QATAR UNIVERSITY

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USER'S TECHNOLOGY ACCEPTANCE MODEL TO PROMOTE TRUST TOWARDS MOBILE COMMERCE IN QATAR

BY

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ABSTRACT

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Title: User's Technology Acceptance Model to Promote Trust Towards Mobile Commerce in Qatar

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In the present fast-moving generation, the world of technology along with the support of the Internet has splendidly enhanced our daily lives. For instance, today everything is accessible on our fingertips, there is no need to even step out of our houses as our favorite products can be available in front of us and this is being possible only because of the electronic and mobile commerce technologies. The shift from in-store shopping to online shopping might have taken hundreds of years; yet, the partial conversion from web world (E-commerce), which means conducting business transactions on the Internet using computers or laptops to mobile world (M-commerce) that refers to conducting the same transactions but with the use of mobile devices has simply happened within just a decade or two (Bhragava, 2017).

In Qatar, the average annual consumer expenditure is impressive. Surprisingly, only a small portion of the Qatari population has demonstrated an interest in online shopping via mobile devices due to a lack of trust. Therefore, in a multicultural nation such as Qatar, it is vital to explore the factors that can promote consumer trust in mobile commerce.

The objective of this study is to present and validate a conceptual framework for

trust based on the original technology acceptance model. The proposed model is classified into three logical sets: (1) motivation factors, which are comprised of three independent elements: localization, social media, and luxury brands. (2) User cognitive response that consists of three factors: perceived usability that combines both perceived ease of use and usefulness; perceived privacy; and perceived security. (3) The affective response that is mobile commerce trust the primary target of this exploratory study.

An online survey was conducted amongst online users residing in Qatar to gather data and the proposed trust model was empirically validated using Structural Equation Modeling with Partial Least Squares (PLS-SEM) approach.

Our findings reveal that perceived security has the strongest positive direct relationship with trust formation, followed by social media influencers, whereas localization, luxury brands, perceived usability, and privacy indirectly influence trust through perceived security. Multi-group analyses recommend that consumers identified by different nationalities, gender, and ages have slightly diverse mobile commerce trust behaviors.

Finally, this research contributes towards better consumers trust on mobile commerce in Qatari community and the findings offer a number of theoretical implications for scholars as well as valuable strategies for practitioners.

Key words: M-commerce, M-Trust, TAM, Localization, Social media, Luxury brands, PLS-SEM, M-commerce security, M-commerce privacy, Qatar, Multicultural

DEDICATION

This thesis is dedicated to my beloved parents, sisters, and my cousin Maryam who have always been sources of inspiration and power throughout the moments of despair and discouragement.

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Chapter 1: Introduction

This chapter gives the background to the research. It starts by offering brief overview of the current status of mobile commerce growth worldwide. It then narrows down and focuses on the scenario of mobile commerce in Qatar. After that, the research problem is identified and reviewed. The contribution, objectives, and research questions are demonstrated next. In the end of the chapter, the thesis outline is presented.

1.1. Global State of Mobile Commerce

There once was a time when most of the people used to conduct their day-to-day business activities by using a computer, a laptop, and a phone. However, from the time when smartphones started to reach the pockets of average consumers and while the world has not fully migrated to E-commerce until today in 2018, it appears that more and more people began to login from their smartphones to fill the role of the three aforementioned devices. The result is that the smartphones are becoming the most desirable alternative for surfing the web and doing online shopping, which rapidly accelerates the phenomenon of M-commerce.

M-commerce is defined as the experience of buying goods over wireless internet-enabled devices such as smartphones and tablets (Clarke, 2001; Esmaeili and Eydgahi, 2016). In other words, it is a gateway for online users to conduct their transactions in a flexible style that minimizes user time and facilitates remote access via mobile applications (Liu et al., 2009). Therefore, in the past few years, M-commerce has become a growing approach for mercantile system as it opens the door for all stakeholders (e.g., customers, companies…etc.) to exchange products and services anytime and anywhere within just few taps on their smartphone's screens providing that

the Wi-Fi, 3G/4G signal is ON.

From a survey research on the Global Penetration of Mobile Shopping (PwC, 2017), in March 2016 almost 46% of online consumers in the Asia Pacific region had bought goods through a mobile device (e.g., smartphone or tablet). Although in 2017, computers and laptops were the most popular devices for online shopping, 19% of online consumers affirmed that on monthly basis they conducted online transactions via their mobile devices, specifically smartphones as illustrated in Figure 1.

