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Understanding Customer Loyalty of M-Commerce Applications in Saudi Arabia

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Abstract

In many countries, there has been a revolution in using digital marketing to buy and sell products. Although there are some m-commerce applications in Saudi Arabia, the field is in its infancy. This study aims to identify the factors that impact customers' loyalty in the Saudi m-commerce context by integrating E-core service quality (E-S-QUAL) and e-recovery service quality (E-RecS-QUAL) scales, using a questionnaire distributed to Saudi citizens. Also, it examines the differences in loyalty between gender groups, age groups, and m-commerce experience groups and measures the fitness of the proposed model within the Saudi m-commerce context. Structural equation model (SEM) analysis revealed that system availability, fulfilment, responsiveness, compensation, and contact have a positive significant impact on m-commerce customers' loyalty. Efficiency and privacy did not have a significant impact on m-commerce customers' loyalty. There were no significant differences between gender groups, age groups, and experience groups in m-commerce customers' loyalty. In addition, the results showed that the proposed model has a good fit with the Saudi m-commerce context. These results may help retailers and service providers create and enhance loyalty in Saudi m-commerce applications by providing quality services.

Disciplinary: Mobile Commerce; Computer Technology & Application.

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1 Introduction

Currently, there is a global revolution in digital technologies which enhance and change society and business operations [1]. People are now using technology for learning, working, investing, buying, and selling goods and services. In Saudi Arabia, m-commerce applications such as Souq.com and Noon shopping have been interested by the public and the number of users using

the applications has increased dramatically. This recent increase in the number of m-commerce users in Saudi Arabia is due to the increasing number of smartphone users [2]. In Saudi Arabia, the total number of current Internet users in the country is estimated to be over 26 million users, with over 40 million subscriptions to mobile telecommunication services by the end of 2017 representing about 126.7% of the population [3]. In Saudi Arabia, there are 8 million buyers through applications and websites and 93% of them access sites and applications via mobile phones. The size of the e-commerce market in Saudi Arabia is 29.7 billion Riyals [3]. Therefore, this study aims to measure the impact of service quality on Customers' Loyalty of m-commerce applications by integrating the E-S-QUAL and E-RecS-QUAL scales. It also examines the differences in loyalty between gender groups, age groups and m-commerce experience groups and measures the fitness of the proposed model within the Saudi m-commerce context.

2 Literature Review

2.1 M-commerce

Mobile commerce (m-commerce) has recently become more important due to widespread use of tablets and smartphones [4]. M-commerce refers to the vast online commercial transactions for services, applications and goods [5]. It also refers to any money transactions (buy or selling) that happen through a mobile telecommunication network [6]. It allows a company to be closer to customers and allows customers to shop via mobile phones anywhere and anytime [7]. M-commerce provides outstanding services for businesses and organizations to obtain stakeholders' satisfaction [8]. In the same line, Service providers can use m-commerce to improve the quality and efficiency of their services and to provide great offers to customers [9]. M-commerce has several types of applications including mobile entertainment, mobile ticketing, mobile marketing, mobile shopping, mobile banking, and bill payment and mobile peer-to-peer payments [10]. M-commerce has two main characteristics: reachability and mobility [11] and several key features or advantages such as convenience, personalization, dissemination, mobility, customization, ubiquity, time efficiency and flexibility [2, 7]. Increased mobile phone use has supported m-commerce adoption and created a solid base for these applications [8]. In developed countries, the acceptance and adoption of m-commerce has increased among users due to the spread of e-commerce [12]. In Saudi Arabia, m-commerce has a strong chance to be successful due to the Saudi government seeking to make a major transformation of the national economy in order to achieve its 2030 Vision objectives by supporting the adoption and use of new technologies in the market [13]. The Saudi market is an attractive and positive market for successful m-commerce adoption [14].

