THE INFLUENCE OF INFORMATION QUALITY AND GENDER ON THE SOCIAL COMMERCE ADOPTION FRAMEWORK BY SAUDI ARABIAN USERS USING THE UTAUT2 THEORY

by

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A Thesis
Submitted to the
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DEDICATION

This is dedicated to my parents, sisters, brothers and friends for their support and good wishes to successfully accomplish this journey. Additionally, I dedicate this work to the soul of my grandfather who raised my self-confidence and imagination.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my God for all His blessings and guidance. Then, I would take this opportunity to thank my academic supervisor, Dr. Vivian G Motti for her valuable guidance in completing this work. Also, I would thank the committee members Dr. Mihai Boicu and Dr. Hemant Purohit for their valuable suggestions. I would like to thank the GMU faculties who enhanced my knowledge to achieve this point and devote to the research.

This work is given to my country Saudi Arabia and I hope it can efficiently develop the practice in online shopping among its users.

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LIST OF ACRONYMS

AMOS	Analysis of Moment Structure
AVE	Average Variance Extended
BOGO	Buy One Get One
B2B	Business-To-Business
B2C	Business-to-Consumer
BI	Behavioral Intention
C-TPB-TAM	Combined Theory of Planned Behavior/ Technology Acceptance Model
CA	Cronbach's Alpha
CB-SEM	Covariance Based Square Structural Equation Modeling
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
GFI	Goodness-of-Fit Index
CMB	Common Method Bias
CMIN	Minimum discrepancy
COD	Cash On Delivery
CR	Composite Reliability
DOI	Diffusion Of Innovation
DF	Degree of Freedom
E-commerce	Electronic commerce
EE	Effort Expectance
ES	Emotional Support
FC	Facilitating Conditions
GDP	Gross Domestic Product
GMU	George Mason University
GoF	Goodness-of-Fit
HCD	Human Centric Design
HCI	Human-Computer Interaction
HM	Hedonic Motivation
HT	Habit
ICT	Information Communication Technology
IDT	Innovation Diffusion Theory
IQ	Information Quality
IRB	Institutional Review Board
IS	Informational Support
IT	Information Technology
KSA	Kingdom of Saudi Arabia

MCI	Ministry of Commerce and Investment
MM	Motivational Model
MPCU	Model of PC Utilization
PE	Performance Expectancy
PLS	Partial Least Square
PLS-SEM	Partial Least Square Structural Equation Modeling
PSO	Price Saving Orientation
PwC	PricewaterhouseCoopers
QR	Quick Response Code
RMSEA	Root Mean Square Error of Approximation
S-commerce	Social commerce
SA	Saudi Arabia
SAR	Saudi Arabian Riyal
SCCs	Social Commerce Constructs
SCT	Social Cognitive Theory
SEM	Structural Equation Modeling
SI	Social Influence
SM	Social Media
SMEs	Small and Medium-Sized Enterprises
SMN	Social Media Networks
SMWs	Social Media Websites
SNS	Social Networks Sites
SPSS	Statistical Package for the Social Sciences
SS	Social Support
SSA	Saudi Students Association
SRS	Stratified Random Sampling
TAM	Technology Acceptance Model
TAM2	Technology Acceptance Model 2
TOE	Technology–Organization–Environment
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UB	Use Behavior
UTAUT	The Unified Theory of Acceptance and Use of Technology
UTAUT2	The Unified Theory of Acceptance and Use of Technology 2
VB-SEM	Variance Based Structural Equation Modeling
VIF	Variance Inflation Factor

GLOSSARY OF TERMS

Behavioral Intention (BI): The extent to which a user intends to adopt social commerce in the future (Venkatesh, Morris, Davis & Davis, 2003).

Business-To-Business (B2B): "Describes commerce transactions between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer." (Kumar & Raheja, 2012)

Business-To-Consumers (B2C): "Describes activities of [a] business serving end consumers with products and/or services." (Kumar & Raheja, 2012)

Effort Expectancy (EE): "The degree of ease associated with consumers' use of the technology." (Venkatesh et al., 2012)

Facilitating Conditions (FC): "Consumers' perceptions of the resources and support available to perform a behavior." (Venkatesh et al., 2003)

Habits (HT): "The extent to which people tend to perform behaviors (use IS) automatically because of learning." (Limayem et al., 2007)

Hedonic Motivation (HM): "The fun or pleasure derived from using a technology" (Brown, 2005; Venkatesh, 2005)

Information Quality (IQ): "The consumers' general perception of the accuracy and completeness of website information as it relates to products and transactions." (Kim, Ferrin & Rao, 2008)

Price saving orientation (PSO): "Consumers' cognitive tradeoff between the perceived benefits of the applications and the monetary cost for using them." (Dodds et al., 1991) According to Sheikh et al. (2017), the name of the factor price value was replaced with price saving orientation since s-commerce cost saving.

Performance Expectancy (PE): "The degree to which using technology will provide benefits to consumers in performing certain activities." (Venkatesh et al., 2003)

Small and Medium-Size Enterprises (SMEs): "Are non-subsidiary, independent firms which employ fewer than a given number of employees" (OECD, 2005).

Social Influence (SI): "The extent to which consumers perceive that important others (e.g., family and friends) believe they should use a particular technology" (Venkatesh, Thong & Xu, 2012).

Social Media Applications: "A tool commonly associated with what is referred to as Web 2.0 technologies that facilitates information sharing, conversations, and community building using web-based services delivered over the Internet and the presence of user generated content." (Gruzd, Staves & Wilk, 2012)

Social Media Network (SMN): "Web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system." (Boyd & Ellison, 2010)

Social Support (SS): "The social resources that persons perceive to be available or that are actually provided to them by nonprofessionals in the context of both formal support groups and informal helping relationship." (Cohen, Gottlieb & Bergen, 2000)

Social Support (Emotional Support) (ES): "Providing messages that involve emotional concerns such as caring, understanding, or empathy" (Liang et al., 2011)

Social Support (Informational Support) (IS): "Providing messages, in the form of recommendations, advice, or knowledge that could be helpful for solving problems." (Liang et al., 2011)

Social Commerce (s-commerce): "Any electronic business transaction conducted from or involving a social network site or social networking activity." (Siau & Erickson, 2011)

Social Commerce Constructs (SCCs): "The online referrals, ratings and reviews, ratings, communities, forums, recommendations, and referrals" (Hajli, 2015).

Unified Theory of Acceptance and Use of Technology (UTAUT): An acceptance technology model "related to predicting behavioral intention to use a technology and actual technology use primarily in organizational contexts." (Venkatesh et al., 2016) that was developed with four core constructs and four moderators.

Unified Theory of Acceptance and Use of Technology (UTAUT2): The extension of the UTAUT theory with three new constructs added to the model hedonic motivation, price value, and habit with three moderators (Venkatesh, Thong & Xu, 2012).

Web 2.0: A second generation of the World Wide Web that supports user-generated content and social media networks (Andersen, 2007).

ABSTRACT

THE INFLUENCE OF INFORMATION QUALITY AND GENDER ON THE SOCIAL COMMERCE ADOPTION FRAMEWORK BY SAUDI ARABIAN USERS USING THE UTAUT2 THEORY

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George Mason University, 2018

Thesis Director: Dr. Vivian G. Motti

Social media (SM) is used extensively in Saudi Arabia, especially by women for online shopping. The number of active social media users has ranked the country as one of the strongest business markets in the world, and the largest Information and Communication Technology (ICT) market in the Middle East. These numbers are set to trend upwards, particularly in the context of "Vision 2030", an initiative announced in 2016 by Crown Prince Mohammed bin Salman. This comprehensive socio-political plan aims to provide equal job opportunities for both genders and increase Saudi Arabia's economy through improving business markets.

This study investigates the adoption of social commerce as one of the technologies under development by employing the Unified Theory of Acceptance and Use of Technology (UTAUT2) to test the influence of information quality and gender on a user's intention to buy products from social media websites. The extensive use of SM raises questions about whether Saudi Arabian users are willing to adopt social commerce

or not, and this study draws from an online survey conducted among 300 Saudi Arabian participants.

This survey data was analyzed by using Structural Equation Modeling (SEM). The research results indicate that there is a positive relationship between information quality and behavioral intention for adopting social commerce, gender as a moderator has no statistically significant effect on the UTAUT2 constructs for adopting social commerce. The managerial implications of this study are explained. The key findings of this thesis are used to propose effective recommendations for improving business performance by adopting social commerce based on the Saudi Arabian user's preferences.

Keywords:

Social media; social commerce; s-commerce; gender; information quality; consumers; Saudi Arabia; UTAUT2; online shopping; social media websites.

1 CHAPTER 1: INTRODUCTION

Social media is widely used all over the world, especially in Saudi Arabia. Saudis extensively use social media channels such as Facebook, Instagram, and Twitter to stay connected and updated with people, as well as to indulge in such services as education, entertainment and marketing. One of the liveliest of social media practices in the country is shopping, or social commerce. It has been transformative regarding the country's traditional gender inequality, allowing women to own businesses when this has historically been heavily restricted. Thus, the use of social media in a business market has become a solution for Saudi women to overcome such limitations as requiring a man's presence in a woman's business.

The main focus of this research study is exploring the influence of gender and information quality on the acceptance of adopting social commerce. This study employs a technology acceptance model called the Unified Theory of Acceptance and Use of Technology, or UTAUT2, to structure the factors and explore the relationships between them. The results of the study will help in understanding the adoption of social commerce among Saudi Arabians of both genders.

1.1 Background

In developing countries social media has become essential to everyday life, especially for teenagers and young adults, impacting both communication and interaction

between users and objects. Social media (SM) is defined as an Internet-based application that allows users to share their opinions, experiences and perspectives and communicate between each other (Leonardi, Huysman & Steinfield, 2013). The first social media platform, sixdegree.com, was launched in 1997 and enabled users to share and showcase life with friends and family members, as stated by Ellison (2007). Contemporary social media channels, such as Facebook, Twitter, and Instagram are not limited to solely broadcasting comments or sharing media, but also are used for marketing and advertising. Facebook, for instance, is a platform that has the potential to enhance marketing and advertising strategies and improve the interaction between retailers and consumers (Khatib, 2016).

Many brands and businesses have adopted social media for their e-commerce strategy, and it has transformed business operational frameworks from traditional methods of selling and buying products to fully electronic methods (Herring, 2004; Zekan, Cvrtak & Šerić, 2011). Social media in a business environment has vital advantages, such as decreasing labor wage, lowering marketing expenses, and eliminating IT infrastructure (Derham, Cragg & Morrish, 2011).

a) Social media usage in Saudi Arabia:

Saudi Arabia (SA) is considered an attractive country for retailers for two reasons: a young population, and a large number of social media active users. The population is around 33 million with a median age of 30.2 years (Worldometers.info, 2017), including 56% males and 44% females (Saudi Arabia Population, 2017). Sixty three percent of businesses are run by adults under the age of 36 (Samir, 2017). A wide range of SA

businesses are run through social media due to its popularity among both consumers and business operators (Abed et al., 2015). According to a PricewaterhouseCoopers (PwC) survey from 2016, 64% of Middle East consumers use Facebook and Twitter to find inspiration for purchases.

The number of Saudi social media active users is rapidly increasing due to the extensive use of smartphones (Salehan & Negahban, 2013). There are 8.86 million Saudi accounts in Facebook in 2017 (Statista), and 4.99 million accounts on Twitter in 2016 (Statista). Saudi Arabian users are the largest viewers of YouTube (Samir, 2017). The social media application Snapchat is popular, and in 2015 Snapchat stated that the country is one of its strongest markets (AlSagri & AlAboodi, 2015), SA is ranked number 2 out of 10 on a list of countries with greatest Snapchat usage (Lemon, 2015).

Additionally, SA is an attractive country for investors since it has the highest growth percent of retail market globally, the use of social media websites for online shopping is rapidly increasing (Singh, Younis, Lacklen & Sleiman, 2017), and overall it is seen as a rich opportunity for retailers to extend their businesses to reach consumers locally, nationally and throughout the world.

b) Social Commerce:

Social commerce is a subcategory of e-commerce, using social media networks (SMNs) and running on Web 2.0 for online shopping activities (Liang et al., 2011; Abed, Dwivedi & Williams, 2015; Andersen, 2007). In 2005, the user-generated content for online shopping tools was introduced as s-commerce by Yahoo! (Beisel, D., 2005). It includes collaborative tools that let consumers participate in SMNs and be influenced by

others. Allowing two-way communications between consumers has radically changed interactions via s-commerce (Huang & Benyoucef, 2013). Some social networking sites have applied the s-commerce concept through features such as a buy button and a share option as shown in Figure 1 (Ecommerce Foundation.), to meet retailer and customer desires. Related e-commerce models include Business-to-Consumer (B2C) retailers and customers, and Business-to-Business (B2B) electronic data interchange.

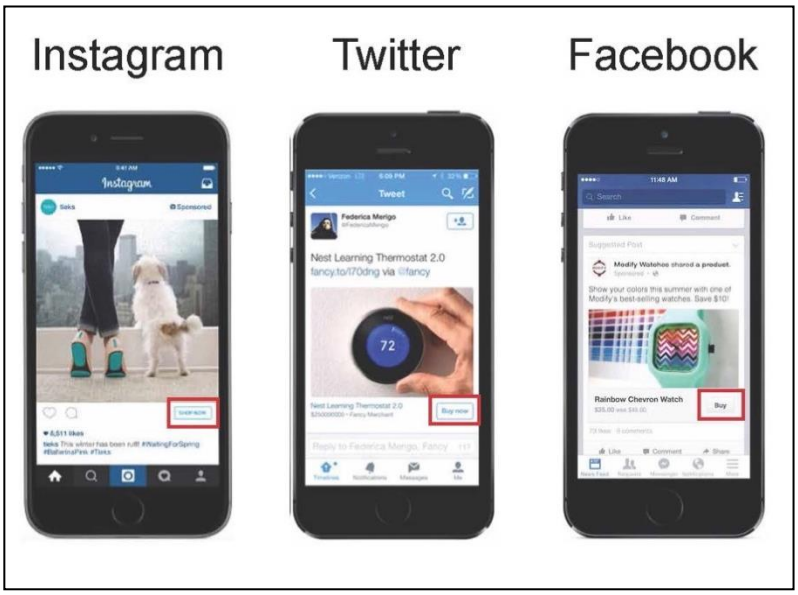


Figure 1 An Example of Social Commerce Feature Buy Button

The target audience for this thesis is Saudi e-consumers, including buyers and sellers who purchase products from social media websites using desktop computers, laptops, tablets, and smartphones. Since more than 88% of business owners consider that s-commerce can increase business' profits (Alsharif, 2013), it is understandable that Saudi Arabian users have increasingly turned to social media websites to open their own

e-businesses (Elmasry, Benni, Patel & Moore, 2016). In 2017, the estimated revenue for SA in the e-commerce market is $5,446 million (Statista Digital Market Outlook, 2017), with 12 million Saudi Arabian users using e-commerce, and the country's annual growth for e-commerce a respectable 10.7% (Statista Digital Market Outlook 2017).

In order to increase this number, the country has to provide facilities, set fine regulations to protect consumers, and ease the procedure for opening an online business. The government of SA is trying to increase the Information Communication Technology (ICT) resources by improving the communication between users, such as creating websites for government procedures. Adaptation of an electronic-based procedure over paper-based processes shortens procedures time from months to weeks, which greatly increases efficiency and costs. In 2014, the country began using ICT tools to assist opening businesses by creating a website that lets users submit their digital documents directly to the Ministry of Commerce and Investment (MCI). If the business name is approved, the procedure takes only 180 seconds.

Additionally, s-commerce is useful for Saudi retailers since most of the businesses in the country are run by Saudi citizens. Singh, Younis, Lacklen and Sleiman state that the Saudi market is comprised of 75% Saudis and 25% other nationalities (2017). "SMEs in a more information-intensive environment are more likely to adopt e-commerce technology" (Pavic, Koh, Simpson & Padmore, 2007, p. 16). In sum, e-commerce is still developing, and the technology has not been fully exploited.

The problems facing Saudi Arabian entrepreneurs starting their own businesses are even more marked for women. While Saudi women are allowed to open their own

businesses, there are many restrictions; as detailed in The Saudi Arabian Journal, women can only operate and be physically in a business location if the business is for women only (e.g. a salon, photography studio, or education center), and no man is allowed to enter. Otherwise, according to The Ministry of Commerce and Investment (MCI), the business should be managed by men (2016). Social media channels that allow small businesses, such as selling clothes, food, furniture, beauty and cosmetic products, have completely changed this paradigm.

1.2 Motivation

1.2.1 Vision 2030

Saudi Arabia is looking to grow its economy without relying on oil by encouraging new technologies that can benefit individuals and communities. The Crown Prince of Saudi Arabia, Mohammed bin Salman bin Abdulaziz, defined the transformation process as "Vision 2030" (Al-Kibsi, Woetzel, Tom Isherwood, Khan & Mischke, Noura, 2015). The country is focusing on investing in natural resources, information technology resources, business and marketing (Al-Kibsi, Woetzel, Isherwood, Khan & Mischke, Noura, 2015). IT development includes s-commerce, e-government, opportunities for small and medium sized enterprises, and improving the Internet infrastructure in urban and some rural areas. According to Abed, Dwivedi & Williams (2015), e-commerce plays a critical role in expanding local markets by offering job opportunities for unemployed users, aged 23 to 35 (2015).

Vision 2030 focuses on providing opportunities for Saudi citizens regardless of gender. Three of the commitments of Vision 2030 are: (1) increase small and medium-

sized enterprises' (SMEs) contribution to the GDP, (2) reduce unemployment, (3) and increase job opportunities for Saudi women.

For both young people and women, the focus is on establishing resources and programs to develop their job and personal skills. Unemployment in SA is projected to reduce from 11.6% to 7%. Additionally, opportunities for women to participate in jobs is projected to increase from 22% to 30% ("Thriving Economy Rewarding Opportunities," n.d.). The country hopes this will help expand entrepreneurship and enterprise opportunities, according to Vice President of Saudi Arabia Prince Salman bin Abdulaziz (2015).

1.3 Research Problem Statement

There is great potential in applying social media technology to government, community service, health and elder care, as well as business and marketing services. Thus, it is vital to investigate the factors that influence users' intentions to purchase products from social media websites as well as explore Saudi Arabian users' adoption of social commerce. There is much research work on e-commerce (Sait, Al-Tawil & Hussain, 2004; Abed, Dwivedi & Williams, 2015; Almoawi & Mahmood, 2011), but little research has been done on s-commerce, gender differences, and its potential effect on the youth. Other research has discussed social media as a tool for online shopping, but not the impact of e-commerce and its opportunities to improve the SA business market.

