

# The Relationship Between Mobile Marketing and Customer Satisfaction in Jordanian Commercial Banks: The Electronic Quality as A Mediator Variable

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## Abstract

The goal of this research is to look into the factors that influence customer satisfaction of Jordanian commercial banks. Electronic quality is a moderator variable in mobile marketing. A review of the literature has been conducted, and a framework illustrating the research case has been provided. This research presents the empirical findings of this study based on a sample of (N = 400) respondents. The statistical technique is used to conduct the analyses. This study adheres to the widely accepted reporting style of PLS-SEM analysis. When electronic quality is used as a moderator variable, there is a strong relationship between mobile marketing and customer perceptions in Jordanian commercial banks. We advise Jordanian commercial banks to employ electronic quality in their digital marketing operations, particularly mobile marketing.

**Keywords:** Mobile Marketing, Customer Satisfaction, Electronic Quality, Jordanian Commercial Banks.

## 1. Introduction

Since the service industry is tightly linked to technological advances, access to resources and their organization is streamlined. The financial sector is no exception, as it is dominated by technological advances and efforts to confront new problems to develop itself further. Mobile banking is becoming increasingly popular as a result of recent technological advancements in mobile installations. Mobile devices are constantly being used by banking consumers to reach their accounts. Therefore, banks must emphasize the importance of a meaningful digital environment to improve customer satisfaction. The banking sector is an important sector in the gross domestic product (GDP) of any economy in the world. In the last two decades, there has been a major development in the field of banking technology and a rapid spread of mobile marketing technology, which in turn have qualitative characteristics that have changed traditional marketing concepts (Öztaş, Y., 2015). Digital marketing tools yield profitable results. Social media marketing, digital television, content marketing, e-mail marketing, website optimization, banner ads, mobile marketing, streaming platforms, and digital billboards are all part of what is referred to as "digital marketing," which is broader than internet marketing. For specific purposes and markets, it is sufficient to use some, but not all, of the digital communication tools. They are chosen based on the following criteria: marketing budget, marketing strategy goals, audience age, staff skill level, and frequency of use of digital marketing tools. To assess the effectiveness of digital marketing communications, (Kapustina, et al., 2021). Mobile marketing and electronic service quality because the majority of research has concentrated on the impact of digital marketing, including mobile marketing. However, every quality researcher is confronted with the question of how to improve the quality of electronic services and what tools are available to do so. In terms of impact, advancement, and improvement, the relationship thus benefits both parties. Because of the rapid development and accessibility of mobile technology, targeting, low operational costs, adaptable ad designs, and the marketer's ability to send multiple marketing signals at once, mobile marketing is currently the most popular marketing strategy in the world. (Daoud, et al., 2022). Given that we live in a digital world, banks must seize every opportunity to connect with potential customers and retain existing ones, which necessitates the use of a methodology that has a significant impact. (Štefko, et al., 2015). Regarding Jordan, despite the relatively late adoption of banking technology by banks, the country's banking industry has significantly changed over the past ten years as Jordanian banks have embraced digital banking marketing and banking technology, which includes mobile marketing (Yaseen, et al., 2018).

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Knowing what influences and satisfies the customer helps an organization succeed and compete at the highest levels with other organizations in the same field. To investigate the impact of smartphones on customers' satisfaction at the Jordanian Commercial Bank. that banks pay more attention to activating electronic services, especially for high-end mobile applications, as they play a crucial role in customer satisfaction when considering future studies on the As customer decisions related to electronic services change and evolve over time quickly, conducting a longitudinal analysis on the same subject using a conceptual framework and relying on data collection and analytical data produces impressive results that can be utilized to track the fulfillment of satisfaction and repetitive purchase in the Jordanian commercial banking sector. Due to the fact that most bank customers fall into different demographic categories, which presents its own set of challenges in terms of balancing between all of these groups and the high level of competition, banks face difficulties in retaining and gaining new customers. Given the quality of banking services offered, it is important to research this topic to determine how smartphones affect customer satisfaction. (Ahmed, 2021).