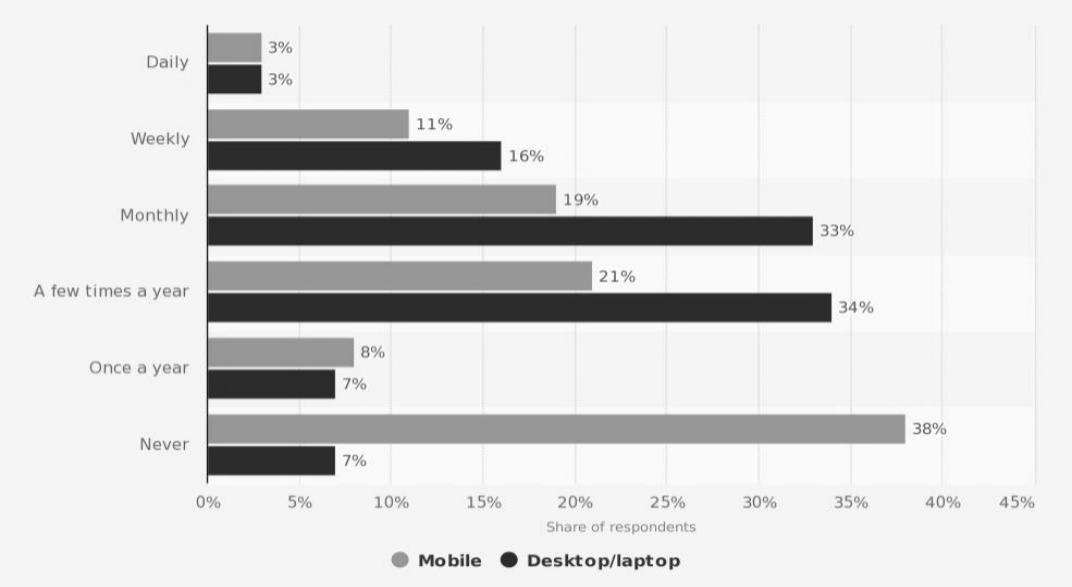

Figure 1.Global online shopping device usage and frequency (PwC ,2017)

In the Middle East region, over the past decade the online shopping has grown very fast and so the smartphones that are now becoming ubiquitous, which means the majority of the consumers are walking around with the internet in their pockets, a wealth

of information at their fingertips and a new and powerful tool that give them the opportunity to do mobile shopping all the time (Vaast, 2017). This huge growth that comes mainly from the dynamic young population; as well as the highest world internet penetration levels per capita predicts that, a potential online spending in the Middle East might emerge rapidly as one of the highest in the globe (Mohan, 2015).

As citied by Pieri (2016) , in the Gulf Cooperation Council (GCC) countries, the marketing technology company (Criteo) in its recent report "H1 2016 State of Mobile Commerce Report" revealed that mobile transactions share has reached almost 34% and this figure is approximately 4% greater than the global average share of mobile transactions (39%) .

In the State of Qatar, the Households and Individuals Survey of 2012 report demonstrated that mobile phone penetration has achieved approximately 100% with 75% of its population using smartphones; the highest penetration rate in the Middle East (Metodieva, 2012).

From the global statistics on mobile shopping, to the Middle East information, GCC countries, and ultimately Qatar, we can realize that smartphones usage is increasing in an astonishing rate and this has led the online stores to be further expanded and take advantage of the growing mobile population.

Figure 2 depicts this fact as it shows very clearly that the global revenue of mobile commerce is projected to increase in 2019 to more than 1.5 times the forecasted sales in 2018 (Ovum, 2016). This can be finally interpreted as that; the crowd is currently shifting towards the world of mobile rather than the web world.