2.2 M-commerce Loyalty

According to [15] m-commerce customer loyalty is defined as the positive attitude of consumers toward service provider and their recommendations to their friends and relatives about their purchases of services/goods and their intention to repurchase in the future. User loyalty indicates customer attitudes towards repeatedly purchasing services and goods with fixed emotions despite different environmental impacts and methods of advertisement [16]. Many aspects may

reflect the customers' loyalty, namely, intention to repurchase, positive attitudes towards the service provider and customer preferences [17]. Mobile loyalty is defined as the intention to reuse the application for further purchases or re-visit it [18]. Customer loyalty happens when the customer has a positive attitude towards the e-retailer which leads to continuous re-buying [19]. Customer loyalty increases the number of customers without advertising expenses because loyal customers recommend that others buy from the vendor which increases the customer base, profit and growth [20-21]. Customers' loyalty is considered an important intangible asset for many companies and it is often the focus of marketing [22]. There are two types of customer loyalty: a) active loyalty and b) passive loyalty [23]. Customer loyalty is an interesting topic for scholars because it has significant impacts on competitive advantage for different companies [22]. In the e-commerce context, customer loyalty is very important and it plays a key role in increased satisfaction and sales [24]. Therefore, retailers in m-commerce need to maintain a good relationship with customers because customer loyalty will impact their profit and growth. In other words, customer loyalty of retailers in m-commerce is considered a key factor to m-commerce success [15]. Many previous studies (e.g. [25]) found that enhance customer loyalty and retaining them has a key role in getting a competitive advantage. The study [26] found that perceived value, trust, habit, and customer satisfaction had a significant impact on customer loyalty in m-commerce contexts in Taiwan. The study [27] found that the perceived security has a significant impact on consumers' loyalty to m-commerce in China. [15] reported that efficiency, system availability, fulfilment, privacy, satisfaction, trust and commitment impact directly or indirectly on customer loyalty of m-commerce in Malaysia. It has been noted that the service quality of m-commerce impacts user loyalty [16]. Trust and satisfaction also have a positive impact on customer loyalty m-commerce of Zalora in Indonesia [28]. Service quality is also a significant factor influencing customer loyalty [15]. It has been stated that service providers cannot achieve loyalty using technology alone, but also by continually providing excellent services for customers [29].

2.3 Service Quality

Service quality is defined as consumers' assessment of the quality of service processes and quality of contact with providers via their electronic channels [30]. In marketing, service quality is defined as the extent of the commitment to do what it claims to do [31]. [32] noted that, e-service quality includes all phases of the interaction between customers and websites. In addition, e-service quality is defined as the results of customers' assessments regarding the process and its quality provided online by service providers [33]. Service quality is usually assessed based on customers' perceptions [34]. The study [35] showed that to achieve a great experience in online shopping, the service providers should be aware of service quality because it plays a key role in customers' loyalty. [36] used E-core service quality (E-S-QUAL) and e-recovery service quality (E-RecS-QUAL) scales to measure the impact of service quality on Customer Perceived Value of websites offering touristic services over the Internet to domestic tourists in Turkey. The results showed that efficiency, system availability, fulfilment, privacy (E-S-QUAL), responsiveness,

compensation and contact (E-RecS-QUAL) had indirect impacts on customer perceived value. Three dimensions of service quality namely tangibles, reliability and empathy had significant positive impacts on customer loyalty in the Commercial Banks of Sri Lanka [37]. [38] Found that e-recovery service quality (responsiveness, compensation and contact) had a positive effect on e-loyalty in online stores in Iran. The recent study by [33] measured the impact of e-service quality with three dimensions (responsiveness, efficiency and perceived credibility) of Internet banking and the relationship with customer satisfaction in India. The results revealed positive relationships between responsiveness, efficiency and perceived credibility and customer satisfaction.

2.4 Theoretical Framework

In this study, E-S-QUAL and E-RecS-QUAL scales were used to measure the impact of service quality on customers' loyalty in m-commerce applications. [39] confirmed that, the main goal of using E-S-QUAL and E-RecS-QUAL is to measure the service quality of Web sites. E-S-QUAL is considered a core scale for e-service quality, while E-RecS-QUAL is used for e-service quality recovery when there is an issue with providing service to the customers [40].