## **2. Research Problem**

The studies revealed customer satisfaction with Jordanian commercial banks' banking services fluctuates, particularly in light of the country's rapid technological advancement, the study recommend that banks pay more attention to activating electronic services those can be improved via mobile applications, (Ahmed, E. 2021), there is an inability to meet customer satisfaction through digital marketing and to inform customers about the benefits of Jordanian commercial banks, Jordanian commercial banks should engage in more extensive mobile marketing efforts to raise customer awareness of the features, advantages, and benefits of electronic banking services. Financial institutions should concentrate their efforts on issues of privacy and

provide consumers with more secure and private digital services. Jordanian banks should also develop a more consumer mobile app to encourage customers to take advantage of their digital services, (Rawwash, H., *et al.* 2020).

Another study revealed a problem in customer satisfaction with the use of mobile banking applications, the study revealed that just 8% of Jordanian banking customers have used mobile banking services to conduct their transactions. It was also found that most banking customers feel that they should conduct their business without using mobile banking 82%. The study confirmed that there are other factors that have not been discussed affecting customer satisfaction and should be investigated by potential researches, such as financial constraints in obtaining mobile banking services, interface design in mobile banking services, and the absence of a proper keyboard on mobile phones, (M. Gharaibeh, *et al.* 2016)

## **3. Literature Review**

### **3.1 Mobile Marketing**

Kapustina, L. *et al.*, (2021): The study aims to clarify the concepts of digital marketing and the internet, and it works on classifying digital marketing communications. The purpose of the research is to present modified criteria, an appropriate approach to selecting the best digital marketing tools for a specific company or market, and structured indicators to determine the effectiveness of the marketing communication content. The systematic approach is being used on small businesses in the cut flower retail market. For digital advertising of an organization, a website was chosen, and social networks and search marketing were reordered. Marketing communications performance indicator calculations have shown that using digital marketing tools leads to a good financial result. Pereira, P. J. *et al.*, (2021): Mobile performance marketing is becoming more valuable due to the widespread acceptance of digital devices, and is aided by Demand-Side Platforms (DSPs) that match mobile consumers to ads. When a consumer converts, cash reward exists in these markets. As a result, one of the most important DSP

issues is the development of a data-driven model for predicting user conversion. The study suggests a novel Inter Optimization (MO) technique for evolving Decision Trees (DT) using Typographical Evolution (GE), with two major variants: a pure GE method (MGEDT) and a GE with Descent with modification Evolution (GELE) (MGEDTL). Regarding the GE process (MGEDT) and a Lamarckian Evolution GE (MGEDTL). Both models evolve differential DTs and optimize predictive efficiency and complexity of the model at the same time. The GE approaches provide a training sampling and parallelism validation process to manage large data. The algorithms were tested on a new database from a real-world DSP that had about 6 million documents. The two GE models were compared to a regular DT method (CART), a Decision Tree, and a state-of-the-art Deep Learning (DL) model using a theoretical Rolling Window (RW) verification. The GE approaches, which have inexpensive training schedules and very fast predilection, produced competitive outcomes.

### **3.2 The Electronic Quality**

Kalia, et al., (2021): Advertisers have introduced cutting-edge self-service technology to consumers in order to increase customer loyalty and the effectiveness of e-service (e-SQ). Using data from an important emerging market, the researchers attempt to compare similarities and differences between top e-retailers based on consumer experience grounded in seven dimensions of e-SQ. The Multi-Dimensional scaling (MDS) methodology was used to evaluate the respondents' similarity decisions in order to create an overall perceptual map of the e-retailers. However, because customers value them more, the researchers recommend that online retailers improve their service recovery dimensions. The researchers also looked at how the top two online retailers, Amazon India and Flipkart, are using cutting-edge technology to improve delivery and communication, which are two critical aspects of managing e-SQ.. Jain, et al., (2021): The purpose of this study is to investigate the role of shopping satisfaction in mediating the relationship between the quality of electronic logistics service and the intention to repurchase. This article also investigates how gender, payment preferences, and refund or replacement experiences influence the relationship between e-LSQ and shopping satisfaction (and repurchase intention). The empirical data of 640 online Indian shoppers is examined using a structural equation simulation method based on covariance. The findings revealed that shipping status is the most important e-LSQ dimension, and the relationship between this dimension and shopping satisfaction is affected by factors such as payment methods, gender, and return history. Returns in Indian e-commerce may have been influenced by the shipment's poor condition. The findings will assist e-commerce managers in developing a strong logistics network.