This research is on identifying the factors that influence the adoption of s-commerce among Saudi Arabian users. Some previous studies have focused on e-government and how s-commerce is being used theoretically, without evaluating the

factors that determine its use (Alshehri et al., 2012). This research focuses on, Sheikh et al. (2017), which proposes a framework for the adoption of s-commerce among Saudi Arabian users, which extends the previous framework by considering gender as a factor and adding the independent variable factor information quality (IQ).

1.4 Objective of the Study

The short-term goal of this research is to explore the influence of gender and the importance of information quality on users' intention to purchase products from social commerce through SMWs. The long-term goal is to improve business markets and increase the life quality of all Saudis. By examining the effect of IQ on gender, and by employing the accepted framework of s-commerce with the UTAUT2 model, I will highlight the relevant factors that affect the Saudi Arabian users' intention to buy from SMWs. Analysis of the results will help entrepreneurs, community businesses and marketing companies understand the influence of s-commerce on improving shopping for Saudis. Eventually, system engineers and entrepreneurs will be able to design their businesses on SMWs based on Saudi consumers' preferences, and an analysis of the results will provide recommendations on how to improve social media websites.

1.5 Research Questions

1. What is the influence of gender on the social commerce framework for Saudi Arabian users using social media websites (SMWs)?
2. What is the effect of information quality on Saudi Arabian users' Behavioral intention to buy products from SMWs?

1.6 Research Hypotheses

The research hypotheses are inspired by related work about UTAUT2 constructs. The 11 hypotheses investigated in the scope of this thesis on social commerce defined as online shopping through SMWs are shown in Table 1.6-1.

Table 1.6-1 Research Hypotheses

Hypotheses	Description
H1	Gender significantly affects the relationship between performance expectancy and behavioral intention in adopting social commerce.
H2	Gender significantly affects the relationship between effort expectancy and behavioral intention in adopting social commerce.
H3	Gender significantly affects the relationship between social influence and behavioral intention in adopting social commerce.
H4a	Gender significantly affects the relationship between facilitating conditions and behavioral intention in adopting social commerce.
H4b	Gender significantly affects the relationship between facilitating conditions and use behavior in adopting social commerce.
H5	Gender significantly affects the relationship between hedonic motivation and behavioral intention in adopting social commerce.
H6a	Gender significantly affects the relationship between habit and behavioral intention in adopting social commerce.
H6b	Gender significantly affects the relationship between habit and use behavior.
H7a	Gender significantly affects the relationship between price saving orientation and behavioral intention in adopting social commerce.
H7b	Gender significantly affects the relationship between price saving orientation and use behavior in adopting social commerce.
H8	Gender significantly affects the relationship between information quality and behavioral intention in adopting social commerce.
H9	Gender significantly affects the relationship between social commerce constructs and behavioral intention in adopting social commerce.
H10	Gender significantly affects the relationship between social support and behavioral intention in adopting social commerce.
H11	There is a significant relationship between information quality and behavioral intention in adopting social commerce.

Source: The list of list of hypotheses is inspired by the work of Sheikh et al. (2017)

DOCUMENT STRUCTURE

This document is structured as following (Figure 2) : Chapter 1 introduces the research background, motivations, and the proposed model. Chapter 2 presents and discusses the related work and theories. Chapter 3 defines the methodology. Chapter 4 analyzes the data and obtains results. Chapter 5 discusses the key findings of the research. Chapter 6 concludes the study, suggests future work, and illustrates research limitations. The last two chapters are an appendix and researcher bibliography.

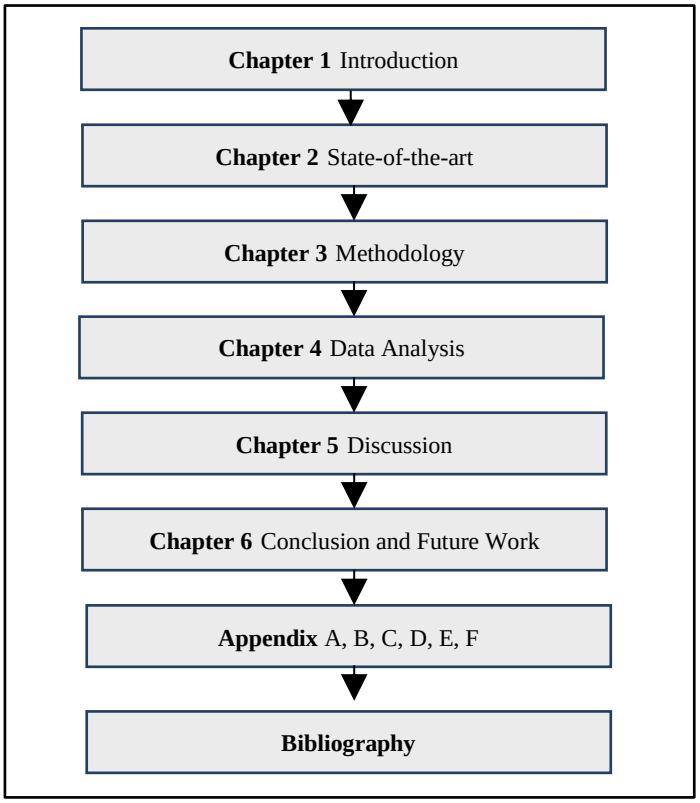


Figure 2 Document Structure

2 CHAPTER TWO: STATE-OF-THE-ART

This chapter introduces fundamental concepts, gives a background of acceptance technology theories and a social commerce prediction framework, and discusses related work on social commerce.

2.1 Fundamental Concepts of the Statistical Model

The model for this research is based on several well-known technology acceptance theories, such as the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and its sequel UTAUT2 (Venkatesh et al., 2012).

Generally, in statistical models the constructs are divided into dependent and independent variables. The study model determines the influence of independent variables on the dependent variables. Independent variables can be changed and added by the researcher to test their impact on the dependent variables, which represent the outcome whose variance is being measured in the study while the independent variables represent inputs (Wong, 2013). A moderator is considered as an assistant variable which can decrease or increase the relation between the dependent and independent variables (Little, Card, Bovaird, Preacher & Crandall, 2007).

2.1.1 Nature of Data

Data—numbers, observations, words and even descriptions of things—is usually divided into two types, qualitative and quantitative. Qualitative data contains descriptive information such as “people mostly use social media websites for online shopping”. Quantitative data, on the other hand, provides numerical information, which can be discrete (based on particular values) or continuous (unrestricted to any value). For example, “3000 Saudi Arabian Riyal (SAR) monthly income” signifies discrete data.

2.2 Theoretical Background

2.2.1 Acceptance of Technology Theories

Acceptance technology theories analyze consumer behaviors in adopting technology, such as mobile application, collaborative classrooms in high education, and social commerce (Chiemeke & Evwiekpaefe, 2011; Almoawi & Mahmood, 2011; Alam & Sayuti, 2011; Smith, Zhao & Alexander, 2013). The most critically accepted technology acceptance model is the Unified Theory of Acceptance and Use of Technology (UTAUT). Developed in 2003 by a group headed by Ventakesh, the theory uses dependent variables (performance expectancy, effort expectancy, social influence, and facilitating conditions), independent variables (behavioral intention and use behavior), and moderating variables (age, gender, experience, and voluntariness of use) to study how and why people accept or reject technology. The UTAUT model is shown in Figure 3.

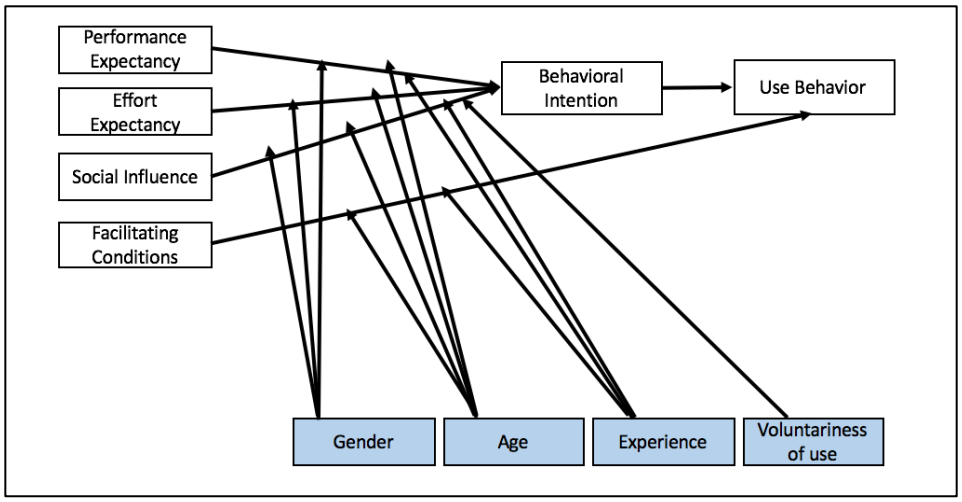


Figure 3 The UTAUT Model (Venkatesh et al., 2003)

In 2012, UTAUT was extended by adding three core constructs to examine factors associated with using technology and consumer behavior—habit, hedonic motivation, and price value, which resulted in a new theory called UTAUT2. It is a combination of eight theories as listed in (Tables 2.3-1, 2.3-2, 2.3-3). One of them is the Technology Acceptance Model (TAM), the most popular theory in information technology (Venkatesh et al., 2003), which is used to study intention and use of applications such as social media. UTAUT2 focuses on evaluating both sides, the system and the user of technology, to see how and why information technology is accepted (Ventakesh et al., 2012). In comparison, the Diffusion of Innovation (DOI) theory evaluates how technology has gradually changed and been accepted by specific populations (Huang & Kao, 2015).

UTAUT2 includes nine core constructs which are dependent variables (performance expectancy, effort expectancy, social influence, facilitating conditions,

hedonic motivation, habit, and price value), independent variables (behaviorl intention and use behavior), as well as three moderator variables (age, gender, and experience), as shown in Figure 4.

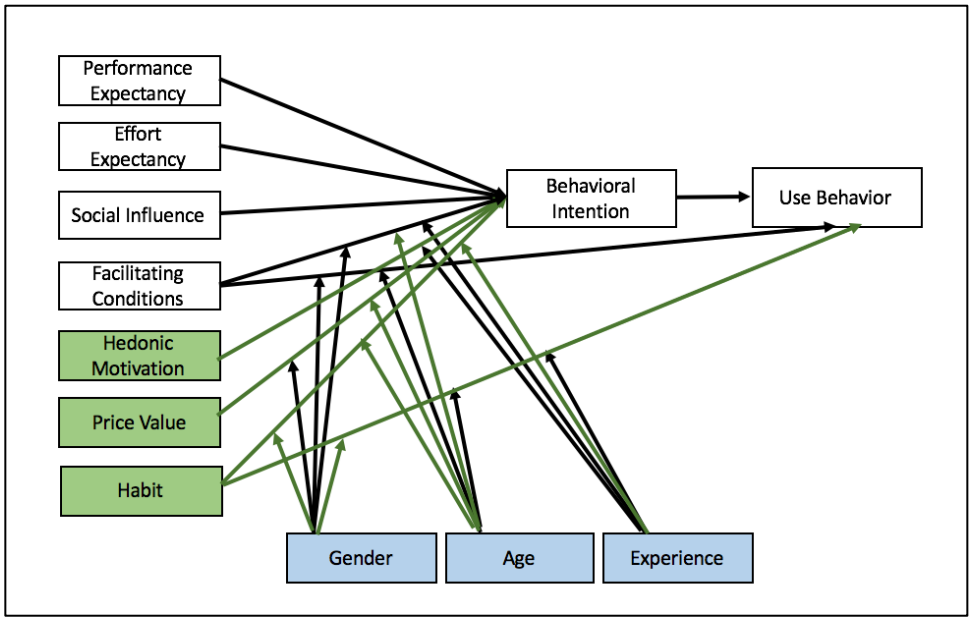


Figure 4 The UTAUT2 Model (Venkatesh et al., 2012)

UTAUT2 was chosen for this study because it describes the acceptance technology from the consumer's context, and has proven to be a reliable predictive model. Additionally, it has become the standard model in studies related to technology acceptance for many researchers (Huang & Kao, 2015; Sheikh et al., 2017, Abed et al., 2015). Some studies have used UTAUT2 to examine factors influencing online activities, such as online bank transactions, mobile communications, and social commerce (Sheikh et al., 2017). The previous research done by Sheikh, Islam, Rana, Hameed & Saeed (2017) studied the adoption of social commerce framework on the intentions of Saudi

Arabian users to buy online products, with the moderator culture including individualism/collectivism and uncertainty/avoidance as shown in Figure 5.

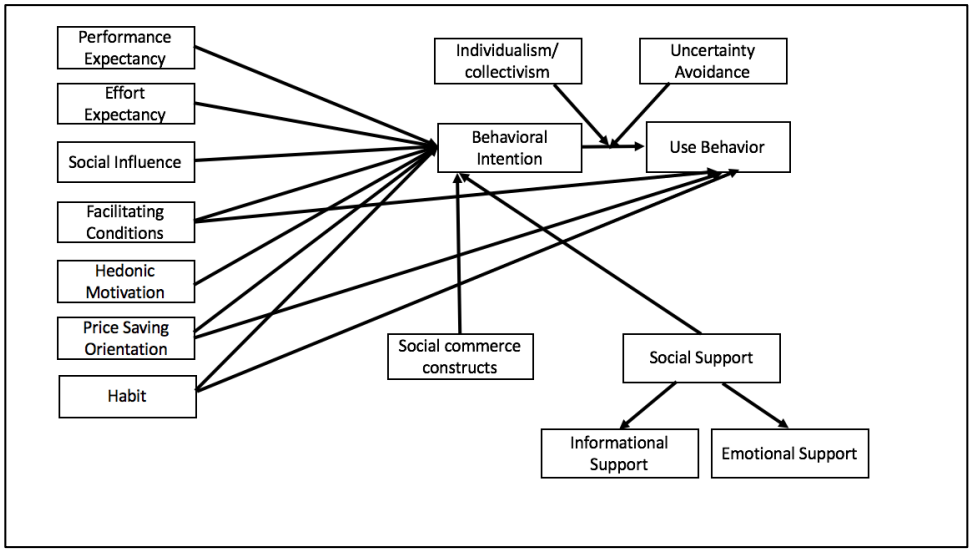


Figure 5 Acceptance framework social commerce in SA (Sheikh et al., 2017)

The proposed model for this research is shown in Figure 6 with the nine core components adopted from the UTAUT2 model (Venkatesh et al., 2012). UTAUT2 has proven to be suitable for technology acceptance theory in many fields, such as businesses, social science, and learning (Huang et al., 2015). In this research, the UTAUT2 theory was used to test the factors that influence the adoption of social commerce among Saudi Arabian users. Tables 2.3-1, 2.3-2, 2.3-3 show information technology theories in more detail. This research model was suggested to examine two influences. First, the effect of information quality on Behavioral intention with

employing the social commerce framework designed by Sheikh et al. (2017). Second, the influence of the moderator factor gender on the constructs model.

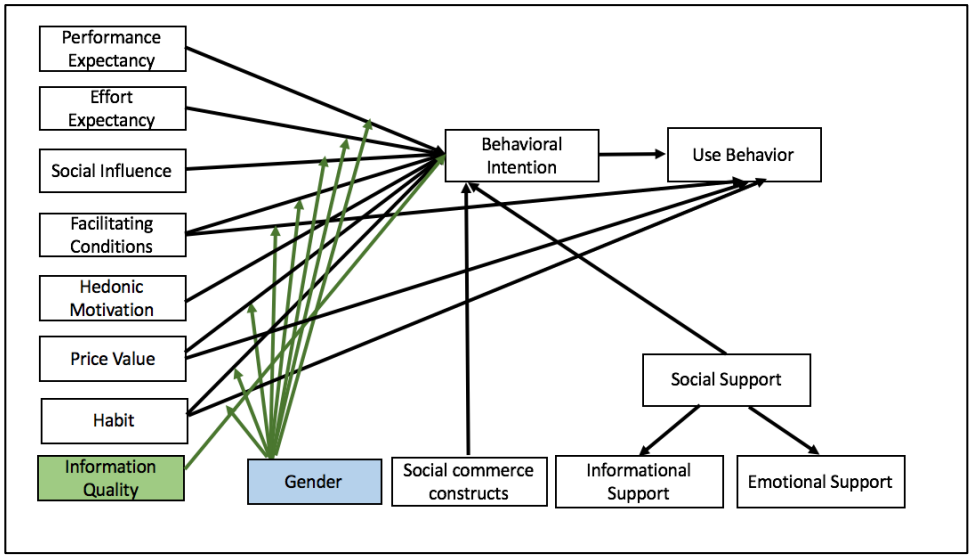


Figure 6 Research Conceptual Model

Information quality as a factor was considered in Abed, Dwivedi & Williams's 2015 study, and this thesis takes up that suggestion.