According to [41], E-S-QUAL contains four dimensions: efficiency, fulfilment, system availability, and privacy. Efficiency refers to speed and ease of use that allow users to access the websites or applications. Websites must be structured appropriately, be easy to use and operate, with a minimum of information to input. Fulfilment refers to the extent that service provider's fulfil their promises about the availability of products and order delivery. System availability refers to a website that operates in a technically perfect and accurate way, while privacy refers to the process of securely storing and protecting customers' information [41].

E-RecS-QUAL contains three dimensions: responsiveness, compensation and contact [42]. Responsiveness refers to customers being able to return products effectively through the site when problems happen. Compensation is defined as the process by which a service provider compensates customers if they experience unintended issues, while the contact is defined as a service provider providing contact details via email, telephone, or customer services representatives [42].

Based on the literature review, the proposed model for this study is presented in Figure 1 and the hypotheses are

H1: Efficiency (EF) will positively impact m-commerce Customers' Loyalty (LO).

H2: System availability (SA) will positively impact m-commerce Customers' Loyalty (LO).

H3: Fulfilment (FU) will positively impact m-commerce Customers' Loyalty (LO).

H4: Privacy (PR) will positively impact m-commerce Customers' Loyalty (LO).

H5: Responsiveness (RE) will positively impact m-commerce Customers' Loyalty (LO).

H6: Compensation (CO) will positively impact m-commerce Customers' Loyalty (LO).

H7: Contact (CN) will positively impact m-commerce Customers' Loyalty (LO).

Customer loyalty has been an important topic of m-commerce research but has not been extensively addressed empirically because most studies focus on the factors that impact m-commerce adoption [15]. While the assessment of intention to use new technologies is important

and common, the study of customers' loyalty in the m-commerce context has become increasingly important with increasing m-commerce uptake [43].

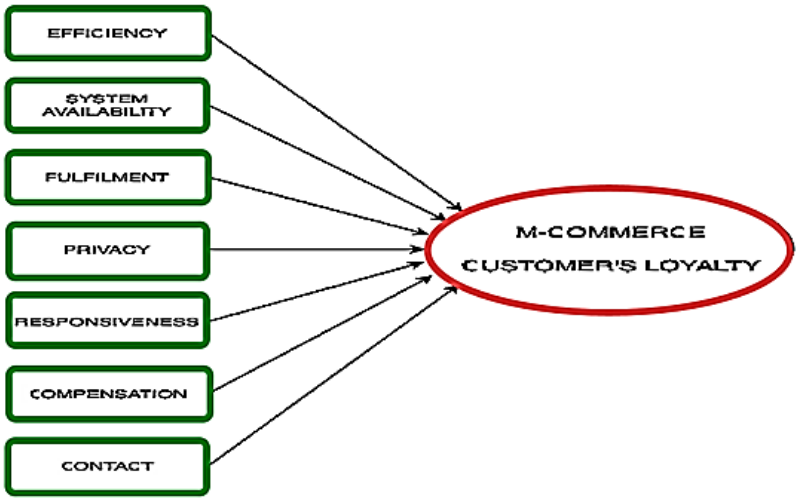

Figure 1: The proposed research model.

From reviewed studies, it is clear that there have been no empirical studies to measure the impacts of service quality on Customers' Loyalty of m-commerce applications using E-S-QUAL and E-RecS-QUAL scales in Saudi Arabia. There is also a lack of empirical studies examining the loyalty of customers of different ages, gender and m-commerce experience.

3 Methodology

In this study, a research questionnaire was distributed among Saudi citizens to collect data on m-commerce loyalty. This questionnaire has been used in [26, 38-39], and was used in this study with some modifications in some phrases be suited with m-commerce context. The questionnaire has three sections. The first provides general information about the research, study aims, and ethical information to obtain consent from participants and researcher details. The second collects personal information from participants. The third measures the impact of E-S-QUAL and E-RecS-QUAL scales on customer loyalty in m-commerce applications using five Likert-scale questions (5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree and 1 = Strongly Disagree).

