conduct shopping using the mobile applications.	(Davis, 1989)
PEU2	Interacting with mobile commerce applications is easy.	
PEU3	I think mobile applications should be launched along with user manual.	
PEU4	I think it is not difficult to recover if I made an error during mobile commerce shopping.	
PEU5	I think it is easier for me to understand the mobile commerce applications.	
PEU6	Overall, I find the mobile commerce applications easy to use.	
<b>Perceived Use</b>		
PU1	It would be very difficult for me to shop without mobile commerce option.	(Davis, 1989)
PU2	I feel more in control when I use the mobile commerce application.	
PU3	The mobile commerce applications make it easier for me to conduct shopping.	
PU4	Mobile commerce facility save a lot of time for me.	
PU5	I can find good quality products/services using mobile commerce applications.	
PU6	Mobile commerce applications enable me to find products that are very difficult to find otherwise.	
PU7	I am able to purchase goods/services at good prices using mobile commerce applications.	
<b>Trust</b>		
TT1	I believe that the vendors are not lying on when presenting products/services online.	(Liu, Guo, & Lee, 2011)
TT2	I believe that the online vendors are not trying to deceive the customers.	
TT3	I believe that the online vendors are not exploiting the customers.	
TT4	I believe that my personal information is completely secure when I use mobile commerce applications.	
TT5	I believe that my financial credentials are secure when I am using the mobile commerce applications.	
<b>Customer Satisfaction</b>		
CS1	My experience with mobile commerce applications is very delightful.	(Flint, Blocker, & Boutin Jr., 2011)
CS2	I am happy to conduct shopping using mobile commerce applications.	
CS3	I am satisfied with the user interface offered by majority of mobile commerce applications.	
CS4	I am satisfied with the quality of products/services that I purchase using mobile commerce applications.	
CS5	I am generally pleased with saving time using mobile commerce applications.	
CS6	I am generally pleased with saving money by purchasing cheap products using mobile commerce applications.	
<b>Continuance Intention</b>		
CI1	I intend to continue using the mobile commerce applications rather than discontinue its use.	(Han et al., 2018)
CI2	I intend to use the mobile commerce applications for shopping rather than switching to other convenient means.	
CI3	I will keep using the mobile commerce applications for shopping frequently in future.	

<i>Loyalty</i>		
LTY1	I would like to keep purchasing using the mobile commerce applications in future.	(Flint, Blocker, & Boutin Jr., 2011; Chang & Chen, 2007)
LTY2	I would use the mobile commerce applications to buy products/services from multiple vendors.	
LTY3	I would recommend using mobile commerce applications to my family and friends for making purchases.	
LTY4	I would refuse the option of going to physical stores when I can find the products/services online.	

## Chapter (4): Analysis and Results

### 4.1. Descriptive Statistics

#### 4.1.1. Gender:

Table (2): Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	68	68.0	68.0	68.0
	Female	32	32.0	32.0	100.0
	Total	100	100.0	100.0	

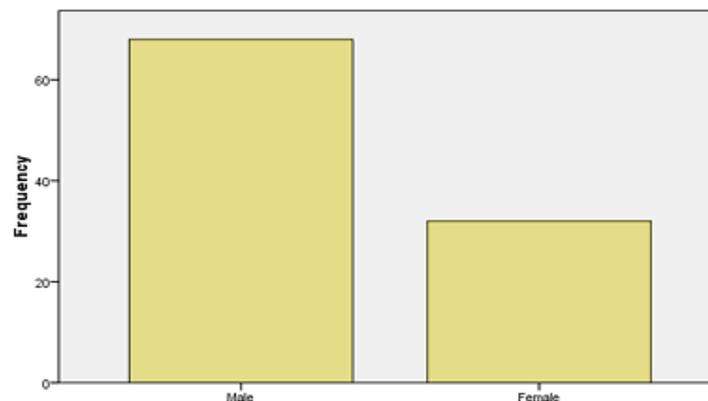


Figure (3): Gender

**Description:** The sample size for this study was 100 participants. Approximately two-third of the sample included the males. The sample comprised of 68 males and 32 females. The participation of different genders in this study is very much similar to participation of different genders in the online shopping in Saudi Arabia. According to the statistics, the majority of the online shoppers in Saudi Arabia are

males. The trends in online shopping have indicated that the online shopping has increased since the start of pandemic in late 2019.