Table 2.2-1 Theories

Theory	Definition	Core Constructs	Moderators	Usage	Reference
Theory of Reasoned Action (TRA)	It was developed in 1967 by Fishbein and Ajzen, It is used to predict individuals' behavior based on their intentions and attitudes.	Attitude Subjective Norm	None	Health behavior: Sexual behavior in teenage girls Consumer behavior: Brand loyalty. Communication: Knowledge sharing in companies.	Lezin (2005)
The unified theory of acceptance of technology UTAUT	It was developed in 2003 by Venkatesh, Morris, Davis and Davis. It provides a refined view of how the determinants of intention and behavior evolve over time, and is important to emphasize that most of the key relationships in the model are moderated.	Performance expectancy Effort expectancy Social influence Facilitating conditions	Age Gender Experience Voluntariness of use	Psychology Sociology Information Support Health information system	Serben (2014) Ventakesh, Thong & Xu (2012) Kriponant (2007)
The unified theory of acceptance of technology UTAUT2	It was developed in 2012 by Venkatesh, Thong and Xu. It is a combination of eight theories: TAM, TPE, IDT, MPCU, DOI, TPB, MPCU, (C - TPB - TAM)	Performance expectancy Effort expectancy Social influence Facilitating conditions Hedonic Motivation Price value Habit	Age gender experience	Consumer behavior IS research	Williams, Rana, Dwivedi & Lal (2011) Venkatesh, Thong & Xu (2012)
Technology Acceptance Model (TAM)	It was developed in 1986 by Davis. It was designed to explore user behavior of information technology. It is the extension of TRA.	Perceived usefulness Perceived ease of use Subjective norm Attitude Behavioral intention to use Actual use	None	E-learning	Park (2009)
Technology Acceptance Model 2 (TAM 2)	It was developed in 2000 by Venkatesh and Davis. It is an extension of TAM which added three core constructs: social influence, cognitive instrumental processes, and experience.	Perceived usefulness Perceived ease of use Behavioral intention to use acceptance Actual use Social influence (subjective norm, voluntariness, image) Cognitive instrumental process (job relevance, output quality, result demonstrability) and experience.	None	Sociology IS IT	Park (2009)

Table 2.2-2 Theories (Continued)

Theory	Definition	Core Constructs	Moderators	Usage	Reference
Technology–Organization–Environment (TOE)	It was developed in 1990 by Tornatzky and Fleisher. It describes the process an organization takes to adopt technological innovations. This process is influenced by the technological context, organizational context, and the environmental context.	Technological context (available characteristics) Organizational context (size, slack, structure, communication) Environmental context (industry characteristic, technology support infrastructure, government regulation) Technological innovation context	None	Firms and organizations Education Health	Baker (2012)
Diffusion Of Innovation Theory (DOI)	It was developed in 1962 by Rogers. It explains how ideas spread through populations (or social media) over time	Relative advantage Compatibility Complexity Triability Observability	None	Communication, Agriculture, Public Health Criminal Justice, Social Work, and Marketing	Ilin, Ivetić & Simić (2017)
Theory of Planned Behavior (TPE)	It was developed in 1991 by Ajzen to predict the intention of individuals to be active in a behavior at a specific time and place, including perceived behavioral control.	Attitude Subjective Norm Perceived Behavioral Control Behavioral Intention Behavior	Experience Voluntariness	Public Health Health Behaviors, such as smoking, drinking; Health Services utilization, Breastfeeding	LaMorte (2016)
Motivational Model (MM)	It was developed in 1992 by Davis et al. to describe the behavior of technology adoption and use.	Motivation (extrinsic and Intrinsic) Attitude Subjective norm Perceived behavioral Control	None	New technology adaption and use	Venkatesh & Speier (1999)

Table 2.2-3 Theories (Continued)

Theory	Definition	Core Constructs	Moderators	Usage	Reference
Social Cognitive Theory (SCT)	It was developed in 1986 by Bandura to determine usage of information systems.	Encouragement of others Use of others Support Self-Efficacy Performance Outcome Expectations Personal Outcome Expectations Affect	None	Health education, Health behavior programs, Intervention strategies	University of Twente (2017) Doran & Neal (2014)
Combined Theory of Planned Behavior/ Technology Acceptance Model (C-TPB-TAM)	It was developed in 1995 by Taylor and Todd. It integrates advantages of TAM and TPB.	Subjective norm and perceived behavioral control	Experience	IT usage	Taylor & Todd (1995)
The Innovation Diffusion Theory (IDT)	It was developed in 1995 by Rogers to explains how innovations or technology are accepted and spread through a society	Relative advantage Compatibility Complexity Observability Triability	Experience	Education, Sociology, Communication, Agriculture, Marketing, and Information Technology	Hsieh & Hsu (2011) Wani & Ali (2015)
Model of PC Utilization (MPCU)	It was developed in 1991 by Thompson et al. It determines the behavior of people by their attitudes, social norms, and habits.	Complexity Job-fit Social Factors Affect towards use Perceived Consequences Facilitating Conditions Habits	Experience	Information Technology Usage	Sharma & Mishra (2015) Samaradiwakara & Gunawardena (2014) Venkatesh et al. (2003) Thompson et al. (1991)

2.3 Literature Review

UTAUT2 is a new theory for consumer context research, but since it was published in 2012, there has only been limited research in the social commerce field. Researchers Hajli (2015), Abed et al. (2015), and Hajli (2012) have done work to understand factors that influence the acceptance of social commerce. A literature review shows that most of the studies which addressed adoption of social commerce utilizing acceptance technology theory used a quantitative approach through questionnaires (Sheikh et al., 2017; Abed et al., 2015; Hajli, 2012, 2013).

Many studies discussed the social commerce aspect and a user's acceptance of technology using acceptance theories, such as UTAUT, UTAUT2, TAM, TOE, and C-TPB-TAM, as listed in Tables 2.3-1, 2.3-2, 2.3-3. The studies reviewed were largely divided between using TAM theory (Hajli, 2012; Hajli, 2015) and UTAUT2 (Abed et al., 2015; Sheikh et al., 2017). There are limited studies combining social commerce constructs with UTAUT2 core constructs. The study by Sheikh et al. (2017) added this factor to the UTAUT2 theory while Hajli (2013) addressed the social commerce constructs using the TAM theory to give the frame of social commerce.

Hajli's 2012 model added the factors trust and perceived usefulness. The key findings of his research are that these two factors are important in increasing a user's intention to buy from s-commerce. His 2013 work focused on social commerce adoption, the influence of the trust factor and the social commerce construct on users' intention to buy from s-commerce. The social commerce components addressed are: referrals and recommendations, forums and communities, and rating and reviews. However, the study

did not address social support as a factor along with s-commerce framework. The methodology used in this study was a survey, and the data was analyzed with the Partially Least Square Structural Equation Modeling (PLS-SEM), technique. The study results indicate that trust and social commerce constructs have a significant influence on users' intention to adopt s-commerce (Hajli, 2015).

As Sheikh, Islam, Rana, Hameed, and Saeed's 2017 study, addressed the social commerce topic with adding the social commerce constructs and social support factors to the UTAUT2 theory. Their target population was Saudi Arabia university students, and their data was analyzed using Structural Equation Modeling (SEM). Their study indicated that the price saving orientation concept is vital in motivating consumers to purchase from Social Media Websites (SMWs).

Abed, Dwivedi & Williams's 2015 study, also applied the UTAUT2 also to a target population of Saudi Arabia university students. They added several constructs to their conceptual model, such as perceived risk, trust, privacy, innovativeness and information quality and excluded the moderating affect. They used on-line survey to gather data from Saudi Arabian consumers, and applied SEM technique to analyze the survey data. However, they excluded the moderating factors age, gender, and experience.

A 2011 study by Alam and Sayuti, investigated the halal food purchasing intention by using the Theory of Planned Behavior (TPB) theory. A 2012 study by Alshehri et al. discussed using the UTAUT model to determine factors affecting acceptance and use of e-government services in SA. Alshehri et al. (2012), showed that social influence (SI) statistically has insignificant influence on a user's intention to adopt

e-government. Tables 2.4-1, 2.4-2 show the related work and the theories used in the studies.

2.3.1 Information Quality (IQ)

Information Quality (IQ) is defined as the "consumers' general perception of the accuracy and completeness of Website information as it relates to products and transactions" (Kim et al., 2008). The importance of IQ was conceptually assessed in a 2015 study done by Nisha, Iqbal, Rifat & Idrish, that focuses on mobile health care services in Bangladesh. The study suggested using the UTAUT model to explore the influence of the constructs on an user's intentions for mobile health services. The author highlights that IQ plays an important role in use intention for health service. Similarly, the conceptual study done by Abed et al. in 2015 stresses the importance of IQ in increasing an user's intention to adopt s-commerce. "The quality of the information produced by social commerce platforms has an influence on consumers' purchasing intention or behavior." (Nisha et al., 2015).

The external factor information quality, which was added to the model of this study was carefully selected from Abed, Dwivedi & Williams's (2015) study. The information quality was identified as one of the key factors in s-commerce (Kim & Park, 2013), and was selected for a 2011 study by Almoawi and Mahmood because IQ can affect the adoption of e-commerce. The information is necessary to provide more description on the products and reduce ambiguity. "The more complex the product is, the more information is required to describe the product and service of the firms" (Malone, Yates & Benjamin, 1987, p. 16). The study found that the quality of online information

affects consumers' adoption (Abed et al., 2015). In sum, innovative businesses look for consumers who are willing to accept new technology, like the society of Saudi Arabia.

Table 2.3-1 Research Themes Emergent from the Literature Review

Theory	Study Title	Key Findings	Reference
UTAUT2	Social Commerce Adoption by Saudi Consumers: A Conceptual Model	Information quality plays an important role in influencing users' intention to adopt s-commerce.	Abed et al. (2015)
TPB	E-Commerce in Saudi Arabia: Adoption and Perspectives	Gender plays an important role in KSA which may influence e-commerce adoption.	Sait, Al-Tawil & Hussain (2004)
TAM	Social Commerce Constructs and Consumer's Intention to Buy	Trust and perceived usefulness are an important factor to increase user's intention to buy from s-commerce.	Hajli (2015)
UTAUT2	Acceptance of Social Commerce Framework in Saudi Arabia	Facilitating conditions, habit, and behavioral intention have a significant relationship with the use behavior.	Sheikh, Islam, Rana, Hameed & Saeed (2017)

Source: Developed for the research

2.4 Shortcomings

The literature review indicates that the focus up to now of researchers in studying technology acceptance has been on investigating factors that influence the user's intention to adopt s-commerce technology in different fields, such as education, health and business. However, a few studies (Sheikh et al., 2017; Abed et al., 2015) have applied the UTAUT2 model for social commerce and have focused on the SA population. The study by Abed et al. (2015) focuses on what factors influence the adoption of s-commerce; but, it covered neither social support nor social commerce constructs.

Considering such previous limitations, this thesis aims to add a new external factor to the UTAUT2 model, information quality, and used the moderating factor of gender as well. This follows the recommendations of earlier researchers who have indicated that gender, age, and culture, impact s-commerce (Sheikh et al., 2017).

Table 2.4-1 Related Studies with Theories Used, Factors Applied and Limitations

Theory	Study Title	Features	Country	Reference
TOE	Applying the OTE Model in Determining the e-commerce Adoption on SMEs In Saudi Arabia	Organization Technology Environment	Saudi Arabia	Almoawi & Mahmood (2011)
UTAUT	A Conceptual Framework of a Modified Unified Theory of Acceptance and Use of Technology UTAUT Model with Nigerian Factors in E-Commerce Adoption	Performance Expectancy Effort Expectancy Social Influence Facilitating Conditions	Nigerian	Chiemeke & Evwiekpaefe (2011)
TAM	Social Commerce Adoption Model A Research Framework for Social Commerce Adoption	Intention to Buy, Trust Perceived Usefulness Rating & Reviews Forums & Communities Recommendations & Referrals	UK	Hajli (2012) Hajli (2013)
TPB	Applying the Theory of Planned Behavior (TPB) in halal food purchasing	Attitude Subjective Norm Perceived Behavioral Control	Turkey	Alam & Sayuti (2011)
TPB	Social Commerce from a Theory of Planned Behavior Paradigm: An Analysis of Purchase Intention	Attitudes, Subjective Norm Perceived Control Behavior		Smith, Zhao & Alexander (2013)
UTAUT	The Examination of Factors Influencing Social Media Usage by African American Small Business Owners Using The UTAUT Model	Performance Expectancy Effort Expectancy Social Influence Facilitating Conditions	African American	Serben (2014)
UTAUT2	Social Commerce Adoption by Saudi Consumers: A Conceptual Model	Performance Expectancy Effort Expectancy Social Influence Facilitating Conditions, Trust Hedonic motivation Price value Perceived Risk Consumers' Innovativeness Information Quality Behavioral Intention	Saudi Arabia	Abed et al. (2015)
UTAUT2	Acceptance of Social Commerce Framework in Saudi Arabia	Performance Expectancy Hedonic motivation Habit, Price saving orientation, Social support Social commerce constructs Behavioral Intention. Moderator: culture	Saudi Arabia	Sheikh et al. (2017)

Source: Developed for the research

3 CHAPTER THREE: METHODOLOGY

This chapter is divided into two sections, research method and data analysis. The first section explains analysis methods, sample of study, sampling technique, research instruments, survey design, data collection procedure, pilot study, and constructs measurements. The second section provides details about descriptive analysis, scale measurement, structural equation modeling (SEM), and model specification.

3.1 Research Method

Given the objective of research as defined in Chapter 1, a quantitative methodology was used to focus on the effect of adding to a study of social commerce two factors: information quality and gender, and their relationships between constructs for Saudi consumers. The online survey research method was used to collect research data because of its advantages, such as flexibility, ease of use, and acceptability to specific populations (Wright, 2005). Moreover, the method was used in previous studies as a suitable method for reaching a population in a short period of time (Hajli, 2015; Hajli, 2012; Kuan, Ann, Badri, Freida & Tang, 2014).

Figure 7 structures the methodology procedure in 9 main steps: (1) review related work, (2) analyze the current social commerce environment, (3) design the survey, (4) request Institutional Review Board (IRB) approval, (5) apply pilot study, review the

survey by peer reviewers and a linguist reviewer, (6) distribute data (7) collect data, (8) analyze data, and (9) suggest implementations.

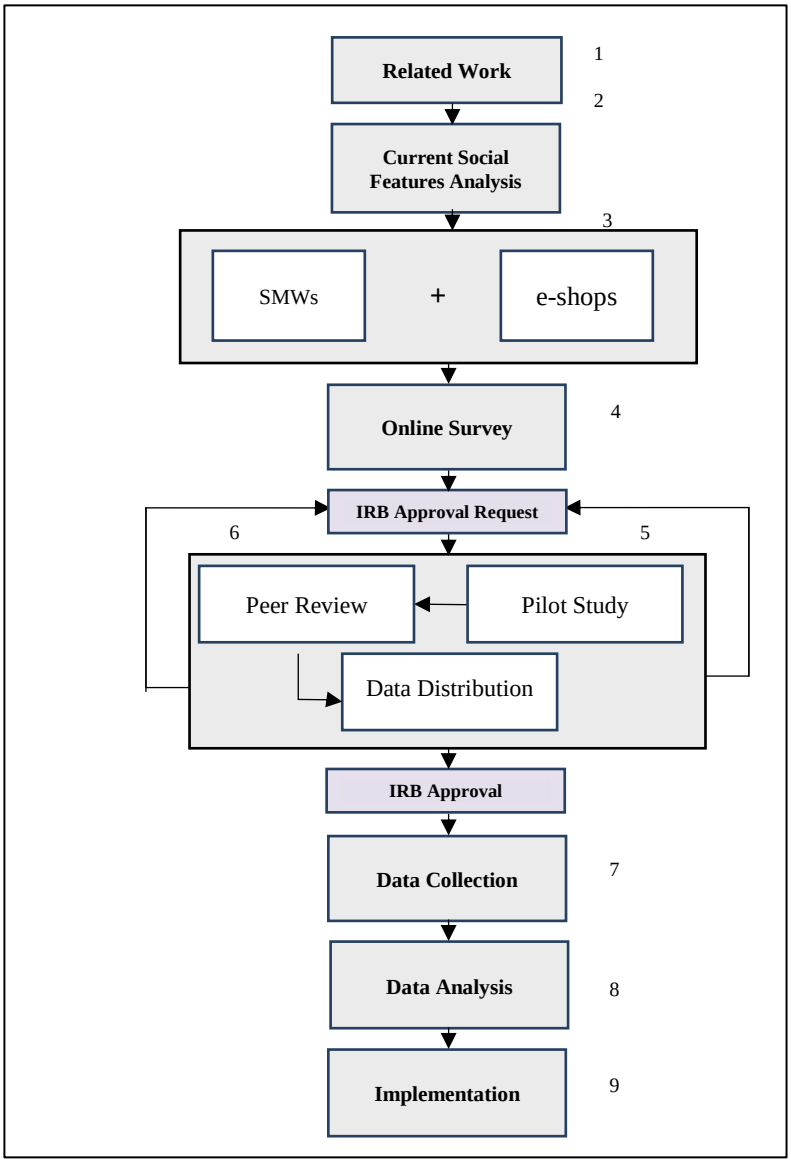


Figure 7 Research Method Procedure

3.1.1 Analysis of Existing e-shops

To better understand the social commerce environment two approaches were used: (1) explore nine e-shops visited by Saudi Arabian users, (2) explore five SMWs to discover some of the social features as shown in Table 3.1-2.

1) E-commerce Shops

The purpose of this investigation is to discover the current e-commerce features implemented in retailers' websites or e-shops in SMWs. For example, the top three e-shops for clothing visited by Saudi users are: Namshi.com, Jollychic.com, and Asos.com (SimilarWeb, 2017). Reviewing these e-shops showed limitations of the current services provided by retailers, such as limited payment and delivery options. The investigation also illustrates the type of information posted in these platforms and how it is presented. For example, the description of the product was posted as a text, while the product's pictures were presented as a video. The information about this investigation is in Table 3.1-1.

2) Social Media Websites Social Features

The most popular social media applications used in SA are Facebook, YouTube, Twitter, and Snapchat. In 2016, the statistical results showed the percentage of Saudi Arabian users who have accounts in these applications are: Facebook (58%), YouTube (56%), Twitter (38%), and Snapchat (27%) (Statista; YouGov). The researcher explored SMWs (e.g. Facebook, Twitter, Instagram, WhatsApp, and Snapchat) which offer social features, such as comments, like buttons, and share as a buyer and seller. These results encouraged the researcher to explore the motivations behind the extensive use of SM, especially discovering the social features, those features that are implemented in

platforms which enable users to share information between each other (Curty & Zhang, 2013).

Safko (2010) proved that in an online shopping context, social factors are needed to better motivate consumers to use the platform, such as price, refund policy, convenience, security, brands, search engines and sales promotions. Some of the social commerce features discovered include: rate, comment, follow, like, and share (as also stated by Baghdadi (2016), Hajli (2015), and Safko (2010). Theses social features are listed in Table 3.1-2.

The researcher used Autoethnography, or research using self-reflection and personal experience, to annotate the current s-commerce technology offered by Facebook, Instagram, Twitter, and Snapchat. This technique included creating business accounts in Facebook, Instagram and Twitter.

3.1.2 Sample of Study

For research purposes, it is pre-required to clearly delineate the target population of a study. A good sample helps reach statistically valid and unbiased results. The target population of end users was Saudi online users regardless of their location. There was no restriction on geographic regions within Saudi Arabia. The participants were 18 and older. Additionally, the study targeted users with at least fundamental skills using technical devices such as desktops, laptops, and smartphones. Based on the recommendations of Hinkin (1995), the sample size was 300.