Random sampling was used to obtain good generalizability of the results [44]. Thus, 1200 questionnaire links were distributed using social media, WhatsApp groups and Twitter, during October 2020. A total of 555 were returned with full responses. The researcher used Structural Equation Modeling (SEM) to measure the impact of E-S-QUAL and E-RecS-QUAL scales on customers' loyalty in m-commerce applications and to measure the fit of the proposed model. SEM is considered a good method to measure the fitness of models and to measure paths between multiple relationships [45]. T-test analysis was used to analyse the differences between customer loyalty between participants in different gender groups, age groups and experience groups.

4 Results

4.1 Personal Information

The results in Table 1 indicate that majority of participants were male (382, 68.8%) and young (18-40 years) (393, 70.8%). Just over half (317, 57.1%) had more than 3 years of experience using m-commerce applications.

Table 1: Personal information of the 555 survey participants.

Information		Number of participants	Percentage of sample
Gender	Male	382	68.8
	Female	173	31.2
	Total	555	100.0
Age	18-40 years	393	70.8
	More than 40	162	29.2
	Total	555	100.0
Experience in using m-commerce applications	Less than or equal 3 years	238	42.9
	More than 3 years	317	57.1
	Total	555	100.0

4.2 Assessment the Reliability

Confirmed that the value of Cronbach's alpha is acceptable if more than 0.70. The results in Table 2 revealed that the Cronbach alpha results for all factors are more than 0.70. Therefore, the results of this study are reliable in the Saudi m-commerce context.

Table 2: Reliability coefficient values

Section	Number of items	Cronbach Alpha reliability
Efficiency	8	0.898
System availability	4	0.795
Fulfilment	6	0.874
Privacy	3	0.835
Responsiveness	5	0.897
Compensation	3	0.839
Contact	3	0.850
M-Commerce Customers' Loyalty	5	0.901

4.3 Assessment of Model Fit

SEM was conducted to assess the model fit for the proposed model in this study Figure 2. The results in Table 3 met all the requirements for a good fit. Therefore, the proposed model in this study has good fit values in the Saudi m-commerce context.

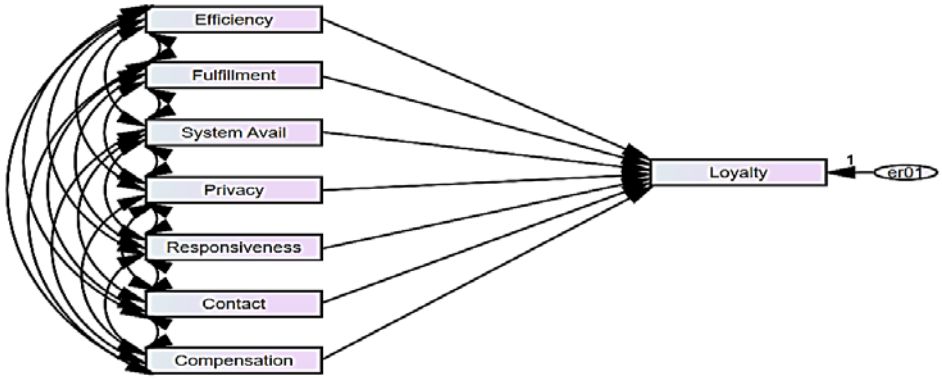

Figure 2: SEM for all constructs.

Table 3: Results of the model goodness-fit indices by SEM

Fit indices	Results	Requirements
χ2/df (CMIN/df)	1.844	<3 is good fit, <5 is acceptable fit [47-49].
RMSEA	0.039	<0.05 is excellent fit, <0.08 is a good fit, <0.1 is acceptable fit [48, 50]
AGFI, GFI, IFI and CFI	AGFI=0.973 GFI=0.999 IFI=1.000 CFI=1.000	AGFI >0.80 is good fit. GFI, IFI and CFI >0.95 is excellent fit; >0.90 is good fit; >0.80 is acceptable fit [49, 51-54]

Note: χ^2 = Chi-Square, DF = Degree of Freedom, GFI = Goodness-of-Fit Index, AGFI = Adjusted Goodness-of-Fit Index; IFI = Increment Fit Index, CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation.