#### 4.1.2. Age:

Table 3: Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-30	28	28.0	28.0	28.0
	31-40	54	54.0	54.0	82.0
	41-50	12	12.0	12.0	94.0
	51-60	3	3.0	3.0	97.0
	60 or above	3	3.0	3.0	100.0
	Total	100	100.0	100.0	

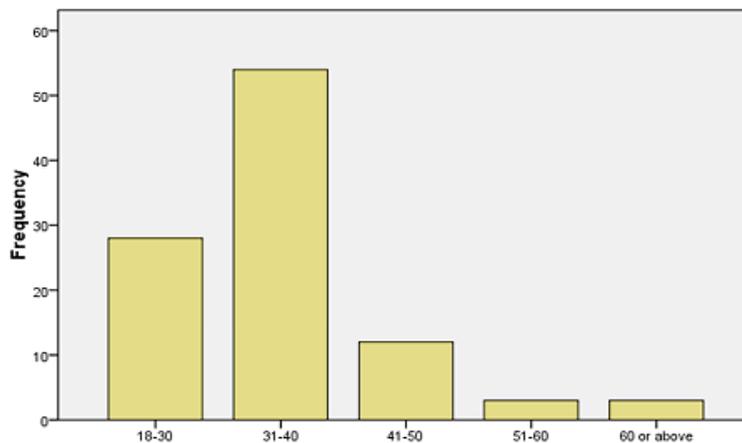


Figure (4): Age

**Description:** The sample was categorized into five major categories of different age groups. These categories included: (1) 18-30; (2) 31-40; (3) 41-50; (4) 51-60; and (5) 60 or above. The results of the descriptive analysis have indicated that the majority of online shoppers fell in the 31-40 age group. This group comprises of middle-aged people. A total of 54 participants were categorized in this category and they comprise 54% of the sample. The second major category was 18-30 and 18 participants were included in this category. These participants comprise 28% of the

entire sample. The number of people in category 41-50 was 12, in category 51-60 was 3, and in 60 or above category also 3. The result of this analysis is very similar to online shopping trends around the world because it has been observed by various researchers that most online shoppers comprise of young-aged adults and majority of them fall in group between 18 and 40 years. In this study, 82% of the participants fell in this age bracket as well.

#### 4.1.3. Professional Status:

Table (4): Professional Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed/Salaried	78	78.0	78.0	78.0
	Businessman	6	6.0	6.0	84.0
	Unemployed	16	16.0	16.0	100.0
	Total	100	100.0	100.0	

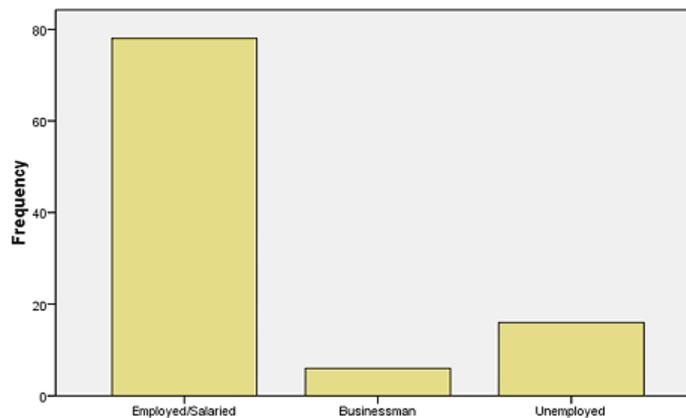


Figure (5): Professional Status

**Description:** The sample was categorized into three broad categories based on their professional status. These categories include employed/salaried, businessmen, and unemployed. The results indicated that 78 people or 78% of the sample were the employed/salaried individuals. The results indicated that 6 people or 6% were business while 16 individuals or 16% were unemployed people. The online

shopping trend is usually higher amongst the employed/salaried people. The result for employed/salaried people supports this trend. However, the percentage of businessmen is very low in this survey which is usually higher in surveys conducted by most of the other researchers.