Table 3.1-1 Top e-shops visited by Saudi Arabian users

Products	E-commerce	Content Type	Feature	SM Channels	Delivery Options and Returns Policies	Payment Options
Clothing	Namshi.com	Text, horizontal bar for displaying cloths Item details in list Model details Color option	Multiple pictures Similar products Frequently bought Products come together Live chat	Instagram Facebook Twitter	Variety of delivery offers 14 days return exchanges 6-9 days delivery	cash on Delivery (COD) Credit card
	Jollychic.com	Grid icon for listing cloths Item details in table Size guide Color option	Pop up offer message sale Offers count down timer Reviews Average rating Like icon Live chat	Instagram Facebook Twitter Snapchat	Shipping tip instructions Good delivery offers 9 day exchanges 5-7 days delivery	COD Credit card
	Asos.com	Visual category based on seasons Pictures Video Item details Model details	Notification alert Suggestions Buy the look Availability scale Size guide	Facebook	Cheap delivery charges No restriction on how many days for returns	No COD, support all electronic payments
Consumer Electronics	Apple.com	Image and text category Item details Supportive links	Color option Zoom in/out Compare models	Facebook Twitter	No online shopping	all electronic payments
	Samsung.com	Image and text category Item details Icons	Live chat Color option Zoom in/out Compare Recently viewed Supportive documents	Instagram Facebook Twitter	Buy online and in store	all electronic payments
	Hp.com	Image and text category Item details supportive links Video	Zoom in/out Many pictures Live chat Compare models Pop up satisfaction question	Facebook Twitter	No online shopping	all electronic payments
Food and Grocery Retailer	بقالة أونلاين	Image and text category Price Quantity	One image only One category for the items	None	1 day for return or exchange 30 min-3 hours delivery affordable delivery cost	COD credit card
	Bakala	Image and text category Price Quantity	Food category One image only per item	None	1 day for return or exchange 30 min-5 hours delivery affordable delivery cost	COD credit card
	Danube الدانوب	Image Item details Price Quantity	Rating Suggestions Popular search City promotions	Instagram Facebook Twitter	Store pick up home delivery	COD credit card

Source: Developed for the research

Table 3.1-2 SMWs and social features

SMN	Device	Platform	Type	Social Feature	Reference
Facebook	Laptop Smartphone	iOS, Android	e-commerce e-advertising[1]	Shop Button Online Payment Share button Like button Buy button Comments	Hajli (2015) Safko (2010)
Twitter	Laptop Smartphone	iOS, Android	e-advertising	Share button Comments Tag	Baghdadi (2016)
Instagram	Laptop Smartphone	iOS, Android	e-advertising	Share button Like button Comments Views Business account (Contact number and direct email) Follow	Baghdadi (2016)
WhatsApp	Laptop Smartphone	iOS, Android	e-advertising	Business profile (Contact number and direct email, images, map)	WhatsApp blog (2017)
Snapchat	Smartphone	iOS, Android	e-commerce e-advertising	Snapcash (square)[2] Business account (Contact number and direct email)	Snapchat (2017)

Source: Developed for the research

This sample size was deemed acceptable by using the following formula for power analysis: the sample size was subjected to the rule of thumb 10 cases to each parameter, according to Raykov & Marcoulides (2006) and Ullman (2001). By applying the rule 10*14 variables the sample size should be 140 at minimum. Thus, the sample size fulfilled the requirement of Structural Equation Modeling in using the SmartPLS

[1] e-advertising: It is a marketing strategy that uses Internet to advertise services or products. For example, WhatsApp currently is used as an e-advertising which allows retailers to open business accounts without enabling selling and buying products from the application.

[2] Snapcash: a feature implemented in Snapchat application which allows users to send money using Square Cash.

software tool. Another rule of thumb in applying multi-grouping modeling is 100 observations per group as identified by Kline (2005).

3.1.3 Sampling Technique

The researcher used one sampling method, the Stratified Random Sampling (SRS), which helps select relevant respondents from different subgroups. The sample size was divided into two groups based on gender. This research sample was selected from Saudi Arabian participants, voluntary clubs, universities, students and faculties. This sampling technique is preferred for three reasons. First, it offers greater precision compared to simple random sampling. Second, it guarantees better coverage of the population. Third, it reduces time and costs. The users were online consumers (buyers, sellers, and both). Table 3.1-3 shows examples of personas for three participants.

Table 3.1-3 Three Personas

	P1	**P2**	**P3**
Age	40	23	61
Gender	Female	Female	Male
Level of Education	Bachelor	Bachelor	Master
Occupation	Employed in a government job	Self employed	Retired
Preferred online shopping method	All	Social Media websites	Social Media websites
Consumer Type	Seller	Both	Buyer

Source: Developed for the research

3.1.4 Research Instruments

The online survey for this study had 28 questions structured into three sections: (1) demographic factors, (2) application use, and (3) model's constructs questions (for

questionnaire refer to Appendix A). The first section asked the user for demographic information (email, name, age, gender, nationality, level of education, occupation status, and monthly income). In the second section, the questions focused on the advantages of using social media websites for purchasing products, and whether the user preferred SMWs for searching, buying or selling products online.

The third section asked questions adopted from Sheikh et al. (2017) to analyze the influence on the adoption of social commerce among Saudi users. The SMWs considered in the survey were Facebook, Instagram, Snapchat, Twitter, and WhatsApp, chosen for the social features discussed in Chapter 1. At the time of the research (2017), these were the most popular social media websites in SA (Socialbakers; SimilarWeb, 2017).

3.1.5 Survey Design

The design of the survey asked participants to answer closed-ended questions. In section one and two of the survey, the questions were designed with multiple choice options. In section three, the participants answered the questions using 5-point Likert scale options (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). The questions were written in both English and Arabic to reach more participants. The study questionnaire targeted Saudi Arabian users only to gather their feedback on the use of social media websites to purchase items or advertise products.

The survey was designed using Google Forms, chosen for its mobile-friendly interface and ease of use in both completing the survey and extracting data (Agarwal, 2014). It was also chosen to increase the likelihood of gaining perspectives from Saudi

Arabian users. After this study was approved by the Institutional Review Board (IRB) under the number #1128808-1, the survey link was distributed for 19 days, from October 24-31, 2017 and from November 23 to December 03, 2017 via social media applications, such as Snapchat, Instagram, Twitter, and WhatsApp.

3.1.6 Data Collection Procedure

Though there was no restriction on geographic regions of Saudi Arabia, the survey link was initially distributed to the central region Riyadh, the Western region Jeddah, and the Eastern Region Al-Khobar because these cities are where the top six universities are located. The participants within and outside of Saudi Arabia could access the survey link in three ways: scanning the Quick Response code (QR code) from a recruitment poster, typing the URL of the survey from a recruitment poster, or clicking on an electronic link sent via one of the social media platforms or from an email (refer to Appendix C & E).

After reading the informed consent form on the initial screen, the participants were asked to give their identifying information, such as name and e-mail address, ensuring interaction was with humans and not machines and also allowing the researcher to contact the participants for a follow-up study.

3.1.7 Pilot Study

A pilot version of the survey was tested with five GMU students at different levels in their education, including Bachelor's, Master's, and Doctorate level, majoring in Applied Information Technology, Biomedical Engineering, Systems Engineering, Health and Accounting. Since the questionnaire was designed in both English and Arabic, the

survey was reviewed by an Arabic linguist to ensure no confusion or loss of meaning occurred in the translation process and to ensure that no bias occurs in the data collection. For testing the survey and assessing its flow, two of the peer reviewers were human-computer interaction (HCI) experts, who checked the flow and clarity of the questionnaire before it was distributed to the participants. The survey link was tested on laptops and smartphones for both operating systems, Android and iOS, and the survey required about 10 to 15 minutes to complete. After the pilot survey was conducted minor modifications were made based on user's feedback, giving examples of SMWs, and rephrasing some questions.

3.1.8 Constructs Measurements

Section three in the survey has the constructs of the proposed model which illustrates 37 items adapted from Venkatesh et al., 2012; Abed et al., 2015; Molnar, Weerakkody, El-Haddadeh, Lee & Irani, 2013; and Sheikh et al., 2017. Table 6.4-1, 6.4-2 (refer to Appendix D) illustrate the 13 constructs and 37 items. For descriptive statistics, the UTAUT2 items were measured on a 5-point Likert scale, previously proved by Finstad (2010) an appropriate scale for online surveys to achieve accurate results. The details and description of variables are given in Table 3.2-1.

3.2 Data Analysis

The researcher analyzed the data using the Partial Least Squares Structural Equation Modeling approach, using Statistical Package for the Social Sciences SPSS 20.0 and SmartPLS (v.3.2.7). The descriptive statistical analysis, measurements of scale and Structural Equation Modeling are presented in Chapter 4.

Table 3.2-1 Details and descriptions of all variables

Variable		Notation	Reference	Scale
Dependent Variables	Behavioral Intention	BI	Sheikh et al. (2017)	1= Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree
	Use Behavior	UB		1 = Never 2 = Rarely 3 = Often 4 = Sometimes 5 = Always
Independent Variables	Performance Expectancy	PE	Sheikh et al. (2017)	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree
	Effort Expectancy	EE		
	Social Influence	SI		
	Facilitating Conditions	FC		
	Hedonic Motivation	HM		
	Price Saving Orientation	PSO		
	Habit	HT		
	Information Quality	IQ	Abed et al. (2015)	
	Social Commerce Constructs	SCC	Sheikh et al. (2017)	
	Social Support	SS		
	Emotional Support	ES		
	Informational Support	IS		
Moderator	Gender	Gender	Saijo, Otake & Namatame (2017)	1= Female 0= Male

3.2.1 Descriptive Analysis

The demographic profile of respondents was analyzed through percentages using SPSS and presented in tables and charts. The study survey was randomly distributed among participants from different genders, backgrounds, education level, occupation statuses and monthly income.

Moreover, mean and standard deviation of every construct presented in questionnaire were calculated and presented in Table 4.5-1.

3.2.2 Scale Measurement

To meet the assumptions of Structural Equation Modeling (SEM), reliability and tests were conducted. The Cronbach's Alpha test was used to evaluate the reliability of variables for all the varabiles (Table 3.2-2). Hair et al., (1998) argue that if the value of Cronbach's Alpha test is higher than 0.7, then it means that the variables are reliable (Table 4.5-1).

Table 3.2-2 Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.941	.942	37

Additionally, Harman's single factor test was performed to detect the Common Method Bias (CMB) problem in data collection (Podsakoff, MacKenzie & Podsakoff, 2012). To conduct Harman's single factor test, all items are loaded as one common factor. If the total variance for a single factor is less than 50%, it indicates that Common Method Bias (CMB) is not a problem for the data set (Podsakoff et al., 2012).

3.2.3 Structural Equation Modeling (SEM)

In social science, the SEM is well known for its ability to impute relationships between unobserved constructs (latent variables) and observable variables (Ylitalo, 2009). The SEM is used to analyze two types of models (the measurement model and the

structural model) (refer to Table 3.2-4). There are two main types of SEM. The first one is Variance Based Structural Equation Modeling (VB-SEM), also known as Partial Least Square Structural Equation Modeling (PLS-SEM). The second is Covariance Based Structural Equation Modeling (CB-SEM). VB-SEM is exploratory in nature and used to predict or develop theory whereas CB-SEM is confirmatory in nature and used to test any theory or to compare theories (Hair et al., 2011). PLS-SEM and CB-SEM can be used to test the hypotheses (Hair et al., 2011). This research selected PLS-SEM to maintain parsimony in the proposed model and to test the research hypotheses.

The researcher chose the SmartPLS (v.3.2.7) software to analyze the data and test the influence of the constructs on the adoption of social commerce by Saudi Arabian users, as well as to determine the relationships between the instruments. The reason behind selection of this software is three-fold. First, it is most appropriate for PLS-SEM (Hair et al., 2011) and it has been employed in research on behavior science (Bass, Avolio, Jung & Berson, 2003). Second, it is beneficial for the research and has been approved by the researchers Hair et al. (2011) and Ylitalo (2009). Third, it helps to analyze goodness-of-fit measures and offers flexibility to analyze various linear models (Garson, 2009). The proposed research model which was developed in SmartPLS 3 for empirical estimates is presented in Figure 8.

3.2.4 Model Specification

The model proposed in this thesis was specified by the previous work done in this field as discussed in Chapter 2. In the specification step, the factors in a model should be specified from previous studies. According to Venkatesh et al. (2012), the UTAUT model

can be extended by adding other factors and tested among different population to better understand adoption technology among different population. The studies conducted by Sheikh et al. (2017) and Abed et al. (2015) highlighted the acceptance framework of the adoption of social commerce among Saudi Arabian users and recommended to test the models with other external factors, such as information quality and moderator factors, such as gender, age, and experience. This study extends the framework suggested by Sheikh et al. (2017) and adds the information quality factor which was conceptually suggested in a study by Abed et al. (2015). This research study is aimed to investigate the impact of adding the information quality factor and the moderator factor gender.

The construction of variables in the SmartPLS employes gemetric formats for notation of concepts. For instance, oval is used for latent variables, circle is used for interaction of moderator, the observed variables are represented by rectangular and arrows are used to determine the path coefficients.

The Table 3.2-3 provides a summary of shapes and their meaning. It is pertinent to mention that SEM is divided into two parts: measurement model and structural model. The former connects measured variables to latent variables and the later connects the latent variables to each other. Table 3.2-4 describes the difference between two parts of SEM.

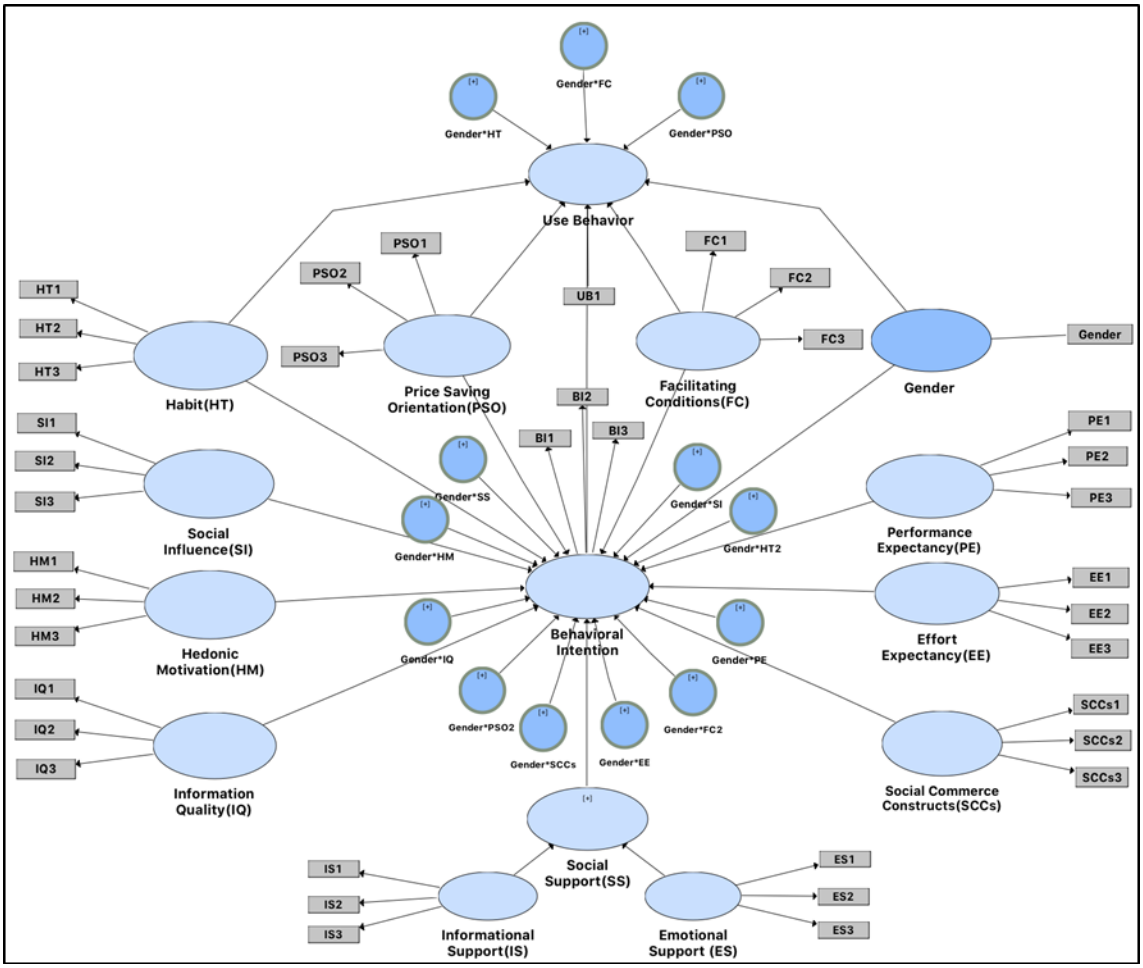
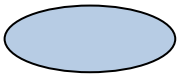


Figure 8 The Proposed Model

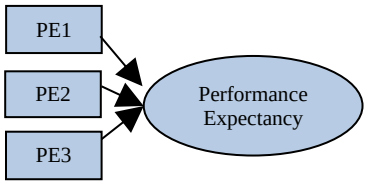
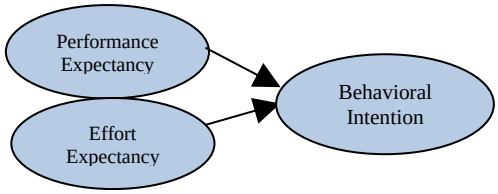
SmartPLS helps to investigate the relationship between two dependent variables (Behavioral intention and use behavior), one moderator (gender), twelve independent variables (performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price saving orientation, habit and information quality, social support (Emotional support and Informational support), social commerce constructs). SmartPLS is easy to learn and offers flexibility to examine various linear models (Garson, 2009).

Table 3.2-3 SmartPLS Diagrams Elements and Meaning

Shape	Name	Definition
	Measured Latent variable	It is known as a construct or a factor which is not measured directly in a study. • Independent Variable: It is assumed to be external to the model, such as performance expectancy. • Dependent Variable: It is predicted by other variables in the model and has a directed arrow entering into them, such as Behavioral intention.
	Observed variable (item)	It which is known as indicators which is measured directly in a study, such as PE1.
	Path (regression path)	It is the link between variables
	Interaction moderator	It moderates the impact of the independent variables on dependent variables either increase or decrease.

Source: Developed for the research

Table 3.2-4 Examples of the Two Approaches in SEM

Measurement Model (Outer Model)	Structural Model (Inner Model)
	

Source: Developed for the research

It is worth mentioning that PLS-SEM does not require assumption of data distribution and large sample size; rather it is most appropriate for moderate sample size as 300 (Henseler, Ringle & Sinkovics, 2009; Hair et al., 2011). The following procedure was followed to perform PLS-SEM.