4.4 Assessment of the Hypotheses

A standardized path coefficient value less than 0.10 is small impact, a value about 0.30 is medium impact and a value equal to or more than 0.50 is the large impact [55]. The SEM was conducted in this study (Figure 3 and Table 4) to assess the hypotheses via Maximum Likelihood by measuring the standardized path coefficient (β). The results in Table 4 show that system availability, fulfilment, responsiveness, compensation and contact have a positive significant impact on m-commerce Customers' Loyalty (H2: Supported $\beta = 0.261$, $p < 0.001$; H3: Supported $\beta = 0.204$, $p < 0.001$; H5: Supported $\beta = 0.212$, $p < 0.001$; H6: Supported $\beta = 0.092$, $p < 0.001$, H7: Supported $\beta = 0.101$, $p < 0.001$). The results also show that there are non-significant paths (EF→LO, H1: Rejected $\beta = 0.310$, $p > 0.05$ and PR→LO, H4: Rejected $\beta = 0.233$, $p > 0.05$). The results show that most of the impacts have a medium impact on m-commerce Customers' Loyalty. They also revealed that system availability has the greatest impact on m-commerce Customers' Loyalty and contact has the smallest impact on m-commerce Customers' Loyalty.

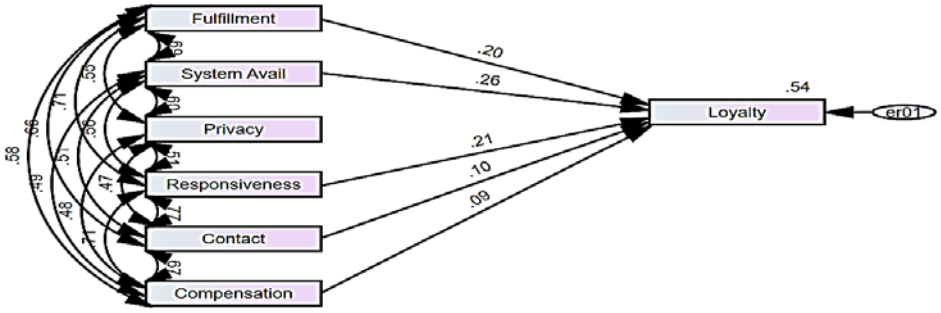

Figure 3: Structural equation model (SEM) for the proposed research model.

Table 4: Assessment of the hypotheses at 95% confidence interval**.**

Hypothesis	Path	β	P-value	Overall results
H1	EF →LO	0.310	0.08	Rejected
H2	SA →LO	0.261	< 0.001	Supported
H3	FU→LO	0.204	< 0.001	Supported
H4	PR →LO	0.233	0.09	Rejected
H5	RE→LO	0.212	< 0.001	Supported
H6	CO→LO	0.092	< 0.001	Supported
H7	CN→LO	0.101	< 0.001	Supported

4.5 Comparison of M-commerce Customers' Loyalty in Different Participant Groups

T-test analysis results in Table 5 reveal that although the female mean loyalty score was higher than for males, this difference was not significant. There was also no significant difference in loyalty between young participants (18-40 years) and old participants (More than 40). In addition, there was no significant difference in loyalty between less experienced participants (Less than or equal to 3 years) and more experienced participants (More than 3 years).

Table 5: Comparison of m-commerce customers' loyalty in different participant groups

Group		N	Mean	SD	T	P
Gender	Male	382	3.51	0.747	-2.774	0.006
	Female	173	3.70	0.766		
Age	18-40 years	393	3.61	0.747	2.401	0.017
	More than 40	162	3.45	0.771		
Experience of m-commerce applications	≤ 3 years	238	3.61	0.747	1.091	0.276
	> 3 years	317	3.54	0.765		

5 Discussion

Based on the results of the SEM, efficiency does not a significant impact on m-commerce Customers' Loyalty. This result contradicts those of many studies that found efficiency has a positive significant impact on customer loyalty [42, 56]. However, the results are supported by [58]. This unexpected result may indicate that users want and focus on service and care less about the efficiency of m-commerce applications. Also, based on the demographic data, most participants have more than three years of experience using m-commerce applications so they have enough experience to deal with some m-commerce application problems. This result may also have occurred due to the different target participants and sampling. However, the provider of m-commerce applications should ensure the applications are easy to use and allow users to rapidly access the application with a minimum of information to input.