## 4.2. Correlation Analysis

Table (5): Correlations

		Perceived Ease of Use	Perceived Use	Trust	Customer Satisfaction	Continuance Intention	Loyalty
Perceived Ease of Use	Pearson Correlation	1	.283**	.026	.272**	.190	.293**
	Sig. (2-tailed)		.004	.799	.006	.058	.003
	N	100	100	100	100	100	100
Perceived Use	Pearson Correlation	.283**	1	.228*	.655**	.450**	.681**
	Sig. (2-tailed)	.004		.022	.000	.000	.000
	N	100	100	100	100	100	100
Trust	Pearson Correlation	.026	.228*	1	.232*	.005	.295**
	Sig. (2-tailed)	.799	.022		.020	.963	.003
	N	100	100	100	100	100	100
Customer Satisfaction	Pearson Correlation	.272**	.655**	.232*	1	.563**	.685**
	Sig. (2-tailed)	.006	.000	.020		.000	.000
	N	100	100	100	100	100	100
Continuance Intention	Pearson Correlation	.190	.450**	.005	.563**	1	.578**
	Sig. (2-tailed)	.058	.000	.963	.000		.000
	N	100	100	100	100	100	100
Loyalty	Pearson Correlation	.293**	.681**	.295**	.685**	.578**	1
	Sig. (2-tailed)	.003	.000	.003	.000	.000	
	N	100	100	100	100	100	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

**Description:** The correlation table shows the value of correlation coefficient along with the significance level for that particular value. The correlation indicates the existence, strength, and significance of relationship between any two variables. This table shows the correlation between all variables of the study. The dependent variable

in this study is loyalty while independent variables include perceived ease of use, perceived use, trust, continuance intention, and loyalty. The most important relationships in this table include the relationships between the dependent variable and each independent variable of the study. The significance value set for this analysis is 0.05 which means the relationship is considered as significance if the significance value is less than 0.05.

The relationship between the loyalty and perceived ease of use has a correlation coefficient of 0.293. The positive value indicates a direct relationship between the dependent and independent variables of the study which means that loyalty increases with increased perceived ease of use. The value of correlation coefficient has significance value of 0.003 which means that the relationship between these two variables is significant. The correlation coefficient value of 0.293 indicates the existence of weak relationship between loyalty and perceived ease of use.

The relationship between the loyalty and perceived use has a correlation coefficient of 0.681. The positive value indicates a direct relationship between the dependent and independent variables of the study which means that loyalty increases with increased in value of perceived use. The value of correlation coefficient has significance value of 0.000 which means that the relationship between these two variables is significant. The correlation coefficient value of 0.681 indicates the existence of strong relationship between loyalty and perceived use.

The relationship between the loyalty and trust has a correlation coefficient of 0.295. The positive value indicates a direct relationship between the dependent and independent variables of the study which means that loyalty increases with increased trust. The value of correlation coefficient has significance value of 0.003 which means that the relationship between these two variables is significant. The correlation coefficient value of 0.293 indicates the existence of weak relationship between loyalty and trust.

The relationship between the loyalty and customer satisfaction has a correlation coefficient of 0.685. The positive value indicates a direct relationship between the dependent and independent variables of the study which means that loyalty increases with increased customer satisfaction. The value of correlation coefficient has significance value of 0.000 which means that the relationship between these two variables is significant. The correlation coefficient value of 0.685 indicates the existence of strong relationship between loyalty and customer satisfaction.

The relationship between the loyalty and continuance intention has a correlation coefficient of 0.578. The positive value indicates a direct relationship between the dependent and independent variables of the study which means that loyalty increases with increased continuance intention. The value of correlation coefficient has significance value of 0.000 which means that the relationship between these two variables is significant. The correlation coefficient value of 0.578 indicates the existence of moderately strong relationship between loyalty and continuance intention.