### **3.3 Customer Perceptions**

Li, F., et al., (2021): The banking industry is increasingly evolving to embrace e-banking as a cost-effective and appropriate means of satisfying customers. Traditional banks recommend online banking as a standard option to provide consumers with quicker and more secure services. E-banking was used to enable clients perform their banking transactions thanks to the rapid technological advancement. Still, the main issue with e-banking is retaining clients who have switched to online banking. Customer loyalty is an important element in a bank's ability to maintain its competitive edge. As a result, this study aims to examine the factors that influence customer satisfaction across e-banking services. Madzík, P., et al, (2021): The research explores the accuracy of three separate approaches for processing the outcomes of large-scale surveys: value direct scoring (PDS), rating (RK), and multi-choice (MCh). The degree of total satisfaction acted as a criterion for measuring their accuracy. A methodical approach was taken: first, the

authors of the study picked a reference value to measure accuracy. The formulas for determining the reference value had to be determined next. Following the measurement, the values measured using each method were compared with the reference value, and the data collected was used to evaluate the method's accuracy. In terms of precision of its relationship to the reference value, the RK approach outperformed the PDS and MCh strategies by a statistically significant amount. The RK method was estimated to be 7.8% more reliable than the PDS and MCh strategies on average. Moudud-Ul-Huq, (2021): Mobile banking is a new banking service that allows customers to deposit money into their accounts using their mobile devices. As a result, the goal of this study is to discover the impact of innovations and internet payments on customer satisfaction, as well as the factors that influence customer satisfaction. After reviewing the literature and using data from 269 participants who used online media to explain the model's accuracy, the author proposes a model. They use the partial least squares (PLS)-structural equation modeling (SEM) methodology to investigate the aforementioned relationships. Their findings indicate a strong link between customer loyalty and innovation (I) and mobile banking (MB). Dash and colleagues (2021): This study examines the role of 508 prospective property development first-time homebuyers using structural equation modeling.

#### **4. Research Methodology**

Jordan is divided into 12 governorates and within three regions, the Central Region, the North Region, and the Southern Region. This study took place in Amman, the capital (Central Region) because the population of Jordan in 2021 was 10,923,393, and in the capital Amman it was 4547023 (Jordanian Department of Statistics, 2021). The number of Jordanian commercial banks in Amman city is 13. There are 378 branches in total (Annual Report, Central Bank of Jordan, June 2020). All commercial banks have a mobile banking application.

The population of the present study consists of the customers of Jordanian commercial banks in Jordan. The unit of analysis (UOA) are the customers of Jordanian commercial banks in Amman city, despite their demographic difference and scientific and cultural level, this is for individuals, as well as commercial and service organizations are also clients of Jordanian commercial banks. The target population for the present study consisted of the customers of Jordanian commercial banks in Jordan.

Since research methods or designs are roughly orthogonal to data collection techniques, any data collection method may theoretically be used for any research approach. Many data collection methods, such as probe data, case data collection, and prediction data, are used during data collection. Continuous data collection, also known as trial-by-trial data collection, requires the interventionist to gather data regularly. Data for the present study will be collected from both secondary and primary data. The purpose of multiple data collection methods is to reach the expected objectives and achieve added value in the field of study.

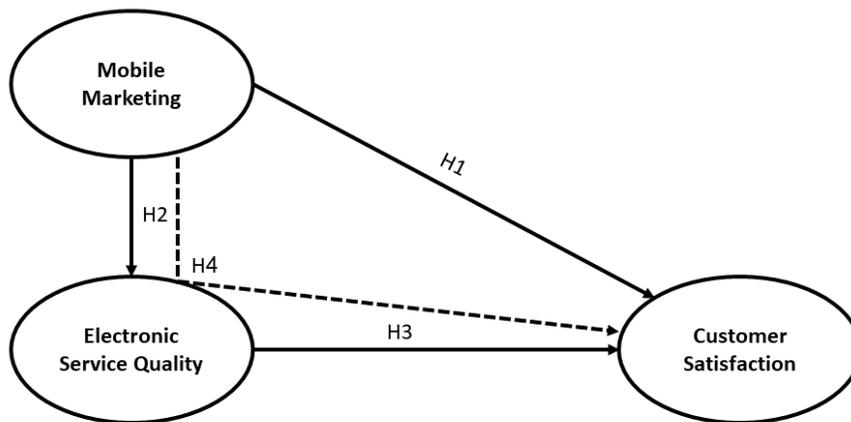


Figure:1. Research Model

H1: There is a significant impact of mobile marketing on customer satisfaction.