1. Confirmatory factor analysis (CFA) was conducted to provide the evidence of sufficient construct validity. It was also used to test the goodness of research model (Hair et al., 1998). To perform CFA, first, the model was specified to analyze whether gender affects the Behavioral intention to adopt social commerce. Second, it was ensured that proposed model met the criteria for identifying causal relationship among variables. Hair et al. (1998) state that there must be substantial association among variables and logical justification for that association.
2. The test for goodness-of-fit (GoF) was conducted. Tenenhaus, Vinzi, Chatelin and Lauro (2005) describe that GoF is a universally accepted measure of goodness of fit. Its calculation considers average of R^2, which gives results about the goodness of fit of a model, and Average Variance Extracted (AVE) of dependent variables. GoF considers both measurement and structural models to analyze the suitability of the model (Henseler & Sarstedt, 2013). Goodness of fit is measured in SmartPLS using the following formula

$$GoF = \sqrt{(\overline{R^2} * \overline{AVE})}$$

3. Path analysis was performed to examine the relationship among latent and observed variables. Path analysis is an extension of multiple regression. It provides regression estimates and value of significance to test the hypothesized causal association among the set of variables studied in the model.
4. Finally, multi-group analysis was performed to analyze and test the multi-group hypotheses that Behavioral intention and use behavior can be affected by gender. This analysis works with structural model non-constraints. It provides chi-square values

which help to analyze whether two models are different based on group. The level of factor significance checked using *p*-value if it is less than 0.05 for 95% confidence interval or less than 0.01 for 90% confidence interval (Satorra, 2002).

3.3 Conclusion

This chapter presents a discussion about the research methodology, data profile, sampling technique, data collection procedure and construct measures. Moreover, the data analysis methods selected were described in detail. The results based on data analysis are presented in the Chapter 4.

4 CHAPTER FOUR: DATA ANALYSIS

This chapter provides the results of the data analysis, beginning with the demographic profile of the respondents. Next, the results of common method bias (CMB)[3], which refers to any bias in the dataset from the online survey method, are given. Then, the results of measurement scale are discussed in detail including: measure of central tendency, factor loadings, Cronbach's Alpha test (CA), Composite reliability (CR), and Average Variance Extracted (AVE). Finally, the hypotheses testing results are provided.

The researcher employed Partial Least Square (PLS), an optimization method to evaluate the proposed research model and predict outcomes (Henseler et al., 2009). PLS is a multivariate technique used to analyze structural models. It minimizes the residual variance of the entire model constructs. Chin (1998) highlights that PLS does not require parametric conditions. To test its coefficients significance, PLS-SEM runs on a nonparametric bootstrap, and combines confirmatory factor analysis and regressions estimates. Additionally, the PLS-SEM is applicable for constructs that have less than one item—in our case the factor UB with one item (Tabachnick & Fidell, 2007). The researcher used SmartPLS (v.3.2.7) software to perform the analysis.

4.1 Research Results

[3] "variance attributable to the measurement method rather than to the construct of interest intended to be assessed by the measures." (Campbell & Fiske, 1959)

4.1.1 Descriptive Analysis Results

This section describes the demographic profile of respondents. There were 453 participants collected from the survey. The data cleaning procedure was done for three purposes: checking completion of record, deleting users' identifiable columns, and deleting Arabic letters. After cleaning the data using SPSS and Excel spreadsheet, 12 incomplete records and 141 recorders were deleted to balance the population sample by gender. This resulted in 300 records, 150 Male and 150 Female. The demographic results of respondents are shown in Table 4.1-1.

A majority of participants were young adults between 18 to 35. The mean of participants' age was 28.9 years. Among total respondents, 61.3% had Bachelor's degrees whereas only 19.3% had Master's degrees. The occupation results showed that 35.3% were students at top universities in Saudi Arabia, 21.3 % were employed in a government job, 16.7% were engaged in private jobs, 19.6% were unemployed, 3.7 % were freelancers, and 2.3% were retired. These results indicate that most of the respondents were young.

Calculation of monthly income indicated that among all participants, 40.7% were earning more than 7000 SAR ($1866.54) monthly. In contrast, only 19.3% of total participants were earning 3001-5000 SAR ($800-$1333) monthly.

Table 4.1-1 Demographic profile of respondents (n=300)

Items	Category	Frequency	Percentage (%)
Gender	Male	150	50
	Female	150	50
Total		300	100
Age	18-35	223	74.3
	36-55	68	22.7
	>55	9	3.0
Total		300	100
Level of education	High school	39	13.0
	Bachelor's degree	184	61.3
	Master's degree	58	19.3
	PhD	11	3.7
	Other	8	2.7
Total		300	100
Occupation Status	Unemployed	59	19.7
	Employed in a private job	50	16.7
	Employed in a government job	64	21.3
	Self employed	11	3.7
	Student	106	35.3
	Retired	7	2.3
	Other	3	1.0
Total		300	100
Monthly Income	Less than 1000 SAR	61	20.3
	1000-3000 SAR	58	19.3
	3001-5000 SAR	15	5.0
	5001-7000 SAR	44	14.7
	More than 7000 SAR	122	40.7
Total		300	100

Source: Developed for the research

4.2 Application Usage Results

When participants were asked if any of their family members or close friends owned or participated in small or medium sized businesses (refer to Glossary of Terms for the definition) available through a social media website, 56% of participants answered 'Yes', followed by 24% who answered 'No', and 20% who were not sure as shown in Figure 12. Of those who use social media, 83% of the participants are buyers, 1% are sellers, and 16% consider themselves both buyers and sellers as shown in Figure 10.

Participants who are sellers were asked if they considered owning a small business on social media as their only and main job or their second job; 10% of them considered it their main job, compared with 90% who said it is an additional job, as shown in Figure 9. When participants were asked which version they preferred to use for online shopping, 27% of them preferred social media mobile applications, 15% of them preferred social media websites, and 58% reported both as shown in Figure 11.

Participants were asked to sort their preferable social media websites to purchase products listed (beauty and personal, clothing, grocery, electronics and mobile products, medicine or healthcare items, and travel products or services). A majority of participants responded that they used Instagram to purchase beauty and personal care and clothing, and other means to purchase grocery items, electronics and mobile products, medicine or healthcare items, and travel products or services as shown in Table 4.2-1 and Figure 13.

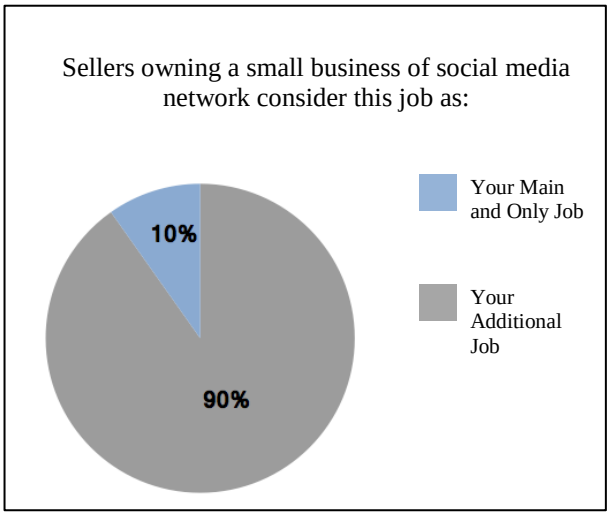


Figure 9 Small Medium Sized Business Owners

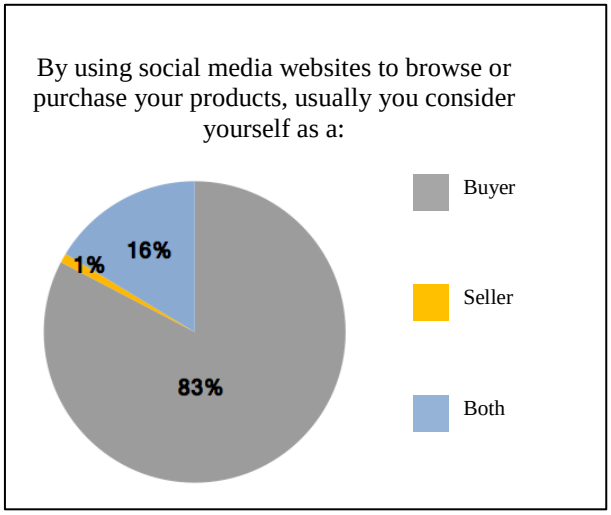


Figure 10 Saudi Arabian Consumers Type

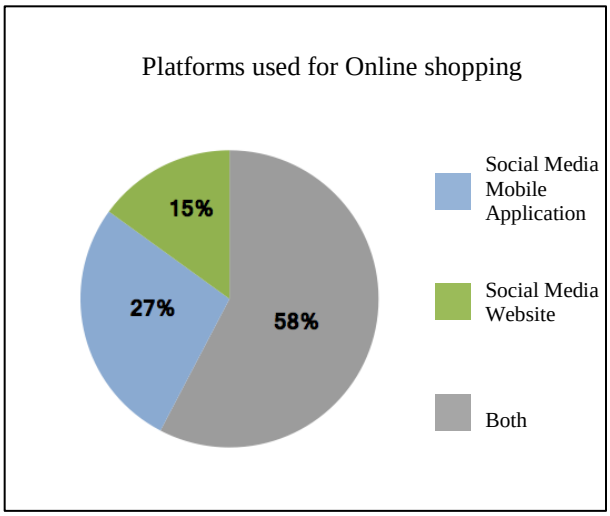


Figure 12 Preferred Version for Online Shopping

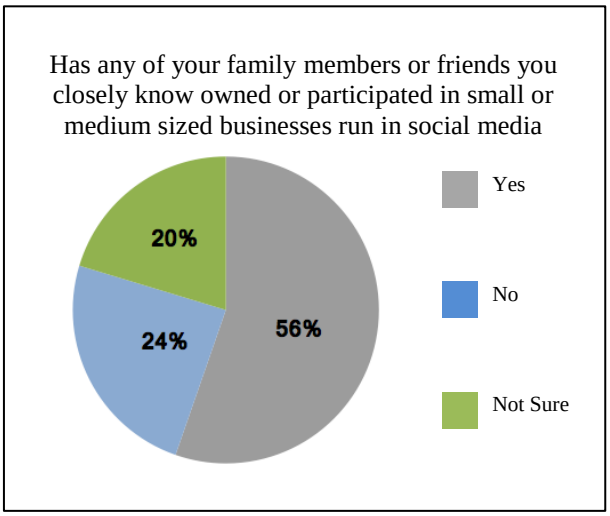
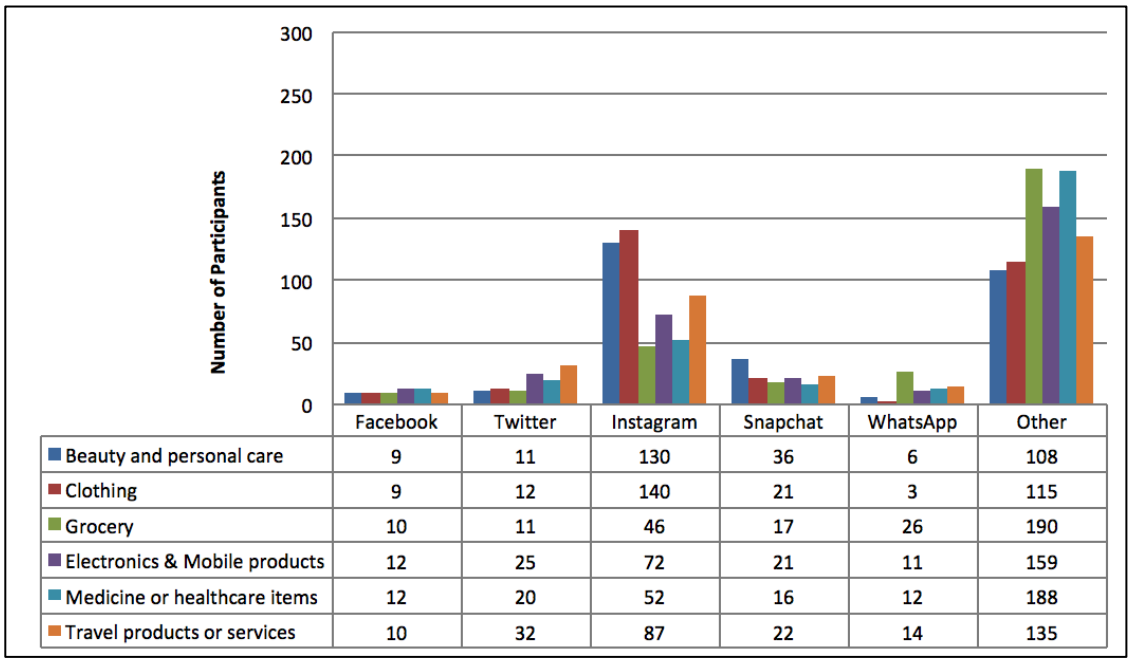


Figure 11 Entrepreneurs among Family or Friends



	Facebook	Twitter	Instagram	Snapchat	WhatsApp	Other
Beauty and personal care	9	11	130	36	6	108
Clothing	9	12	140	21	3	115
Grocery	10	11	46	17	26	190
Electronics & Mobile products	12	25	72	21	11	159
Medicine or healthcare items	12	20	52	16	12	188
Travel products or services	10	32	87	22	14	135

Figure 13 Social Media Websites and Products (n=300)

Table 4.2-1 Preferred social media platforms with the top 3 products from the survey data analysis

Social Media Channels	Products	Number of Participants
Facebook	1. Electronics & mobile products, Medicine or healthcare items	12,12
	2. Travel products or services, Grocery	10,10
	3. Beauty and personal care, Clothing	9,9
Twitter	1. Electronics & mobile products	25
	2. Travel products or services	32
	3. Medicine or healthcare items	20
Instagram	1. Clothing	140
	2. Beauty and personal care	130
	3. Travel products or services	87
Snapchat	1. Beauty and personal care	36
	2. Travel products or services	22
	3. Electronics & mobile products, Clothing	21
WhatsApp	1. Grocery	26
	2. Travel products or services	14
	3. Medicine or healthcare items	12

4.3 Common Variance Bias

In the case of primary data, the problem of common method bias can occur, affecting the validity of the study (Podsakoff et al., 2012). This research utilized Harman's single factor test to detect bias. The estimated results show that all items belong to 13 factors, and the first factor explains only 35.89% of the variance, indicating no issue of common method bias for this study (refer to Table 6.4-1 Appendix F).

4.4 Measurement Model Scale

To evaluate the measurement model, confirmatory factor analysis (CFA) was conducted (Hair et al., 2010). Convergent validity was assessed through estimating factor

loading, Cronbach's alpha (CA), Composite Reliability (CR) and Average Variance Extracted (AVE). The threshold values for CA, CR and AVE are 0.7, 0.7 and 0.5 respectively (Fornell & Larcker, 1981; Hair et al., 1998). As shown in Table 4.5-1, the output of CFA indicates that the estimated value of CA, CR and AVE are above the threshold values except Habit factor with score 0.695. Similarly, it is found that the values of factor loading for all items are equal or above 0.6. Therefore, it is concluded that convergent validity of data is good.

Furthermore, discriminant validity was confirmed by taking the square root of AVE. Fornell and Larcker (1981) suggests that if the square root of AVE is greater than correlation among all constructs then discriminant validity is sufficient. Table 4.5-2 exhibits the correlation among all the constructs and the bold numbers in the diagonal confirm sufficient discriminant validity.

4.5 Structural Model Analysis and Hypotheses Testing

The structural equation modeling technique was used to test the research hypotheses. The path regression coefficients were measured utilizing bootstrap resampling technique with 500 iterations (Chin, 1998; Suryana, Mayangsari & Novani, 2017). The model is shown in Figure 14 and the path coefficients are represented in Tables 4.6-2, 4.6-3 showing that the only significant relationships are between behavioral intention and information quality and behavioral intention. This research study found statistically insignificant moderate factors with gender, with $p>0.05$ which does not support the research hypotheses H1, H2, H3, H4a, H4b, H54, H6a, H6b, H7a, H7b, H8, H9, H10 as presented in Tables 4.6-2, 4.6-3.