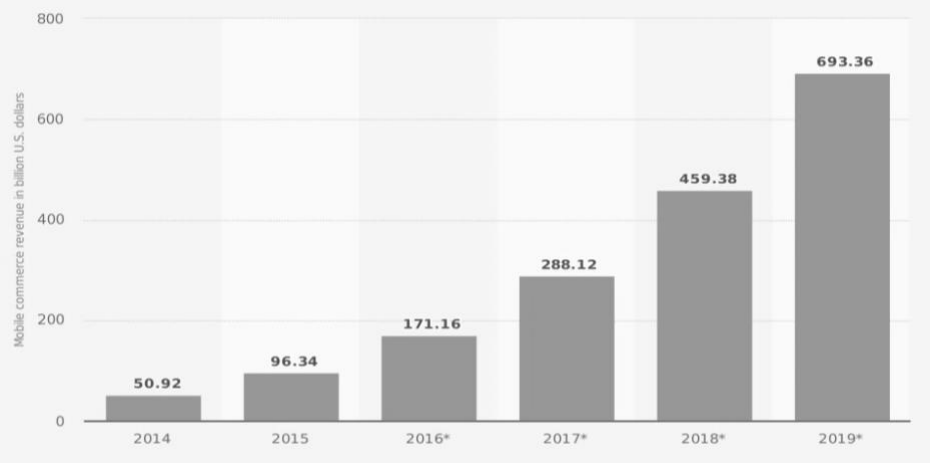

Figure 2.Worldwide mobile commerce sales from 2014 to 2019 (Ovum, 2016)

1.2. The Scenario in the State of Qatar

Qatar a country with a population of 2.30 million people has the world's highest gross domestic product (GDP) per capita with an economy that is considered as one of the fastest-growing among the Middle East and Africa (MENA) region (*Qatar National E-Commerce Roadmap 2017*, 2017). According to Qatar National e-Commerce Roadmap 2015 (2015) report, the Qatari business to consumer (B2C) market in 2015 was 1.2 billion US dollars, making it the seventh largest in the region with substantial opportunity for enhancement and growth.

For mobile shopping adoption, Qatar already enjoys the key requirements, which can form the most favorable and robust online commerce ecosystem. As reported in Qatar National E-Commerce Roadmap 2017 (2017), Qatar has a population with great levels of disposable personal income; a society that is extremely connected; secure and strong Information and Communication Technology (ICT) infrastructure; high and stable

internet, mobile, and fixed connectivity; and a growing maturity in ICT.

In addition, the estimated average annual spend per online user in 2014 in Qatar was about 3.453 US dollars and the average value per online transaction was 264 US dollars. These statistics were the highest amongst the MENA region.

Given that, the existing factors that can lead to a satisfactory mobile shopping environment and the fully penetration of mobile devices would noticeably provide the desirable business environment in Qatar and eventually contribute in accomplishing one of the main pillar of the Qatar National Visions 2030 that is "Economic Development" *(Qatar National E-Commerce Roadmap 2017*, 2017). For instance, mobile commerce can offer to vendors and enterprises better and enhanced access to their target consumers and can increase the efficiency of the businesses; it can also expand investment and trade opportunities; and foster all diversification, innovation, and competitiveness. Nevertheless, the acceptance of mobile commerce is fairly low compared to the other countries within the MENA and as demonstrated in Figure 3 only 14 % of the total population in Qatar are online shoppers (computers/laptops /mobile devices).

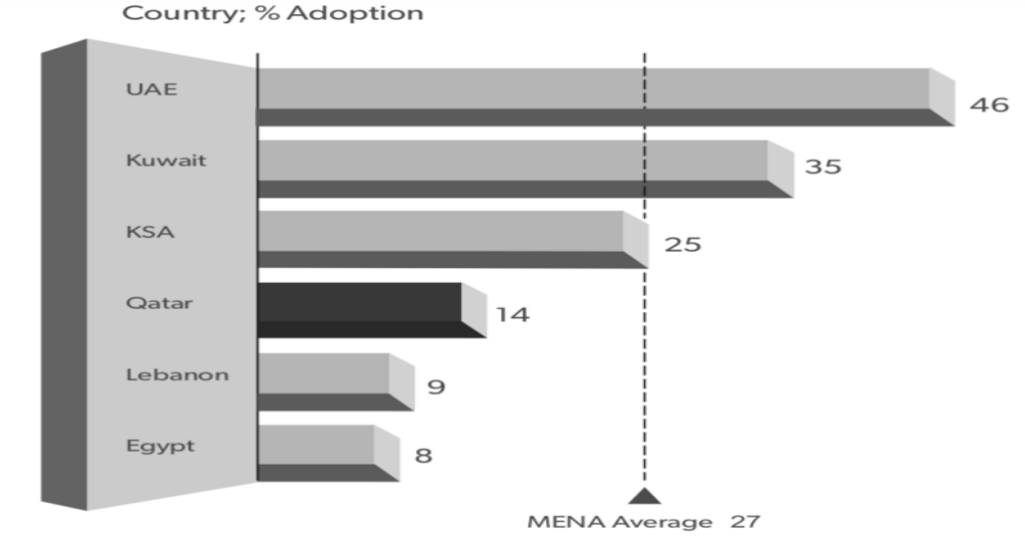

Figure 3.Mobile commerce adoption in MENA countries (Qatar National E-Commerce Roadmap 2017, 2017)