H2: There is a significant impact of mobile marketing on electronic quality.

H3: There is a significant impact of electronic quality on customer satisfaction.

H4: There is a mediating impact of electronic quality on the relationship between mobile marketing and customer satisfaction.

## 5. Data Analysis and Results

This section presents the empirical findings of this study. The statistical method is used to conduct the analyses. This section adheres to the accepted PLS-SEM reporting style that previous studies have recommended (Chin, 2010). To ensure conformity, the data sets are screened for multivariate assumptions before proceeding with the structural equation modeling procedures. This is followed by a model quality assessment.

### 5.1 Profile of Respondents

Table 5.1: Profile of respondents (N=400)

Variable	Category	Frequency	Percent (100%)
Gender	Male	200	50
	Female	200	50

<b>Age</b>	18-27	50	12
	28-37	172	43
	38-47	80	20
	48-57	20	15
	58-67	10	5
	68-over	10	5
<b>Educational Level</b>	High school	10	3
	Diploma	10	3
	Bachelor	250	62
	Master	80	20
	PH.D	50	12

## 5.2 Multicollinearity Test

Using SPSS version 25, the researchers did two types of tests for multicollinearity between variables: tolerance value and variance inflation factor (VIF). According to the multiple regression analysis data shown in Table 4.8, the tolerance value for the independent variable was .800, and the variance inflation factor (VIF) value was 2.021. Given that the tolerance value is significantly greater than 0.10 and the VIF value is less than 10, it can be concluded that variable multicollinearity is not a problem.

Table 5.2: Result of skewness and kurtosis for the test of normality (N= 400)

Variable	Collinearity Statistics	
	Tolerance	VIF
Electronic Quality	.800	2.021
Customer Satisfaction	.800	2.021

## 5.3 Measurement Model Assessment

### 5.3.1 Internal Consistency Reliability

The goal of construct validity is to determine how well the results of a measurement match the theories on which the test is based (Sekaran, et al., 2013). In a nutshell, construct validity is concerned with the question, "Does the adapted instrument measure what it is supposed to measure as theorized?" The researcher used three rigorous validity tests to conduct the validity analysis: validity, convergent validity, and discriminant validity (Sekaran, et al., 2013). Content validity measures how well the indicators or scale items represent the domain of the concepts under study.

Table 5.3: Internal consistency reliability analysis

Dimension	Cronbach's Alpha	Composite Reliability	AVE
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<b>Mobile Marketing</b>	0.860	0.901	0.400
Consumer wants and needs	0.860	0.900	0.790
Cost to satisfy	0.924	0.929	0.690
Convenience to buy	0.811	0.922	0.744
Communication	0.872	0.920	0.775
<b>Electronic Quality</b>	0.864	0.889	0.451
	0.898	0.904	0.804
System Availability	0.913	0.914	0.801
Efficiency	0.881	0.940	0.808
Fulfillment	0.872	0.887	0.801
Privacy			
<b>Customer Perceptions</b>	0.880	0.910	0.470
Live Chat	0.908	0.947	0.880
Follow-Up Surveys	0.934	0.979	0.800
Marketing Emails	0.890	0.913	0.766

### 5.3.2 Convergent Validity

The convention requires that the factor loading, average variance extracted (AVE), and composite reliability be calculated in order to establish convergent validity (CR). According to Hair et al. (2019), the three key assessors of convergence validity are factor loadings, composite reliability, and average variance extracted (AVE). A researcher can simply conclude that the measurement scale is valid when items/indicators load highly (i.e., > 0.5) on their related constructions, according to Hair et al., (2010). For this study, forty-two (42) items comply and load highly on their constructs while also exceeding the recommended threshold value of 0.5. (Hair et al., 2020). AVE results with coefficients ranging from 0.625 to 0.826. This denotes the determination of convergence validity for all constructs. Furthermore, the table.