### 4.3. Regression Analysis

Table (6): Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.792 <sup>a</sup>	.627	.607	.22431

a. Predictors: (Constant), Continuance Intention, Trust, Perceived Ease of Use, Perceived Use, Customer Satisfaction

**Description:** The Model Summary table has two important values. These values include the R value and R Square value. The R value shows the degree of correlation between the dependent variable and the independent variables of the study. The usually accepted R value is anything greater than 0.4. Regression analysis has revealed the R value to be 0.792 which is very high. This value shows a very strong correlation between the dependent and independent variables of the study. The

usually accepted R Square value is anything greater than 0.5. For this study, the analysis has revealed the R Square value to be 0.627 which is very good.

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.961	5	1.592	31.643	.000 <sup>a</sup>
	Residual	4.730	94	.050		
	Total	12.691	99			
a. Predictors: (Constant), Continuance Intention, Trust, Perceived Ease of Use, Perceived Use, Customer Satisfaction						
b. Dependent Variable: Loyalty						

**Description:** The ANOVA table has two important values including the F value and the significance value. The F value indicates the variation between the sample means or the variation that exists within the samples. The high value of F indicates that the variation between the samples is high. The generally accepted F value is anything greater than 1. The results of regression has indicated the F value of 31.643 and the value is significant at 0.000 which means that the result of this analysis is significant.

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.519	.405		-1.281	.203
	Perceived Ease of Use	.071	.064	.073	1.106	.272
	Perceived Use	.347	.088	.336	3.926	.000
	Trust	.131	.056	.155	2.341	.021
	Customer Satisfaction	.323	.116	.259	2.789	.006
	Continuance Intention	.255	.075	.267	3.417	.001
a. Dependent Variable: Loyalty						

**Description:** The most important values in the coefficients table include the beta values and the significance values. The dependent variable is loyalty while the independent variables of the study include perceived ease of use, perceived use, trust,

customer satisfaction, and continuance intention. The beta value indicates the amount of variation in the dependent variable that can be attributed to the variation in independent variable of the study. There is a significance value for each corresponding beta value indicating the significance of relationship between the dependent and independent variable of the study.

## Hypothesis Testing

### Hypothesis -1

**H1:** Perceived ease of use has positive impact on customer loyalty in E-commerce businesses.

This hypothesis was rejected. The beta value for the relationship association between perceived ease of use and loyalty is 0.071 which means that the perceived ease of use accounts for 7.1% of variation in the value of loyalty. The positive value indicates the direction of relationship. It means that the increase in value of perceived ease of use causes an increase in value of loyalty. However, the hypothesis was rejected because the significance value is 0.272.

### Hypothesis -2

**H2:** Perceived use has positive impact on customer loyalty in E-commerce businesses.

This hypothesis was accepted. The beta value for the association between the perceived use and loyalty is 0.374 which means that the perceived use accounts for 37.4% of variation in the value of loyalty. This relationship is moderate in statistical terms. The positive value indicates the direction of association. It means that the increase in value of perceived use causes an increase in value of loyalty. The relationship was accepted at significance level of 0.000.

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### Hypothesis -3

**H3:** Online trust has positive impact on customer loyalty in E-commerce businesses.

This hypothesis was accepted. The beta value for the association between the trust and loyalty is 0.131 which means that the online trust accounts for 13.1% of variation in the value of loyalty. This relationship is weak in statistical terms. The positive value indicates the direction of association. It means that the increase in value of online trust causes an increase in value of loyalty. The association between dependent and independent variable was accepted at significance level of 0.021.

### Hypothesis -4

**H4:** Continuance intention has positive impact on customer loyalty for E-commerce businesses.

This hypothesis was accepted. The beta value for the association between continuance intention and loyalty is 0.255 which means that continuance intention accounts for 25.5% of variation in the value of loyalty. This relationship is weak in statistical terms. The positive value indicates the direction of association. It means that the increase in value of continuance intention causes an increase in value of loyalty. The association between dependent and independent variable was accepted at significance level of 0.001.