As expected, the system availability dimension has the strongest significant positive impact on m-commerce Customers' Loyalty. This result is supported by [59] who found that system availability influenced loyalty among working adults in m-commerce in Malaysia. This result indicates that the m-commerce applications in Saudi Arabia have good technical functioning and users are satisfied. Fulfilment also has a significant positive impact on m-commerce Customers' Loyalty. This result is supported by [60], who found that fulfilment has a strong influence on loyalty in SMEs B2B e-commerce in Egypt. This result indicates that m-commerce applications in Saudi Arabia deliver the products on time to customers and have available products. In other words, it can deliver what is promised on time.

Unexpectedly, the results show that privacy does not have a significant positive impact on m-commerce Customers' Loyalty. This result contradicts many previous studies that found privacy has a positive significant impact on loyalty [42, 58]. However, this result supported is by [56] who found that privacy did not have a significant positive impact on the loyalty of e-commerce in Greece. This result may indicate that most users do not care about application privacy because they have experience in dealing with applications regarding privacy. Also, most of the applications are under government policy and law, so users trust these applications when using them. In addition, the first-time good experience usage will influence how the users feel about privacy because they already trust these applications.

The responsiveness, compensation and contact dimensions of E-RecS-QUAL have significant positive impacts on m-commerce Customers' Loyalty. These results are consistent with some previous studies by [42, 61-62]. These results indicate that m-commerce applications in Saudi Arabia allow users to return products effectively, compensate users if they face problems such as giving them discounts for their next buy, provide contact details and communicate effectively with users to answer their questions and comments.

In addition, the results revealed that there are no significant differences between gender groups, age groups and experience groups in m-commerce Customers' Loyalty. These results contradict those of many studies such as [63] who found that age, gender, and usage time have

moderating effects on customer loyalty of mobile instant messages in China. Also, the previous study [57] found that females have a higher loyalty level than males to online financial services in Canada. However, this study is supported by [46] that found no significant differences among age groups and gender groups in terms of loyalty to Italian e-commerce websites. This result may indicate that different age groups, gender groups and experience groups have the same loyalty for m-commerce applications because they received some benefits and were satisfied with these applications. In addition, most Saudi citizens enjoy buying from m-commerce applications and do not go to the mall as often. So they have the same loyalty for these applications. Another reason for these results is that these applications provide quality services to users effectively and successfully, so all their users have the same loyalty.

6 Conclusion

This study adopted E-S-QUAL and E-RecS-QUAL scales to measure the impact of service quality on Customers' Loyalty in m-commerce applications in Saudi Arabia. The results revealed that system availability, fulfilment, responsiveness, compensation and contact have a positive significant impact on m-commerce Customers' Loyalty. Efficiency and privacy did not impact m-commerce Customers' Loyalty. There were no significant differences between gender groups, age groups and experience groups in m-commerce Customers' Loyalty. In addition, the results showed that the proposed model has good fit values in the Saudi m-commerce context.

This study contributes to practical knowledge by addressing and acknowledging the factors of service quality that impact m-commerce customers' loyalty in Saudi Arabia and assessing the difference between gender groups, age groups and experience groups regarding their loyalty to m-commerce applications. This study contributes to theoretical knowledge by proposing, examining and evaluating the integration of the E-S-QUAL and E-RecS-QUAL scales to measure the impact of service quality on Customers' Loyalty in m-commerce applications in Saudi Arabia. Based on the review of the literature on m-commerce in Saudi Arabia, the proposed model is the first of its kind to be adopted in this field in Saudi Arabia. These results may provide a clear picture for retailers and service providers to create and enhance loyalty in Saudi m-commerce applications by providing a quality service successfully and effectively. The proposed model in this study can be adopted in other countries to identify the factors of service quality that impact customers' loyalty in the m-commerce context.

7 Data Availability Statement

The data for this study can be available upon a request made to the corresponding author.

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