Table 5.4: Convergent validity analysis

	Variable	Items	Loadings	Cronbach's Alpha	Composite Reliability	AVE
<b>Mobile Marketing</b>	Consumer wants and needs	CWN1	0.859	0.910	0.934	0.769
		CWN 2	0.890			
		CWN 3	0.879			
		CWN 4	0.809			
		CWN5	0.887			

Electronic Quality	Cost to satisfy	CS1	0.891	0.920	0.940	0.750
		CS2	0.871			
		CS3	0.877			
		CS4	0.850			
	Convenience to buy	CB1	0.803	0.922	0.950	0.751
		CB 2	0.871			
		CB 3	0.841			
		CB 4	0.836			
		CB 5	0.872			
		CB 6	0.880			
	Communication	CO1	0.876	0.884	0.901	0.797
		CO 2	0.888			
CO 3		0.820				
Electronic Quality	System Availability	SA1	0.897	0.880	0.920	0.751
		SA2	0.828			
		SA3	0.801			
		SA4	0.848			
	Efficiency	EF1	0.874	0.913	0.924	0.740
		EF 2	0.859			
		EF 3	0.901			
		EF 4	0.880			
	Fulfillment	FU1	0.897	0.811	0.880	0.741
		FU 2	0.874			
		FU 3	0.851			
	Privacy	PR1	0.894	0.890	0.927	0.781
		PR 2	0.882			
		PR 3	0.837			
		PR 4	0.891			
	Customer Satisfaction	Live Chat	LC1	0.863	0.900	0.921
LC2			0.905			
LC3			0.906			
Follow-Up Surveys		FUS1	0.920	0.913	0.924	0.800
		FUS 2	0.901			
		FUS 3	0.894			
Marketing Emails		ME1	0.891	0.901	0.932	0.785
		ME2	0.815			
		ME3	0.930			

### 5.3.3 Discriminant Validity

A comparison of the indicator loading with other variable cross-loading was performed to assess the discriminant validity of this study. This can be determined by observing higher loading values for the indicator in comparison to its cross-loadings with other variables (or indicators) (Chin, 1998; Hair, Ringle, & Sarstedt, 2013). The outcome compares the indicator loading to other reflective indicators. All accessible indicators are greater than cross-loading, implying that the discriminating validity condition has been met.

The heterotrait-monotrait procedure is an alternative procedure for discriminant validity testing (HTMT). The introduction of HTMT was motivated by criticisms of the Fornell-Larcker criterion. The use of HTMT eliminates the shortcoming of the Fornell-Larcker criterion, which has an unsatisfactory low sensitivity and is incapable of detecting a lack of discriminant validity (Henseler et al., 2015).

Table 5.5: Discriminant validity based on HTMT ratio of correlations

<b>Heterotrait-Monotrait Ratio (HTMT)</b>			
	<b>Mobile Marketing</b>	<b>Electronic Quality</b>	<b>Customer Satisfaction</b>
Mobile Marketing			
Electronic Quality	0.410		
Customer Satisfaction	0.357	0.330	

The HTMT criterion is below **0.85** thresholds, signifying that the discriminate validity was proven.

## 5.4 Structural Model Assessment

### 5.4.1 R-Square (R<sup>2</sup>)

The R<sup>2</sup> value indicates how well the independent variables explain the variance in the dependent variables. As a result, a higher R<sup>2</sup> value improves the predictive ability of the structural model. The R<sup>2</sup> values in this study are calculated using the SmartPLS algorithm function, and the t- statistics, P value, UL and LL values are calculated using the SmartPLS bootstrapping function. For this study, the bootstrapping method yielded 5000 samples from 400 cases.

Table 5.6: R<sup>2</sup> values for the endogenous latent variables

<b>Endogenous Variable</b>	<b>R<sup>2</sup></b>	<b>Predictive Relevance</b>
Electronic Quality	0.405	
Customer Satisfaction	0.660	

### 5.4.2 Q-Square (Q<sup>2</sup>)

In addition to effect size, the researchers investigated the model's predictive relevance (Q<sup>2</sup>) (Geisser, 1974; Stone, 1974). This can be evaluated using the cross-validated redundancy measure obtained through the PLS blindfolding technique for all endogenous constructs. As a general rule, the value of cross-validated redundancy should be greater than zero (Fornell & Cha, 1994), as shown in Table 5.6.

Table 5.6: The Q<sup>2</sup> values for the endogenous latent variables

<b>Endogenous Variable</b>	<b>SSO</b>	<b>SSE</b>	<b>Q<sup>2</sup> (1-SSE/SSO)</b>
Electronic Quality	7280.000	7322.163	0.150
Customer Satisfaction	3758.000	3478.241	0.178

### 5.4.3 Effect Size (F<sup>2</sup>)

The effect size (f<sup>2</sup>) is the complementary test to R<sup>2</sup>, whereby changes in the R<sup>2</sup> is observed with the omission of any selected exogenous variable from the model. To calculate the f<sup>2</sup>, the researcher must estimate two PLS path models (with and without the latent variable inclusion). The rule of thumb is the

value of effect sizes, the omitted construct for particular endogenous construct can be determined such as 0.02, 0.15 and 0.35 to illustrate small, medium, and large effects respectively (Cohen, 1988).