### Hypothesis -5

**H5:** Customer satisfaction has positive impact on customer loyalty for E-commerce business.

This hypothesis was accepted. The beta value for the association between customer satisfaction and loyalty is 0.323 which means that customer satisfaction accounts for 32.3% of variation in the value of loyalty. This relationship is moderate in

statistical terms. The positive value indicates the direction of association. It means that the increase in value of customer satisfaction causes an increase in value of loyalty. The association between dependent and independent variable was accepted at significance level of 0.006.

## Chapter (5): Discussion and Conclusion

### 5.1. Discussion

The purpose of this research is to investigate the impact of antecedents of customer satisfaction on customer loyalty for customers using mobile commerce in Saudi Arabia. Mobile commerce has become a popular medium for the customers around the world in the last two decades. A lot of business around the world established online presence and offered their products and services to the customers over this medium. Mobile commerce and online shopping became very important during last decade especially after the COVID-19 pandemic that affected businesses and human lives around the world. The governments around the world imposed restrictions on social gatherings, physical interaction, and even business activities carried out physical places. Strict lockdowns were imposed by the governments to restrict the movement of people. A lot of businesses established their online presence during this period. To further facilitate their customers, each online business establishes a mobile application that the customers can use to make their purchases. The business activities conducted using the mobile applications is known as mobile commerce. Like most of the other countries of the world, mobile commerce became a significant means for carrying out shopping for a lot of Saudi customers.

The sudden rise in use of mobile commerce exposed a lot of vulnerabilities and problems associated with this medium. For example, achieving customer loyalty with the customers who make online purchases is very difficult as compared to traditional business processes. The customers can stay at their homes and use their

mobile phones to search any item online. There is no physical effort involved in this process. Furthermore, the online search provides the customer with a lot of potential options and substitutes along with the freedom to choose from numerous vendors offering the same product at different prices. Because of these factors involved in mobile commerce, the companies using mobile commerce face a lot of issues in finding loyal customers and/or developing sense of loyalty in their customers. Review of literature indicates a lot of factors as antecedents of customer loyalty for customers who use traditional means of shopping and business. For the purpose of this study, antecedents of customer satisfaction have been selected to study their impact on customer loyalty for mobile commerce customers in Saudi Arabia.

The primary focus of this study is to investigate the impact of antecedents of customer loyalty on customer satisfaction for mobile commerce customers in Saudi Arabia. To achieve this objective, the quantitative research approach has been used. The research design used in this study is known as the cross-sectional survey design. The questionnaire was developed and administered online to reach 100 participants of the study. The data collected from these participants has been analyzed using SPSS software for different statistical techniques and analyses. The number of males in participants is 68 while the number of females is 32. Majority of the participants fall in the age group of 31-40 years. The result of correlation analysis has highlighted the existence of significant association between the dependent variable and independent variables of the study. Customer loyalty is the dependent variable while the independent variables of the study include perceived ease of use, perceived use, trust, customer satisfaction, and continuance intention.

The regression analysis has indicated that perceived ease of use has positive influence on the customer loyalty; however, this influence is not statistically significant. Therefore, H1 was rejected based on the empirical finding. Perceived ease of use is an important antecedent of customer loyalty for customers using

traditional means of shopping and the significance of this influence is reported by a number of research studies in the past including Ozturk et al. (2016) and Tu et al. (2012). Perceived ease of use has not been proved as antecedent of customer loyalty for customers using mobile commerce. This finding may have resulted from the fact that the use of mobile commerce has become very easy for the customers and perceived ease of use has lost its significance as an antecedent of customer loyalty. All of the customers believe that the mobile commerce platforms are very easy to be used.