Table 4.5-1 Factor loadings, CA, CR and AVE

Constructs	Indicators	Loading	Mean	Standard Dev.	CA	CR	AVE
Gender	Gender	1	0.5	0.5	1	1	1
Performance Expectancy (PE)	PE1	0.868	3.77	1.06	0.843	0.905	0.76
	PE2	0.858	3.62	1.16			
	PE3	0.89	3.78	1.15			
Effort Expectancy (EE)	EE1	0.788	3.30	1.06	0.786	0.876	0.702
	EE2	0.845	3.65	1.11			
	EE3	0.878	3.78	1.08			
Social Influence (SI)	SI1	0.786	2.73	1.09	0.716	0.839	0.635
	SI2	0.811	2.86	1.27			
	SI3	0.794	2.32	1.10			
Facilitating Conditions (FC)	FC1	0.836	3.77	1.10	0.826	0.892	0.734
	FC2	0.885	3.84	1.06			
	FC3	0.849	3.40	1.14			
Hedonic Motivation (HM)	HM1	0.912	3.37	1.03	0.906	0.941	0.841
	HM2	0.939	3.44	1.04			
	HM3	0.9	3.42	1.10			
Habit (HT)	HT1	0.809	2.96	1.09	0.695	0.824	0.611
	HT2	0.679	2.54	1.11			
	HT3	0.848	3.33	1.10			
Price Saving Orientation (PSO)	PSO1	0.855	3.70	1.09	0.873	0.922	0.798
	PSO2	0.91	3.70	1.02			
	PSO3	0.913	3.70	1.04			
Emotional Support (ES)	ES1	0.79	2.82	1.08	0.835	0.901	0.753
	ES2	0.903	2.83	1.08			
	ES3	0.906	2.86	1.10			
Informational Support (IS)	IS1	0.918	3.02	1.09	0.924	0.952	0.869
	IS2	0.963	2.97	1.07			
	IS3	0.914	2.94	1.04			
Social Commerce Constructs (SCCs)	SCCs1	0.761	3.00	1.13	0.773	0.869	0.689
	SCCs2	0.883	3.22	1.10			
	SCCs3	0.842	3.49	1.08			
Information Quality (IQ)	IQ1	0.875	2.99	1.06	0.855	0.912	0.775
	IQ2	0.906	3.20	1.03			
	IQ3	0.86	2.96	1.03			
Behavioral Intention (BI)	BI1	0.858	3.06	0.98	0.828	0.897	0.744
	BI2	0.876	3.43	1.05			
	BI3	0.854	3.12	1.03			
Use Behavior (UB)	UB1	1	3.137	1.079	1	1	1

Table 4.5-2 Descriptive Statistics, Correlation Matrix

	BI	EE	FC	G	GEEBI	GFCBI	GFCUB	GHMBI	GHTBI	GHTUB	GIQBI	GPEBI	GPSOBI	GPSOUB	GSCCsBI	GSIBI	GSSBI	HT	HM	IQ	PE	PSO	SCCs	SI	ES	IS	SS	UB
BI	**0.863**																											
EE	0.395	**0.838**																										
FC	0.463	0.737	**0.857**																									
G	-0.098	0.055	0.008	**1**																								
GEEBI	0.055	0.093	0.156	0	**1**																							
GFCBI	0.078	0.156	0.065	0	0.738	**1**																						
GFCUB	0.078	0.156	0.065	0	0.738	1	**1**																					
GHMBI	0.079	0.069	0.039	0	0.548	0.599	0.599	**1**																				
GHTBI	0.12	0.055	0.054	0	0.382	0.411	0.411	0.613	**1**																			
GHTUB	0.12	0.055	0.054	0	0.382	0.411	0.411	0.613	1	**1**																		
GIQBI	-0.025	0.052	0.05	0	0.342	0.364	0.364	0.375	0.358	0.358	**1**																	
GPEBI	0.043	0.056	0.052	0	0.631	0.584	0.584	0.583	0.328	0.328	0.315	**1**																
GPSOBI	0.082	0.064	0.074	0	0.523	0.518	0.518	0.601	0.445	0.445	0.473	0.515	**1**															
GPSOUB	0.082	0.064	0.074	0	0.523	0.518	0.518	0.601	0.445	0.445	0.473	0.515	1	**1**														
GSCCsBI	-0.103	-0.018	-0.002	0	0.202	0.29	0.29	0.255	0.173	0.173	0.291	0.228	0.365	0.365	**1**													
GSIBI	0.011	-0.047	-0.02	0	0.274	0.248	0.248	0.389	0.42	0.42	0.195	0.323	0.317	0.317	0.253	**1**												
GSSBI	0	-0.036	-0.014	0	0.314	0.303	0.303	0.399	0.386	0.386	0.298	0.323	0.416	0.416	0.503	0.495	**1**											
HT	0.37	0.383	0.412	0.015	0.055	0.054	0.054	0.091	0.122	0.122	0.016	-0.008	0.097	0.097	-0.096	-0.036	0.018	**0.782**										
HM	0.502	0.548	0.599	0.007	0.069	0.039	0.039	0.015	0.091	0.091	0.011	0.009	0.08	0.08	-0.055	-0.031	0.014	0.613	**0.917**									
IQ	0.527	0.338	0.363	-0.06	0.052	0.05	0.05	0.011	0.016	0.016	-0.131	-0.001	0.099	0.099	-0.13	-0.031	0.024	0.357	0.374	**0.88**								
PE	0.424	0.63	0.584	-0	0.056	0.052	0.052	0.009	-0.008	-0.008	-0.001	0.016	0.021	0.021	-0.031	-0.096	-0.08	0.328	0.583	0.314	**0.872**							
PSO	0.565	0.52	0.517	-0.03	0.064	0.074	0.074	0.08	0.097	0.097	0.099	0.021	0.077	0.077	-0.034	-0.051	0.022	0.444	0.601	0.474	0.515	**0.893**						
SCCs	0.473	0.198	0.289	-0.07	-0.018	-0.002	-0.002	-0.055	-0.096	-0.096	-0.13	-0.031	-0.034	-0.034	-0.005	0.006	-0.04	0.171	0.254	0.293	0.227	0.366	**0.83**					
SI	0.332	0.275	0.248	0.013	-0.048	-0.02	-0.02	-0.031	-0.036	-0.036	-0.031	-0.096	-0.051	-0.051	0.006	-0.004	-0.06	0.42	0.39	0.194	0.323	0.317	0.252	**0.797**				
ES	0.38	0.248	0.244	-0	-0.013	0.004	0.004	0.066	0.041	0.041	-0.011	-0.049	-0.017	-0.017	-0.045	-0.05	-0.02	0.349	0.311	0.242	0.255	0.353	0.41	0.468	**0.868**			
IS	0.448	0.306	0.292	-0.01	-0.049	-0.025	-0.025	-0.031	-0.003	-0.003	0.048	-0.094	0.05	0.05	-0.024	-0.053	-0.06	0.341	0.392	0.286	0.315	0.387	0.482	0.421	0.601	**0.932**		
SS	0.468	0.313	0.303	-0.01	-0.036	-0.014	-0.014	0.014	0.018	0.018	0.024	-0.082	0.022	0.022	-0.037	-0.058	-0.05	0.386	0.398	0.298	0.323	0.416	0.503	0.494	0.869	0.917	**0.806**	
UB	0.328	0.283	0.276	-0.03	0.016	0.067	0.067	0.073	0.071	0.071	-0.052	0.029	0.058	0.058	-0.073	-0.018	-0.02	0.387	0.364	0.285	0.262	0.354	0.227	0.137	0.214	0.285	0.283	**1**

Note:

N = 300.

BI= Behavioral Intention
EE= Effort Expectancy
FC= Facilitating Conditions
G= Gender
GEEBI=Gender*EE
GFCBI=Gender*FC2
GFCUB=Gender*FC
GHMBI=Gender*HM
GHTBI=Gender*HT2
GHTUB=Gender*HT
GIQBI=Gender_IQ_BI
GPEBI=Gender*PE
GPSOBI=Gender*PSO2
GPSOUB=Gender*PSO
GSCCsBI=Gender*SCCs
GSIBI=Gender*SI
HT= Habit
HM= Hedonic Motivation
IQ=Information Quality
PE= Performance Expectancy
PSO= Price Saving Orientation
SCCs= Social Commerce Constructs
SI= Social Influence
ES= Emotional Support
IS= Informational Support
SS=Social support
UB= Use behavior

Thus, the moderator is not statistically significant. However, the new factor, information quality (IQ), which was added to the model has a statistical significant effect on behavioral intention, supporting hypotheses H11. The results show that the factors which are moderated by gender: effort expectancy and social commerce constructs, have a negative relationship with behavioral intention, while performance expectancy, habit, social support, information quality, social influence, facilitating conditions, hedonic motivation, price saving orientation, and social commerce constructs all have a positive relation with behavioral intention. On the other hand, the relationships between the use behavior and the factors moderated by the gender habit, information quality, effort expectancy, price saving orientation and social commerce constructs are negative.

Moreover, the value of R^2—that is, the coefficient of determination—helps us to understand how much variance in a dependent variable is explained by independent variables. The value of R^2 tells whether the dependent variable is a good predictor, a moderate predictor, or a weak predictor. In this research, the estimated results showed in Table 4.6-1 states that 53% variance in behavioral intention is explained by independent variables. This shows the moderation of Behavioral intention to adopt s-commerce. Contrarily, only 20.6% variance of use behavior is explained by independent variables. This shows the weakness of use behavior to adopt s-commerce. Chin (1998) states that if the value of R^2 lies between 0.33 to 0.67, statistically it signifies that the dependent variable Behavioral intention is a moderate predictor. On the other hand, if the value of R^2 lies between 1.9 to 0.33, it implies that the dependent variable use behavior is a weak predictor.

4.6 Gender as a Moderator

The model was analyzed to test the significance of the moderator. The results show that gender is statistically not a significant moderator. The results of the moderating gender with the constructs are shown in Tables 4.6-2, 4.6-3.

Figure 15 shows the loading, R^2 and Path coefficient. The significant relationships are between BI and the factors price saving orientation (PSO), social commerce constructs (SCCs), facilitating conditions (FC), and information quality (IQ).

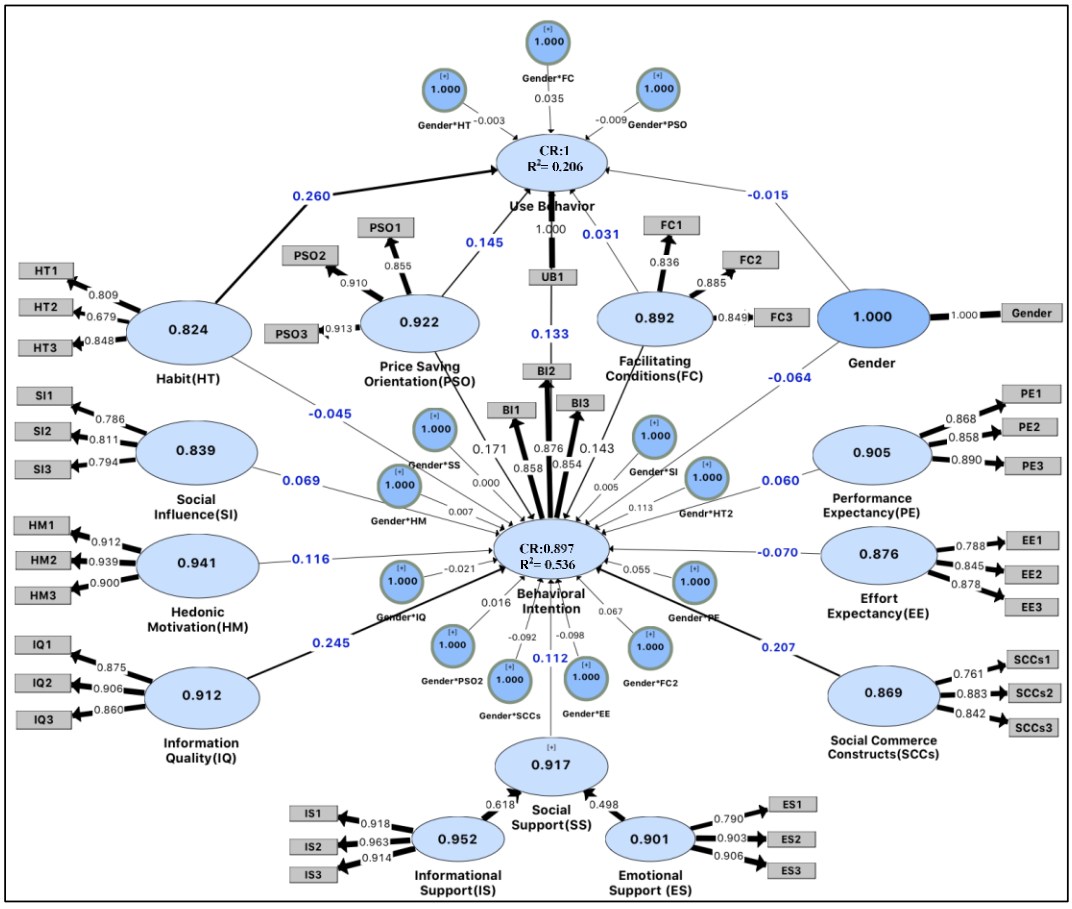


Figure 14 Results of Path Analysis

Table 4.6-1 R^2 Square of the dependent latent variables

Constructs Relation	R^2	Result
Behavioral Intention	0.538	Moderate
Use Behavior	0.206	Weak

4.7 Goodness-of-Fit (GoF)

As suggested by Wetzels, Odekerken-Schröder, and Van Oppen (2009) the following formula was used to examine the goodness-of-Fit (GoF).

$$GoF = \sqrt{(\overline{R^2} * \overline{AVE})}$$

The estimated values for GoF was 0.609 indicating that fit was good. They indicate that the scale for a good fit is ranged as GoF less than 0.1 not fit, 0.1 to 0.25 is small, GoF 0.25 to 0.36 is medium, GoF > 0.36 is large (Wetzels et al., 2009).

Additionally, to confirm that our data fits the proposed model, the model was created in AMOS to test the GoF of the model. AMOS provides more than 20 different measures to analyze the goodness of fit. Other researchers have reported the common Goodness-of-fit measurements, according to Kline (2005) who suggested reporting the most used measures of fitness, such as chi-square, Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). Thereby, following the recommendations of Kline (2005), this research estimated Chi-square, GFI, CFI and RMSEA. For a good and acceptable fit the scores for the measurements are listed GFI≥0.9, CFI≥0.9, and 0.05<RMSEA <0.08 (Hu & Bentler, 1999). The estimated fit of the model for the chi-square value of 1007.874 with 480 degrees of freedom in

significant at the 0.05 level; its *p*-value is 0.000, GFI=0.831, CFI=0.913, and RMSEA=0.061. The results show that the fit of model is good. Results are given in Table 4.7-1

Table 4.7-1 Model Fit

CFI Confirmatory Fit Index	**CMIN**	**DF**	**Root Mean Square Error of Approximation (RMSEA)**	**Goodness-of-Fit index (GFI)**	***p*-value**
0.913	1007.874	480	0.061	0.831	.000

5 CHAPTER FIVE: DISCUSSION

5.1 Major Findings

The aim of this research was to explore the influence of gender on the relationships between the constructs, as well as the influence of information quality on Saudi Arabian users' intention to purchasing products from SMWs by using UTAUT2. The significant finding is seen with the factor information quality (IQ) which shows a positive relationship with Behavioral Intention (BI). That means IQ as a predictor factor can play a significant role in increasing users' intention to adopt s-commerce. This finding aligns with the results from Abed et al. (2015), who studied the importance of this factor in the s-commerce context. The results also show the moderating role of gender as statistically insignificant on all the constructs.

5.2 Hypotheses

The results show that gender is not statistically a significant factor in moderating the relationship between constructs, having no statistical effect on the factors performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitate conditions (FC), habit (HT), hedonic motivation (HM), social commerce constructs (SCCs), social support (SS), and information quality (IQ). Moreover, the factors performance expectancy (PE), effort expectancy (EE), social influence (SI), habit (HT), hedonic motivation (HM), and social support (SS) statistically have insignificant

relationships with Behavioral Intention (BI). For the use behavior (UB) construct, the factors price saving orientation (PSO) and facilitate conditions (FC) are not statistically significant predictors for user's behavior towards adopting s-commerce.

Since the result show that the relationship between performance expectancy (PE) and Behavioral Intention (BI) without the moderator is statistically insignificant, this indicates that Saudi Arabian users found that using SMWs is not considered as useful in motivating shopping activity. This result dissimilar with the study by Sheikh et al. (2017).

Additionally, the finding shows that the relationship between effort expectancy (EE) and Behavioral Intention (BI) without the moderator is statistically insignificant. However, this finding confirms the Sheikh's et al. 2017 study. This means that Saudi Arabian users found using SMWs for shopping is not easy. This indicates that developers need to create easier shopping processes through SMWs. For example, adding an users' profile feature that can save users' size, style, favorite item or color, and frequently purchased. Other features that can be added include a one click button to process the order in fewer steps.

Additionally, the results illustrate that the relationship between social influence (SI) and Behavioral Intention (BI) without the moderator is also statistically insignificant, similar to the finding in Sheikh's et al. 2017 study.

Facilitating Conditions (FC) statistically has an insignificant relationship with UB. It confirms the finding in the study (Sheikh et al., 2017). It shows that the country's resources (e.g. IT infrastructure and Internet coverage) do not facilitate Saudi Arabian users to adopt SMWs for shopping. While the relationship between FC and BI is

significant. This result dissimilar with the finding in the study (Sheikh et al., 2017). The result shows that services provided by companies facilitate users' intention to use SMWs.

Without considering the moderator, Price Saving Orientation (PSO) has a statistically significant relationship with BI while the relationship between PSO and UB is statistically insignificant, supporting the study's findings (Sheikh et al., 2017). This illustrates that Saudi Arabian users use SMWs for shopping because they can save them money and offer discounts more than local stores. In this case the users' Behavioral Intention to adopt s-commerce can be enhanced if retailers develop their advertising strategies by reducing products prices, such as electronic coupons, offers on holidays and weekends, and hot deals for limited hours (once a week). Even though the respondents' demographic results show that a high majority of survey respondents' monthly income is more than >7000 SAR ($1,855), considered as a high income, users care how much money they spend in shopping. This finding can help SM developers develop features that can emphasize price saving, such as a price comparison button, before and after price label, Buy One Get One (BOGO) notification, and price adjustment. As a result, providing more features to save consumers' money can increase users' intention to adopt s-commerce.

Similarly, statistically the significant relationship between UB and habit is aligned with the findings from Venkatesh et al. in 2012 and Sheikh et al. (2017). This indicates that Saudi Arabian users disregard gender are more likely to adopt s-commerce since they use SMWs as a habit on a daily basis. SM developers can explore SA shopping habits, such as purchasing groceries on a particular date and time or purchasing clothes in

specific seasons. Investigating Saudis' shopping experience and improving current s-commerce features in SMWs will influence the adoption of s-commerce.

Additionally, the results show that the relationship between hedonic motivation (HM) and Behavioral Intention (BI) without the moderator is also statistically insignificant, dissimilar with the finding in Sheikh's et al. 2017 study. Moreover, the results show that the relationship between social support (SS) and Behavioral Intention (BI) without the moderator is also statistically insignificant, similar to the finding in Sheikh's et al. 2017 study.

Social Commerce Constructs (SCCs) statistically have a significant positive relation with users' intention to use SMWs for shopping. This finding confirms previous studies by Sheikh et al. (2017) and Hajli (2015). This means Saudi Arabian users like to share their shopping experience with SM friends, as well as asking for advice on which product they should buy. This can be beneficial for SM developers as well as retailers seeking to improve features or strategies like showing common purchases and shopping characteristics between close friends (e.g. favorite color, brand, and style). Consumers are more likely to enroll in online platforms that enable SCCs (Shanmugam, Sun, Amidi, Khani & Khani, 2016).

The information quality in this study means that Saudi Arabian users believe that information in SMWs is accurate, up-to-date, and complete (Kim et al., 2008). Some of the Information Saudi Arabian consumers look for in SMWs is retailer contact information including phone numbers, product descriptions and pictures, payment and delivery instructions and exchange or return rules (as discussed in Chapter 3 Table 3.1-1).

The results show a positive relation between information quality and behavioral intention in adopting social commerce. This finding confirms the theoretical result in the publication (Abed et al., 2015) that IQ affects consumers' adoption. It states that "SMEs that provide high quality information on their social media pages are the ones that attract consumer usage." (Alshehri et al., 2012). In conclusion, the key findings of this research are that information quality and social commerce constructs are more important predictor factors than usefulness or ease of use. This means Saudi Arabian users are more likely to adopt s-commerce if the SMWs provide social commerce constructs and provide complete and up-to-date information.