Table 4.7: Effect sizes ( $f^2$ ) of the latent variables

Variable	Endogenous Variable	$f^2$	Effect Size Rating
Mobile Marketing	Electronic Quality	0.154	Medium
	Customer Satisfaction	0.138	Medium
Electronic Quality	Customer Satisfaction	0.372	Large

#### 5.4.4 Path Coefficients Testing

The findings in Table 4.17 show the testing of H1, which proposes a significant relationship between mobile marketing and customer perceptions. The total effect of mobile marketing on customer perceptions was significant indicating that mobile marketing has a significant relationship with customer satisfaction. As a result, hypothesis 1 is fully supported.

The following H2 proposes a significant relationship between mobile marketing and electronic quality. The analysis' findings demonstrated a significant impact on the relationship, supporting H2. This finding suggests that Jordanian banks' mobile marketing initiative has a significant impact on the banks' electronic quality.

Furthermore, the empirical result demonstrates H3, which suggests that there is a significant relationship between electronic quality and customer satisfaction. The findings indicate that the total effect of electronic service quality on customer satisfaction was significant ( $= 0.370, t= 7.489, p0.001$ ), supporting Hypothesis 3. It has been shown that Jordanian banks' electronic service quality has a significant impact on customer satisfaction.

Table 4.8 Results of Structural Model

No.	Hypotheses	Beta	SE	T-Value	P-Value	Decision
H1	MM→CS	0.351	0.058	5.886	0.000	Supported***
H2	MM→EQ	0.290	0.062	5.480	0.000	Supported***
H3	EQ→CS	0.340	0.048	6.399	0.000	Supported***

5.4.5 The Mediating

#### ing Relationship Testing

The indirect effects of mobile marketing on customer satisfaction through the quality of electronic services are significant. As a result, hypothesis H4 was confirmed. The quality of electronic services was discovered to partially mediate the relationship between mobile marketing and customer satisfaction. The results of Hypotheses 4 are presented in Table 4.6.

Table 4. 9 Results of mediating effect

No	Hypothesis	B	Standard Error	T-value	P-value	Confidence Interval	
						95% LL	95% UL
H4	MM→EQ→CS	0.119	0.021	4.890	0.000***	0.104	0.240

6. Discussion and

#### Findings

The present study examined the relationship between mobile marketing, e-service quality and The extent of its impact on customer satisfaction. The main findings of the present study support the

significance of the relationship between mobile marketing and customer satisfaction. It was also found that there is a direct positive relationship between mobile marketing and electronic service quality, as well as between electronic service quality and customer satisfaction. As for the mediating effect, the results indicate that e-service quality partly mediates the relationship between mobile marketing and customer satisfaction. In general, the results of the present study agree with the study model that is based on three theories: 4S, E-S-QUAL and ACSI. The motivation behind the present study is the gap in the current situation to reach customer satisfaction in Jordanian commercial banks in a way that covers the previous gaps in literature. The present study used the mobile marketing variable due to its importance and used the electronic service quality mediator variable to strengthen the relationship between mobile marketing and customer satisfaction. The results of the statistical analysis showed that the dimensions of the mobile marketing variable (scope, site, synergy and system) have a moderate impact on customer satisfaction. The results also showed that the dimensions of the digital service quality variable (system availability, efficiency, fulfillment, privacy) have a moderating partial effect on customer satisfaction.

### **7. Suggestions of the Study**

More research is needed to provide insight into the role of mobile marketing and the role of digital quality to reach customer satisfaction in Jordanian commercial banks. It would also be interesting to extend the present study on other countries in the Middle East or other emerging countries to focus on the role of mobile marketing and the role of digital quality in this sector. There are several ways to extend the present study, the research results indicated new areas of future research that may have considerable implications too. First, future research may be beneficial, if there are more variables and that better procedures are incorporated into the future study to enrich the outcomes. In this regard, it is important to add other factors to the conceptual framework that have an impact on customer satisfaction through mobile marketing, such as content study and digital advertising, digital infrastructure and social responsibility.

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