The regression analysis has revealed that perceived use, customer satisfaction, and continuance intention has moderate influence on the customer loyalty for mobile commerce customers in Saudi Arabia. According to empirical results, perceived use accounts for 34.7% of change in the customer loyalty, customer satisfaction leads to 32.3% of change in customer loyalty, and continuance intention accounts for 25.5% change in the customer loyalty. All of these findings are statistically significant. All of these findings are consistent with the empirical findings reported in the past as well. Tu et al. (2012) has reported the similar findings for all three of these independent variables. Tu et al. (2012) argued that the customers are more likely to display loyal behavior and make their future purchases from same vendor if they find the experience of using the mobile commerce medium easier to use. Lee (2011) reported the influence of customer satisfaction on customer loyalty and argued that the customers are more likely to use the mobile commerce only when they are satisfied with their previous use of this medium. Anugrah (2020) has also argued that customer satisfaction is the precondition for developing customer loyalty in case of mobile commerce customers.

Finally, the regression analysis has revealed that customer trust has a weak positive influence on customer loyalty for mobile commerce customers in Saudi Arabia. Customer trust is an important antecedent for customers using traditional shopping

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channels. However, the influence of trust on customer loyalty is weak for mobile commerce customers. Most of the empirical findings reported in past have indicated a moderate positive influence of customer trust on customer loyalty for E-commerce customers including Tu et al. (2012) and Leninkumar (2017). There may be some other factors involved in association between customer trust and customer loyalty for mobile commerce customers in Saudi Arabia.

## 5.2. Conclusion

The primary objective of this study was to investigate the impact of antecedents of customer satisfaction on customer loyalty for mobile commerce customers in Saudi Arabia. Mobile commerce platforms have become very popular means for shopping in Saudi Arabia during the last two decades. Mobile commerce and other E-commerce platforms became necessity of life after the COVID-19 pandemic hit the world. The customers have started preferring the mobile commerce platform because shopping is easier using this medium. The customers do not have to go to physical store. They can search the items online easily. Mobile commerce allows the customers to make price comparisons easily. A lot of customers in Saudi Arabia are also using mobile commerce because of these advantages. Like companies in other parts of the world, the mobile commerce companies in Saudi Arabia are also facing issues related to customer loyalty. For this purpose, quantitative research approach and cross-section research design has been used to determine the factors that influence customer loyalty for mobile commerce customers in Saudi Arabia. The factors used as independent variables in this study include perceived ease of use, perceived use, customer satisfaction, customer trust, and continuance intention. The empirical findings have reported that the perceived ease of use has no influence of customer loyalty on mobile commerce users; however, other factors including perceived use, customer satisfaction, trust, and continuance intention have positive influence on customer loyalty for mobile commerce users in Saudi Arabia.

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### 5.3. Managerial Relevance

The managers of the companies using mobile commerce for conducting business are facing issues related to customer loyalty. It is a comparatively new medium and the managers are not aware about a lot of aspects related to this medium. The findings of this particular study have added significantly to the literature of Marketing Management field. Furthermore, it has provided the marketing managers of these companies in Saudi Arabia with factors that they can work to achieve loyalty of their mobile commerce customers. They can develop policies and strategies through which they can induce a sense of loyalty in their customers,

### 5.4. Limitations and Scope for Future Research

This study has a few limitations that are usually associated with quantitative approach and cross-sectional design. First, this study relies on collection of data from only one particular source which might not be reliable for developing comprehensive results and explanations. The time and resources for conducting this study were very limited due to which sample size comprised of just 100 participants. To achieve more representative sample and more generalizable findings, the sample size should have been larger. The future researchers should keep these limitations and recommendations in mind. Furthermore, the future researchers should use experimental design and models to establish cause-and-effect relationship between the variables in their study.

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## Annexure Cover Letter

*Hello!*

*The purpose of this research is to investigate the relationship between antecedents of customer satisfaction (perceived use, perceived ease of use, and trust) on customer loyalty for mobile commerce users. Technology is evolving at a rapid pace and latest technological gadgets and applications are becoming part of our lives every day. The introduction of computer, internet, and smartphones has transformed the businesses around us. Most of the customers went to physical stores in past but a large proportion of modern customers have shifted to mobile commerce. Due to increasing number of mobile commerce users, companies have become very keen to establish their E-commerce platforms. These companies have also started introducing the mobile applications through which it has become easier for the customers to conduct shopping. The next step for these companies is to work on the loyalty of these customers because customer loyalty has been a major subject matter of concern for the businesses. Mobile commerce option allows the customers to search for alternative options without any effort and they are likely to switch to different brands and alternatives very easily. Therefore, this particular study has focused on investigation of impact of customer satisfaction on customer loyalty.*