5.3 Implications of the Study

This research suggests practical implications for SM software developers as well as retailers. First, as the results show the statistical significant influence of IQ on BI, s-commerce developers can develop social features implemented in the s-commerce environment to facilitate online experience, since Saudi Arabian users value the quality of information in SMWs. Second, according to our findings there is no gender differences in SA society in terms of using s-commerce. Thus, retailer or software developers do not need to distinguish gender differences in designing SMWs for shopping. Third, the findings show that the social media websites visited most often by Saudi Arabian users for beauty and care, clothing and travel service is Instagram. This can drive retailers to advertise their products on Instagram and for software developers to add other social features, such as a buy button and ratings to encourage users to buy products from this platform.

6 CHAPTER SIX: CONCLUSION AND FUTURE WORK

6.1 Conclusion

This study adds to the current work on the development of the social commerce framework in Saudi Arabia. By adding the information quality factor to the constructs and moderating the model for gender, the UTAUT2 model was extended. The research results can be beneficial to businesses, encourage marketing strategies via SM and motivate software developers to consider important factors in developing SM platforms for Saudi Arabia's population.

Even though Saudi Arabia is a segregated country in nature and gender equality is still an issue, the use of technology in a social commerce context is not affected by gender. Therefore, software developers can develop the social media applications for both genders equally.

Also, developers or companies should focus on increasing the information quality in the s-commerce environment—even though the survey's participants found the IQ in SMWs complete and up-to-date. This indicates that Saudi Arabian social media users pay attention to the content of the SM platforms, and are willing to adopt them as long as they believe that their information is trustworthy. It is very important that Saudi Arabian users who purchase products through SMWs receive high quality information from these

websites, such as accurate products prices, contact information for the retailers, delivery methods description and package status information.

Moreover, since the results show that information quality has an influence on Saudi Arabian users' intention to buy products through social commerce, more features can be developed in order to simplify the information presented in SMWs, such as providing audio or video descriptions of the products instead of simple text.

6.2 Contribution

This study makes a significant contribution by extending the s-commerce framework suggested by Sheikh et al. (2017) with the new factor information quality. Additionally, this contribution focuses on a specific target population and addresses the effect of gender on adopting s-commerce by employing the UTAUT2 theory. Other contribution is that the results show that gender is not statistically significant in SA s-commerce context. Moreover, the result shows that Saudi Arabian users rely on other SM platforms for purchasing more than using Facebook, Instagram, Twitter or Snapchat. This result requires further investigation to identify the other platforms used by them.

6.3 Limitations and Threats to Validity

There are three main limitations to this study: data sampling, data collection, and participants' honesty in answering the questionnaire. The research studies Saudi consumers only, which could affect the results if non-Saudi consumers were included in the recruitment phase. The population of Saudi Arabia based on nationality in 2017 is 20,427,357 Saudi to 12,185,284 non-Saudi, which means around 38% of Saudi Arabia

population are non-Saudi. This is not a small percentage and therefore it should be taken into account (Saudi-Arabia: Population by nationality, 2017).

Another concern is the geographic location of the survey: central region Riyadh, the Western region Jeddah, and the Eastern region Al-Khobar, all three were selected due to limited time in data collection. It would be vital for the research results to cover more areas, such as the North and West regions of SA.

Finally, since the survey was electronic, it is limited only to the users with access to the Internet. More importantly, the lack of researcher presence in the recruitment phase may affect distributing the recruitment poster into several locations. With researcher presence in the recruitment phase, some of the issues would be solved. Participants would be able to ask for clarifications and the researcher would be able to answer questions and emphasize honesty in answering the questionnaire in a face-to-face setting. However, care was taken by the consulting linguist to minimize misunderstanding of the questions.

6.4 Future Work

The research can be extended further by discovering other factors that play a role in modern technology, especially in the use of new social media applications. Researchers can extend the proposed model to investigate more factors that might have an impact on users' intention to purchase from SMWs. In the future, the factors in this study framework can be addressed differently with different target of user, country or technology use. The researcher only addressed one new construct, information quality, and one moderator factor, gender. Other factors such as privacy, payment methods, social marketing strategies, user satisfaction, system quality, individual impact, self-efficacy,

and psychological factors such as emotional state, bad experience, motivation, anxiety, depression or happiness could all be tested.

The factors recommended by the researcher can be modified when new social technology is developed, such as Virtual Reality (VR) and Augmented Reality (AR). The adoption of s-commerce might be enhanced if some factors related to VR or AR are added as external factors to the model. Other questions and concerns can be addressed:

- What are the SMWs interface design factors that significantly deploy Saudi users to extensively participate in social commerce environment?
- Since marketing strategies and payments factors were not applied in this study, an extension could investigate what influence these factors on Saudi Arabian users' behaviors towards participating through s-commerce.
- Does moderator age influence this activity?

A. APPENDIX: SURVEY QUESTIONS IN ENGLISH

Table 6.4-1 The survey questions in English

In which language do you want to read the informed consent form?	English Version Arabic Version			
Demographic Factors: This section of the survey you will be asked for basic personal information. As we promised your information will be protected by the IRB approval and they will not be disclosed.				
Email	.....			
Name	.....			
Age	.....			
Nationality	Saudi		Non-Saudi	
Gender	Male		Female	
Education Level	None Primary School	Middle school High school	Bachelor Degree Master	PhD Other
Occupation Status	Unemployed Employed in a private job Employed in a government job		Student Retired	Self employed Other
Monthly Income	Less than 1000 SAR 1000 - 3000 SAR 3001 - 5000 SAR		5001 - 7000 SAR More than 7000 SAR	
Application Usage: In this section of the survey we would like to know about your experiences, concerning using social media websites for online purchases.				
Has any of your family members or friends you closely know owned or participated in small or medium sized businesses run in social media websites?	Yes No Not sure			
In online purchasing, have you ever used social media websites for online purchases (e.g., Facebook, Twitter, Snapchat, Instagram)?	Yes No			
By using social media websites (e.g., Facebook, Twitter, Instagram, Snapchat, WhatsApp, etc.) to browse or purchase your products, usually you consider yourself as a..	Buyer Seller Both			
If you are a seller that owns a small business runs in social media networks do you consider this job as...	Your main and only job you have Your additional job			
Which version do you prefer the most to use for online shopping?	Social media mobile application Social media website All of the above			

13 constructs for the model: Given the following sentences, how much do you agree or disagree with them?					
Performance Expectancy (PE)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
PE1: I find social media websites are very useful for online purchases process.	☒	☒	☒	☒	☒
PE2: I feel using social media websites increases my online shopping activity.	☒	☒	☒	☒	☒
PE3: I feel using social media websites for online purchases saves me time.	☒	☒	☒	☒	☒
Effort Expectancy (EE)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
EE1: I feel using social media websites for online shopping is not confusing	☒	☒	☒	☒	☒
EE2: I understand how to interact with social media websites for online purchases.	☒	☒	☒	☒	☒
EE3: I think using social media websites for online purchases is easy.	☒	☒	☒	☒	☒
Social Influence (SI)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
SI1: I follow social media websites for online purchase because my friends suggest me to do so.	☒	☒	☒	☒	☒
SI2: I feel following social media celebrities encourages me to purchase products through social media websites.	☒	☒	☒	☒	☒
SI3: I use social media websites because my close friends told me I should use.	☒	☒	☒	☒	☒
Facilitating Conditions (FC)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
FC1: I have the resources, tools, and skills needed to use social media websites for online purchases.	☒	☒	☒	☒	☒
FC2: I know how to use the social media websites for online shopping.	☒	☒	☒	☒	☒
FC3: I feel comfortable using social media websites for online purchases.	☒	☒	☒	☒	☒
Hedonic Motivation (HM)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
HM1: I feel pleased when I purchase my products through social media websites.	☒	☒	☒	☒	☒
HM2: I feel it is fun to use social media websites to buy new products.	☒	☒	☒	☒	☒
HM3: I feel entertained when I use social media websites for online purchases.	☒	☒	☒	☒	☒
Habits (HT)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
HT1: I feel purchasing online from social mobile websites has become a habit.	☒	☒	☒	☒	☒
HT2: I feel my extensive use of social media websites for online purchases makes me addicted to online purchases.	☒	☒	☒	☒	☒

HT3: I feel using social media websites for online purchases has become natural to me.	☒	☒	☒	☒	☒
Price Saving Orientation (PSO)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
PSO1: I find using the price comparison tool in some social media websites can save me some money.	☒	☒	☒	☒	☒
PSO2: I like to use social media websites for online shopping because I can search for inexpensive products.	☒	☒	☒	☒	☒
PSO3: I like to use social media websites to purchase my products because they can offer additional discounts and offers.	☒	☒	☒	☒	☒
Social Support (Emotional Support) (ES)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
ES1: I feel relaxed when my friends encourage me on social media websites, especially when I am not in a good mood and I want to make online purchases.	☒	☒	☒	☒	☒
ES2: I like my friends on social media website because they listen to me when I cannot decide which product I should buy.	☒	☒	☒	☒	☒
ES3: I trust my friends on social media websites when I face any problem because they can calm me down and help me.	☒	☒	☒	☒	☒
Informational Support (IS)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
IS1: I like social media websites for purchasing online because when I face a problem there are some friends/people who can support and advise me.	☒	☒	☒	☒	☒
IS2: I like social media websites because when I face a problem there are some friends who can help me in solving the problem.	☒	☒	☒	☒	☒
IS3: I like social media websites because when I face a problem there are some friends who send me messages to help me.	☒	☒	☒	☒	☒
Social Commerce Constructs (SCCs)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
SCCs1: I will ask my friends on forums and communities to give me their suggestions before I purchase my products online.	☒	☒	☒	☒	☒
SCCs2: I like to recommend products to my friends on social media websites if I feel they might like them.	☒	☒	☒	☒	☒
SCCs3: I do not mind sharing my shopping experience with my friends through ratings and reviews or on forums and communities.	☒	☒	☒	☒	☒

Information Quality (IQ)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
IQ1: I find the quality of information, such as in describing products specifically or the website information in general in social media websites is high (complete, available consistent, and relevant)	☒	☒	☒	☒	☒
IQ2: I find the quality of information in social media websites is up-to-date for information related to products, such as prices, product descriptions, policies and procedures.	☒	☒	☒	☒	☒
IQ3: I find the quality of information in social media websites is very good and acceptable so I feel I do not need additional information.	☒	☒	☒	☒	☒
Behavioral Intention (BI)	**1 Strongly disagree**	**2**	**3**	**4**	**5 Strongly agree**
BI1: I intend to use social media websites for browsing or purchasing products on a regular basis.	☒	☒	☒	☒	☒
BI2: I think I will use social media websites more in the future.	☒	☒	☒	☒	☒
BI3: I am planning to increase my online shopping practices by using social media websites for purchasing products more and more.	☒	☒	☒	☒	☒
User Behavior (UB)	**1 Never**	**2 Rarely**	**3 Often**	**4 Sometimes**	**5 Always**
UB1: How often do you use social media websites for online shopping (e.g. Facebook, Twitter, Instagram, Snapchat, WhatsApp)?	☒	☒	☒	☒	☒

For each of the products listed below, what is your preferred social media application for purchase?	**Facebook**	**Snapchat**	**Instagram**	**WhatsApp**	**Twitter**	**Other**
Beauty and personal care	☒	☒	☒	☒	☒	☒
Book/music	☒	☒	☒	☒	☒	☒
Consumer electronics	☒	☒	☒	☒	☒	☒
Fashion related products	☒	☒	☒	☒	☒	☒
Grocery food	☒	☒	☒	☒	☒	☒
IT & Mobile	☒	☒	☒	☒	☒	☒
Medicine or healthcare items	☒	☒	☒	☒	☒	☒
Travel products or services	☒	☒	☒	☒	☒	☒
Video game	☒	☒	☒	☒	☒	☒

Rule of the Survey
This survey is designed for Saudi citizens only who live in and outside Saudi Arabia. The study focuses on better understanding the behaviors and preferences of Saudi users concerning social media applications in s-commerce experience. Sorry if you do not meet this rule please distribute it to someone else. Thank you for supporting and understanding.

B. APPENDIX: SURVEY QUESTIONS IN ARABIC

Table 6.4-1 The survey questions in Arabic

بأي لغة تريد قراءة استمارة الموافقة المسبقة	نسخة انجليزية نسخة عربية		
عوامل ديموغرافية: في هذا القسم من الاستبانة سوف تسأل عن معلوماتك الشخصية وكما عاهدناك ان بياناتك الشخصية سوف تكون محميه ولن يتم عرضها لاستخدامات آخرى.			
البريد الإلكتروني	.....		
الاسم	.....		
العمر	.....		
الجنسية	سعودي / سعودية	غير سعودي/ غير سعودية	
الجنس	ذكر	انثي	
المستوى الدراسي	غير متعلم تعليم ابتدائي تعليم متوسط	تعليم ثانوي شهادة البكالوريوس	دراسات عليا دكتوراه آخرى
المستوى المهني	غير موظف موظف قطاع خاص	موظف قطاع حكومي أعمال حره	طالب متقاعد آخرى
الدخل الشهري	أقل من ١٠٠٠ ريال سعودي من ١٠٠٠- ٣٠٠٠ ريال سعودي	من ٣٠٠١-٥٠٠٠ ريال سعودي من ٥٠٠١- ٧٠٠٠ ريال سعودي	أكثر من ٧٠٠٠ ريال سعودي
استخدام البرنامج: في هذا القسم من الاستبيان نحن بحاجة لمعرفة خبراتك باستخدام المواقع الإلكترونية لشبكات التواصل الاجتماعي في مجال التسوق عن بعد.			
هل لديك أي من أفراد عائلتك أو أصدقائك المقربين يمتلك أو شارك في مشاريع صغيرة أو متوسطة الحجم تعمل من خلال المواقع الإلكترونية لمواقع التواصل الاجتماعي؟	نعم لا لست متأكد		
في حالة التسوق الالكتروني، هل قمت باستخدام شبكات التواصل الاجتماعي؟	نعم لا		
عند قيامك بالتسوق باستخدام برامج التواصل الاجتماعي واستخدامك لبرامج الهاتف او المواقع الإلكترونية الخاصة بمحلات التسوق، هل تعتبر نفسك	مشتري بائع معاً		
في حال كنت تاجر تمتلك مشروعك الصغير عبر استخدام تطبيقات وسائل التواصل الاجتماعي هل تعتبر هذه الوظيفة ...	وظيفتك الرئيسية والوحيدة وظيفتك الإضافية		
أي من الإصدارات او الطرق التالية تفضل أكثر من الاخر في عمليات التسوق الإلكتروني؟	تطبيق الهاتف الخاص بوسيلة التواصل الاجتماعي الموقع الإلكتروني الخاص بوسيلة التواصل الاجتماعي جميع ما سبق		

بنيات للنموذج ١٣: بالنظر إلى الجمل التالية، ما مدى موافقتك أو عدم موافقتك عليها؟

توقعات الأداء	**غير موافق وبشدة ١**	**لا أوافق ٢**	**لا أوافق ولا ارفض ٣**	**أوافق ٤**	**أوافق وبشدة ٥**
أجد مواقع التواصل الاجتماعي مفيدة جدا لعملية الشراء عبر الإنترنت.	☒	☒	☒	☒	☒
أشعر بأن استخدام مواقع وسائل التواصل الاجتماعي تزيد من نشاطي للتسوق عبر الإنترنت.	☒	☒	☒	☒	☒
أشعر بأن استخدام مواقع وسائل التواصل الاجتماعي لعمليات الشراء عبر الإنترنت يوفر لي الوقت.	☒	☒	☒	☒	☒
توقعات الجهد	**غير موافق وبشدة ١**	**لا أوافق ٢**	**لا أوافق ولا ارفض ٣**	**أوافق ٤**	**أوافق وبشدة ٥**
أشعر بأن استخدام مواقع وسائل التواصل الاجتماعي للتسوق عبر الإنترنت ليست مربكة.	☒	☒	☒	☒	☒
لدي معرفة بكيفية التفاعل مع مواقع وسائل التواصل الاجتماعي لعمليات الشراء عبر الإنترنت.	☒	☒	☒	☒	☒
أشعر بأن استخدام مواقع وسائل التواصل الاجتماعي لعمليات الشراء عبر الإنترنت سهلة الاستخدام.	☒	☒	☒	☒	☒
التأثير الاجتماعي	**غير موافق وبشدة ١**	**لا أوافق ٢**	**لا أوافق ولا ارفض ٣**	**أوافق ٤**	**أوافق وبشدة ٥**
أنا اتتبع مواقع وسائل التواصل الاجتماعي للشراء عبر الإنترنت لأن أصدقائي يقترحوا على بأن أفعل ذلك.	☒	☒	☒	☒	☒
أشعر بأن مشاهير وسائل التواصل الاجتماعي يقومون بتشجيعي على شراء المنتجات من خلال مواقع التواصل الاجتماعي.	☒	☒	☒	☒	☒
أستخدم مواقع التواصل الاجتماعي لأن أصدقائي المقربين رأوا أنه يجب أن أستخدمها.	☒	☒	☒	☒	☒
التسهيلات	**غير موافق وبشدة ١**	**لا أوافق ٢**	**لا أوافق ولا ارفض ٣**	**أوافق ٤**	**أوافق وبشدة ٥**
لدي الموارد والأدوات والمهارات اللازمة لاستخدام مواقع وسائل التواصل الاجتماعي لعمليات الشراء عبر الإنترنت.	☒	☒	☒	☒	☒
لدي المعرفة بكيفية استخدام مواقع وسائل التواصل الاجتماعي للتسوق عبر الإنترنت.	☒	☒	☒	☒	☒
أشعر بأنني مرتاح عند استخدامي لمواقع التواصل الاجتماعي لعمليات الشراء عبر الإنترنت.	☒	☒	☒	☒	☒
التحفيز	**غير موافق وبشدة ١**	**لا أوافق ٢**	**لا أوافق ولا ارفض ٣**	**أوافق ٤**	**أوافق وبشدة ٥**
أشعر بالسعادة عندما أشتري منتجاتي من خلال المواقع الإلكترونية لوسائل التواصل الاجتماعي.	☒	☒	☒	☒	☒
أشعر أنه من الممتع استخدام المواقع الإلكترونية لوسائل التواصل الاجتماعية لشراء منتجات جديدة.	☒	☒	☒	☒	☒
أشعر بالتسلية عند استخدام مواقع التواصل الاجتماعي لعمليات الشراء عبر الإنترنت.	☒	☒	☒	☒	☒

عادة	غير موافق وبشدة ١	لا أوافق ٢	لا أوافق ولا ارفض ٣	أوافق ٤	أوافق وبشدة ٥
أشعر بأن الشراء عبر الإنترنت من مواقع التواصل الاجتماعي أصبح عادة.	☒	☒	☒	☒	☒
أشعر بأن استخدامي المفرط لمواقع وسائل التواصل الاجتماعي للتسوق عبر الإنترنت يجعلني مدمن على المشتريات عبر الإنترنت.	☒	☒	☒	☒	☒
اشعر بأن استخدام مواقع وسائل التواصل الاجتماعي لعمليات الشراء عبر الإنترنت أصبح طبيعي بالنسبة لي.	☒	☒	☒	☒	☒
توجيه توفير الأسعار	**غير موافق وبشدة ١**	**لا أوافق ٢**	**لا أوافق ولا ارفض ٣**	**أوافق ٤**	**أوافق وبشدة ٥**
أجد استخدام أداة مقارنة الأسعار في بعض مواقع وسائل التواصل الاجتماعي يمكن أن تحفظ لي بعض المال.	☒	☒	☒	☒	☒
أود أن استخدم مواقع وسائل التواصل الاجتماعي للتسوق عبر الإنترنت لأن من خلالها يمكنني البحث عن المنتجات غير المكلفة.	☒	☒	☒	☒	☒
أحب استخدام مواقع التواصل الاجتماعي لشراء منتجاتي لأن بإمكانها تقديم خصومات وعروض إضافية.	☒	☒	☒	☒	☒
الدعم الاجتماعي (الدعم العاطفي)	**غير موافق وبشدة ١**	**لا أوافق ٢**	**لا أوافق ولا ارفض ٣**	**أوافق ٤**	**أوافق وبشدة ٥**
أشعر بالراحة عندما يشجعني أصدقائي عبر المواقع الإلكترونية لوسائل التواصل الاجتماعي، وخاصة عندما لا أكون في مزاج جيد وأرغب بالشراء.	☒	☒	☒	☒	☒
أفضل أصدقائي عبر مواقع التواصل الاجتماعي لأنهم يستمعون لي عندما لا أستطيع أن أقرر أي منتج يجب أن أشتري.	☒	☒	☒	☒	☒
أنا أثق بأصدقائي عبر مواقع التواصل الاجتماعي عندما أواجه مشكلة لأن بإمكانهم تهدئتي ومساعدتي.	☒	☒	☒	☒	☒
دعم المعلومات	**غير موافق وبشدة ١**	**لا أوافق ٢**	**لا أوافق ولا ارفض ٣**	**أوافق ٤**	**أوافق وبشدة ٥**
أنا أفضل مواقع وسائل التواصل الاجتماعي لأنه عندما أواجه مشكلة هناك أصدقاء أو أشخاص يمكن أن يقدموا لي الدعم والمشورة.	☒	☒	☒	☒	☒
أنا أفضل مواقع وسائل التواصل الاجتماعي لأنه عندما أواجه مشكلة، هناك بعض الأصدقاء الذين يمكن أن يساعدوني في حل المشكلة.	☒	☒	☒	☒	☒
أفضل مواقع وسائل التواصل الاجتماعي لأنه عندما تواجهني مشكلة، أجد بعض الأصدقاء الذين يقومون بإرسال رسائل لمساعدتي.	☒	☒	☒	☒	☒
بنيات التجارة الاجتماعية	**غير موافق وبشدة ١**	**لا أوافق ٢**	**لا أوافق ولا ارفض ٣**	**أوافق ٤**	**أوافق وبشدة ٥**
سأقوم بسؤال أصدقائي في المنتديات الإلكترونية بأن يقدموا لي اقتراحاتهم قبل شراء منتجاتي عبر الإنترنت.	☒	☒	☒	☒	☒
أود أن اشارك المنتجات مع أصدقائي على مواقع وسائل التواصل الاجتماعي إذا شعرت بأنهم قد يرغبون بها.	☒	☒	☒	☒	☒
أنا لا أمانع مشاركة تجربتي بالتسوق مع أصدقائي من خلال التقييمات والتعليقات أو على المنتديات الإلكترونية.	☒	☒	☒	☒	☒

جودة المعلومات	غير موافق وبشدة ١	لا أوافق ٢	لا أوافق ولا ارفض ٣	أوافق ٤	أوافق وبشدة ٥
أجد أن جودة المعلومات في وصف المنتجات على وجه التحديد أو معلومات الموقع بشكل عام (في مواقع التواصل الاجتماعي ذات جودة عالية (كاملة، متاحة، منسقة وذات صلة))	☒	☒	☒	☒	☒
أجد أن جودة المعلومات في مواقع التواصل الاجتماعي محدثة فيما يتعلق بالمنتجات، مثل أسعار، الوصف والسياسات والإجراءات.	☒	☒	☒	☒	☒
أجد جودة المعلومات في مواقع التواصل الاجتماعي جيدة جدا ومقبولة لذلك أشعر أنني لست بحاجة إلى معلومات إضافية.	☒	☒	☒	☒	☒

النية السلوكية للاستخدام	غير موافق وبشدة ١	لا أوافق ٢	لا أوافق ولا ارفض ٣	أوافق ٤	أوافق وبشدة ٥
أنوي استخدام مواقع التواصل الاجتماعي لتصفح أو شراء المنتجات بشكل منتظم.	☒	☒	☒	☒	☒
أشعر أنني سوف استخدم المواقع الإلكترونية لوسائل التواصل الاجتماعي أكثر في المستقبل.	☒	☒	☒	☒	☒
أنا أخطط لزيادة ممارسات التسوق عبر الإنترنت من خلال استخدام مواقع التواصل الاجتماعي لشراء المنتجات أكثر وأكثر.	☒	☒	☒	☒	☒

سلوك الاستخدام	ابدا ١	نادرا ٢	غالبا ٣	بعض الاوقات ٤	دائما ٥
كم عدد المرات التي تستخدم فيها مواقع التواصل الاجتماعي للتسوق عن بعد؟	☒	☒	☒	☒	☒

لكل من المنتجات التالية موضحه بالأسفل، اي برنامج تواصل اجتماعي تفضل ان تستخدمه في عمليات الشراء؟	Facebook	Snapchat	Instagram	WhatsApp	Twitter	Other
الجمال والعناية الشخصية	☒	☒	☒	☒	☒	☒
كتب / موسيقى	☒	☒	☒	☒	☒	☒
مستهلكات إلكترونية	☒	☒	☒	☒	☒	☒
ملابس	☒	☒	☒	☒	☒	☒
بقالة	☒	☒	☒	☒	☒	☒
تقنيات وأجهزة محمولة	☒	☒	☒	☒	☒	☒
أدوية ومستلزمات طبية	☒	☒	☒	☒	☒	☒
منتجات أو خدمات السفر	☒	☒	☒	☒	☒	☒
ألعاب فيديو	☒	☒	☒	☒	☒	☒

شرط الاستبيان

هذا الاستبيان مصمم للمواطنين السعوديين فقط الذين يعيشون في المملكة العربية السعودية وخارجها. وتركز الدراسة على فهم أفضل لسلوكيات وأفضليات المستخدمين السعوديين فيما يتعلق بتطبيقات وسائل التواصل الاجتماعي في تجربة التجارة الاجتماعية الإلكترونية. عذرا إذا لم تستوف هذا الشرط، يرجى إعادة إرسال رابط الاستبيان لشخص آخر. أشكرك على الدعم وأقدر لك المحاولة.

C. APPENDIX: SURVEY EMAIL MESSAGE

Dear participant,
I hope this email finds you well. I am a student at George Mason University in the United States and I am working with Dr. Vivian Motti on a research study. The study focuses on the factors influencing the adoption of social commerce among Saudi Arabian users for online shopping.
Your participation is vital for this research. We depend on you and your students completing the questionnaire. As such I kindly ask you to distribute the below survey link to your students. For further clarification, you can read the attached survey cover letter, which will introduce you to the survey procedure, or reach me via email at salotai4@gmu.edu.
Survey link: https://goo.gl/forms/xUlZzsOafoCM7kUx1

Your response and time are greatly appreciated.
Sincerely,
Sarah Alotaibi
MS AIT Student
Department of Information Sciences and Technology
Volgenau School of Engineering
George Mason University

Figure 15 Survey Email Message

D. APPENDIX: CONSTRUCTS MODEL SURVEY QUESTIONS

Table 6.4-1 Constructs Model Survey Questions

Constructs	Items
Performance Expectancy (PE)	PE1: I find social media websites are very useful for online purchases process.
	PE2: I feel using social media websites increases my online shopping activity.
	PE3: I feel using social media websites for online purchases saves me time.
Effort Expectancy (EE)	EE1: I feel using social media websites for online shopping is not confusing.
	EE2: I understand how to interact with social media websites for online purchases.
	EE3: I think using social media websites for online purchases is easy.
Social Influence (SI)	SI1: I follow social media websites for online purchase because my friends suggest I do so.
	SI2: I feel following social media celebrities encourages me to purchase products through social media websites.
	SI3: I use social media websites because my close friends told me I should use.
Facilitating Conditions (FC)	FC1: I have the resources, tools, and skills needed to use social media websites for online purchases.
	FC2: I know how to use social media websites for online shopping.
	FC3: I feel comfortable using social media websites for online purchases.
Hedonic Motivation (HM)	HM1: I feel pleased when I purchase my products through social media websites.
	HM2: I feel it is fun to use social media websites to buy new products.
	HM3: I feel entertained when I use social media websites for online purchases.
Habits (HT)	HT1: I feel purchasing online from social mobile websites has become a habit.
	HT2: I feel my extensive use of social media websites for online purchases makes me addicted to online purchases.
	HT3: I feel using social media websites for online purchases has become natural to me.
Price Saving Orientation (PSO)	PSO1: I find using the price comparison tool in some social media websites can save me some money.
	PSO2: I like to use social media websites for online shopping because I can search for inexpensive products.
	PSO3: I like to use social media websites to purchase my products because they can offer additional discounts and offers.
Social Support (Emotional Support) (ES)	ES1: I feel relaxed when my friends encourage me on social media websites, especially when I am not in a good mood and I want to make online purchases.
	ES2: I like my friends on social media websites because they listen to me when I cannot decide which product I should buy.
	ES3: I trust my friends on social media websites when I face any problem because they can calm me down and help me.

Table 6.4-2 Constructs Model Survey Questions (Continued)

Constructs	Items
Informational Support (IS)	IS1: I like social media websites for purchasing online because when I face a problem there are some friends/people who can support and advise me.
	IS2: I like social media websites because when I face a problem there are some friends who can help me in solving the problem.
	IS3: I like social media websites because when I face a problem there are some friends who send me messages to help me.
Social Commerce Constructs (SCCs)	SCCs1: I will ask my friends on forums and communities to give me their suggestions before I purchase my products online.
	SCCs2: I like to recommend products to my friends on social media websites if I feel they might like them.
	SCCs3: I do not mind sharing my shopping experience with my friends through ratings and reviews or on forums and communities.
Information Quality (IQ)	IQ1: I find the quality of information, such as in describing products specifically or the website information in general in social media websites is high (complete, available consistent, relevant).
	IQ2: I find the quality of information in social media websites is up-to-date for information related to products, such as prices, description and policies and procedures.
	IQ3: I find the quality of information in social media websites is very good and acceptable so I feel I do not need additional information.
Behavioral Intention (BI)	BI1: I intend to use social media websites for browsing or purchasing products on a regular basis.
	BI2: I think I will use social media websites more in the future.
	BI3: I am planning to increase my online shopping practices by using social media websites for purchasing products more and more.
User behavior (UB)	How often do you use social media websites for online shopping (e.g. Facebook, Twitter, Instagram, Snapchat, WhatsApp)?

E. APPENDIX: RECRUITMENT POSTER

Figure 16 Recruitment Poster

F. APPENDIX: DATA ANALYSIS TABLES

Table 6.4-1 Results of Harman's single factor test

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.330	33.324	33.324	12.330	33.324	33.324
2	3.531	9.542	42.867			
3	2.278	6.156	49.023			
4	1.923	5.197	54.220			
5	1.339	3.618	57.838			
6	1.299	3.511	61.348			
7	1.178	3.184	64.533			
8	1.095	2.960	67.493			
9	.948	2.562	70.055			
10	.907	2.451	72.506			
11	.840	2.270	74.776			
12	.772	2.086	76.862			
13	.692	1.869	78.731			
14	.635	1.716	80.447			
15	.560	1.514	81.961			
16	.532	1.438	83.399			
17	.491	1.328	84.727			
18	.485	1.311	86.039			
19	.465	1.256	87.295			
20	.438	1.184	88.480			
21	.423	1.143	89.623			
22	.387	1.046	90.669			
23	.343	.928	91.597			
24	.320	.866	92.463			
25	.314	.849	93.312			
26	.302	.817	94.129			
27	.286	.773	94.901			

28	.263	.711	95.612			
29	.247	.667	96.279			
30	.233	.631	96.910			
31	.225	.607	97.517			
32	.190	.513	98.029			
33	.181	.490	98.520			
34	.173	.466	98.986			
35	.145	.392	99.378			
36	.136	.367	99.745			
37	.094	.255	100.000			

Table 6.4-2 Path coefficient without the moderator gender

Relationship	Std. Beta	Mean (M)	Standard Deviation (STDEV)	*P*-Values	Result
Behavioral Intention → Use Behavior	0.136	0.137	0.073	0.077	Not significant
Behavioral Intention					
Performance Expectancy (PE) →Behavioral Intention	0.052	0.046	0.076	0.421	Not significant
Effort Expectancy (EE) →Behavioral Intention	-0.052	-0.047	0.077	0.376	Not significant
Social Influence (SI) →Behavioral Intention	0.047	0.053	0.053	0.243	Not significant
Facilitating Conditions (FC) →Behavioral Intention	0.114	0.118	0.067	0.032	**significant**
Price Saving Orientation (PSO) →Behavioral Intention	0.183	0.185	0.066	0.012	**significant**
Habit (HT) →Behavioral Intention	-0.022	-0.025	0.06	0.432	Not significant
Hedonic Motivation(HM) →Behavioral Intention	0.122	0.118	0.066	0.091	Not significant
Social Support (SS) →Behavioral Intention	0.116	0.111	0.06	0.062	Not significant
Social Commerce Constructs (SCCs) → Behavioral Intention	0.198	0.200	0.057	0.000	**significant**
Information Quality (IQ) →Behavioral Intention	0.261	0.263	0.056	0.000	**significant**
Use Behavior					
Facilitating Conditions (FC) →Use Behavior	0.031	0.03	0.064	0.643	Not significant
Price Saving Orientation (PSO) → Use Behavior	0.146	0.141	0.073	0.062	Not significant
Habit (HT) →Use Behavior	0.259	0.262	0.056	0.000	**significant**

Table 6.4-3 Path Coefficient Hypotheses (n=300) Female (n=150) Male (n=150)

H		Std. Beta	Mean (M)	(STDEV)	P Values	Decision
H1	**Relation**	Gender*PE → Behavioral Intention				
Gender (Gender) All		0.055	0.043	0.073	0.448	Not supported
Female (n=150)		0.055	0.049	0.073	0.451	
Male (n=150)		0.055	0.044	0.073	0.449	
H2	**Relation**	Gender*EE → Behavioral Intention				
Gender (Gender) All		-0.098	-0.093	0.08	0.219	Not supported
Female (n=150)		-0.098	-0.092	0.076	0.194	
Male (n=150)		-0.098	-0.09	0.08	0.22	
H3	**Relation**	Gender*SI → Behavioral Intention				
Gender (Gender) All		0.005	0.004	0.057	0.932	Not supported
Female (n=150)		0.005	-0.003	0.059	0.935	
Male (n=150)		0.005	0.001	0.06	0.936	
H4a	**Relation**	Gender*FC2 → Behavioral Intention				
Gender (Gender) All		0.067	0.067	0.07	0.34	Not supported
Female (n=150)		0.067	0.065	0.068	0.328	
Male (n=150)		0.067	0.065	0.07	0.34	
H4b	**Relation**	Gender*FC → Use Behavior				
Gender (Gender) All		0.035	0.038	0.062	0.574	Not supported
Female (n=150)		0.035	0.034	0.063	0.582	
Male (n=150)		0.035	0.033	0.063	0.579	
H5	**Relation**	Gender*HM → Behavioral Intention				
Gender (Gender) All		0.007	0.005	0.071	0.916	Not supported
Female (n=150)		0.007	0.012	0.07	0.916	
Male (n=150)		0.007	0.009	0.07	0.916	
H6a	**Relation**	Gender*HT → Behavioral Intention				
Gender (Gender) All		0.113	0.104	0.06	0.062	Not supported
Female (n=150)		0.113	0.109	0.06	0.061	
Male (n=150)		0.113	0.114	0.061	0.067	

Table 6.4-4 Path Coefficient Hypotheses (n=300) Female (n=150) Male (n=150) (Continued)

H		Std. Beta	Mean (M)	(STDEV)	P Values	Decision
H6b	**Relation**	Gender*HT → Use Behavior				
Gender (Gender) All		-0.003	-0.004	0.059	0.965	Not supported
Female (n=150)		-0.003	-0.003	0.064	0.967	
Male (n=150)		-0.003	-0.001	0.061	0.966	
H7a	**Relation**	Gender*PSO → Behavioral Intention				
Gender (Gender) All		0.016	0.024	0.068	0.809	Not supported
Female (n=150)		0.016	0.014	0.071	0.818	
Male (n=150)		0.016	0.018	0.067	0.808	
H7b	**Relation**	Gender*PSO → Use Behavior				
Gender (Gender) All		-0.009	-0.01	0.069	0.9	Not supported
Female (n=150)		-0.009	-0.016	0.07	0.901	
Male (n=150)		-0.009	-0.011	0.071	0.902	
H8	**Relation**	Gender*IQ → Behavioral Intention				
Gender (Gender) All		-0.021	-0.018	0.062	0.737	Not supported
Female (n=150)		-0.021	-0.016	0.061	0.733	
Male (n=150)		-0.021	-0.018	0.057	0.718	
H9	**Relation**	Gender*SCCs → Behavioral Intention				
Gender (Gender) All		-0.092	-0.096	0.054	0.09	Not supported
Female (n=150)		-0.092	-0.092	0.055	0.094	
Male (n=150)		-0.092	-0.095	0.055	0.097	
H10	**Relation**	Gender*SS → Behavioral Intention				
Gender (Gender) All		0	0.002	0.057	0.997	Not supported
Female (n=150)		0	0	0.06	0.997	
Male (n=150)		0	0.002	0.057	0.997	
H11	**Relation**	Information Quality (IQ) → Behavioral Intention				
Gender (Gender) All		0.245	0.243	0.056	0.000	**Supported****
Female (n=150)		0.245	0.242	0.058	0.000	
Male (n=150)		0.245	0.25	0.059	0.000	

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