*Your voluntary participation is required to accomplish the key objectives of this study. Your completely filled surveys will be considered as the indication of your voluntary participation. The researcher takes the full responsibility of maintaining the anonymity and confidentiality of the participants. The research, at no point in research, has the power to disclose the identity or responses of any particular participant. To ensure this, the participants are not required to mention their names, addresses, or any particular means of identifying the participants. All of the completely filled surveys will be compiled and secured so that it becomes impossible to recognize any specific participant's responses.*

*The researcher also ensures following the ethical guidelines and principles of conducting this research. For this purpose, the researcher ensures that these responses will only be used for this research only. These responses are not applicable for any other research. Furthermore, the collection and use of data from the participants is authorized by the Saudi Electronic University.*

*The researcher appreciates the time and effort by the participants. Your completely filled questionnaires are highly valuable for this research.*

*Thank you!*

*Sincerely,*

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## Questionnaire

### Demographic Variables

1. Gender

- (a) Male (b) Female

2. Age

- (a) 18-30 (b) 31-40 (c) 41-50 (d) 51-60 (e) 60 or above

3. Professional Status

- (a) Employed/Salaried  
(b) Businessman  
(c) Unemployed

4. Educational Level

- (a) Middle  
(b) Secondary  
(c) College  
(d) Graduation  
(e) Masters

### Perceived Ease of Use

4. I think it is easy to conduct shopping using the mobile applications.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

5. Interacting with mobile commerce applications is easy.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

6. I think mobile applications should be launched along with user manual.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

7. I think it is not difficult to recover if I made an error during mobile commerce shopping.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

8. I think it is easier for me to understand the mobile commerce applications.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

9. Overall, I find the mobile commerce applications easy to use.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

#### Perceived Use

10. It would be very difficult for me to shop without mobile commerce option.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

11. I feel more in control when I use the mobile commerce application.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

12. The mobile commerce applications make it easier for me to conduct shopping.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

13. Mobile commerce facility save a lot of time for me.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

14. I can find good quality products/services using mobile commerce applications.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

15. Mobile commerce applications enable me to find products that are very difficult to find otherwise.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

16. I am able to purchase goods/services at good prices using mobile commerce applications.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

#### Trust

17. I believe that the vendors are not lying on when presenting products/services online.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

18. I believe that the online vendors are not trying to deceive the customers.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

19. I believe that the online vendors are not exploiting the customers.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

20. I believe that my personal information is completely secure when I use mobile commerce applications.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

21. I believe that my financial credentials are secure when I am using the mobile commerce applications.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

#### **Customer Satisfaction**

22. My experience with mobile commerce applications is very delightful.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

23. I am happy to conduct shopping using mobile commerce applications.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

24. I am satisfied with the user interface offered by majority of mobile commerce applications.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

25. I am satisfied with the quality of products/services that I purchase using mobile commerce applications.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

26. I am generally pleased with saving time using mobile commerce applications.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

27. I am generally pleased with saving money by purchasing cheap products using mobile commerce applications.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

#### **Continuance Intention**

28. I intend to continue using the mobile commerce applications rather than discontinue its use.

- (a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

29. I intend to use the mobile commerce applications for shopping rather than switching to other convenient means.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

30. I will keep using the mobile commerce applications for shopping frequently in future.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

### **Loyalty**

31. I would like to keep purchasing using the mobile commerce applications in future.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

32. I would use the mobile commerce applications to buy products/services from multiple vendors.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

33. I would recommend using mobile commerce applications to my family and friends for making purchases.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree

34. I would refuse the option of going to physical stores when I can find the products/services online.

(a) Strongly Disagree (b) Agree (c) Neutral (d) Agree (e) Strongly Agree