As claimed by Bhatti (2007) numerous M-commerce businesses have failed to meet consumers' prospects and the fundamental reason that causes the lack of adoption of mobile commerce is the absence of trust affecting the intention to buy online (AlGhamdi, 2012; Jing et al., 2008; Sohaib, 2015). Providing that M-commerce is relatively a new business channel in Qatar, there is still a scarcity of understanding how to make the context of mobile shopping more efficient. Therefore, marketing mangers as well as developers shall realize the perceptions of the consumers in order to increase the trust towards M-commerce.

1.3. Research Problem

The concept of building trust in electronic commerce to reaffirm a customer's confidence and build a long-term relationship has already been recognized and studied (Doney and Cannon, 1997; Jarvenpaa et al., 2000; Li and Yeh, 2010; Selnes, 1998).

However, when it comes to M-commerce, it is challenging to build sustainable user trust even though mobile devices are extremely convenient for shopping anytime and anywhere (Siau et al., 2001; Siau and Shen, 2003). The reasons could be because mobile devices have small screens, low resolution, and small keypads. In addition, they are limited in memory, computational power, and battery life (Li and Yeh, 2010). There are other problems associated with wireless networks that make consumers vulnerable to risks when their data is transmitted wirelessly, and these issues include limitations in bandwidth, the stability of connections, and function predictability (Siau and Shen, 2003). Hence, trust does not mean taking risk but rather the readiness to take risk (Li and Yeh, 2010; Mayer et al., 1995).

In this study, trust is decomposed into two areas according to Head and Hassanein (2002) and Hillman and Neustaedter (2017). The first area is called hard trust; which means secure interactions and technology solutions, such as encryption and firewalls that are considered and believed to safeguard customer information (Head and Hassanein, 2002). The second area is called soft trust; which means mainly the privacy of the information and the quality of products and services provided by the vendors (Hillman and Neustaedter, 2017). The latter field of trust cannot be resolved by applying new encryption methods alone as soft trust is principally based on feelings of perceived trust (Luo, 2002).

Understanding the antecedents that support building consumers' trust can aid business owners to gain prosperous outcomes and enjoy competitive advantage in the mobile commerce market (Junqueira, 2016). As a result, Siau et al. (2003) suggest that when factors, like the usability of M-commerce websites or apps; quality of information;

the privacy of customer data; security of mobile transactions as well as vendor credibility; product quality; and culture effects combined together , they can motivate the creation of a favorable relationship with consumer trust in M-commerce.

Although several studies have emphasized on the significance of trust for the consumers to accept mobile shopping (e.g., Giovannini et al., 2015; Hillman and Neustaedter, 2017; Junqueira, 2016), it appears that in this region of the world trust in M-commerce has never been explored and empirically tested. Accordingly, we believe that in a multicultural country such as Qatar, a thorough exploration and validation of motivation factors that promote consumer's trust is crucial and may provide insights for developers and concerned merchants to help them move to a higher level of M-commerce maturity.

1.4. Research Contributions

There are numerous studies that have been conducted in different countries in the world, such as the United States, Japan, South Korea…etc. have already assessed the factors that can affect consumers to trust M-commerce (e.g., Yoo et al., 2008; and others). In the Middle East region, though researchers acknowledge the importance of introducing the factor of trust in adopting new technology (e.g., Eid, 2011), to our best knowledge the prior studies have not investigated adequately how this trust can be formulated, attained, and what determinants can favorably affect consumers in the sector of mobile shopping. As a consequence, the factors that are fostering trust in M-commerce in the Middle East region have not fully comprehended; hence, this research seeks to fill this important gap in literature by proposing a conceptual framework for trust based on the combining the major two factors in the technology acceptance model

(Davis, 1989) and validating it empirically.

Furthermore, as trust can be influenced by numerous factors , environments , together with cultures as signified by (Siau et al., 2003) and culture as it has been examined by some other researchers may impact trust (Komiak and Benbasat, 2008). Thus, limiting this study to a geographic location, which in this case targeting the Qatari market is vital. By directing this research, it does not mean it can be applicable to Qatar only and this is because Qatar is a diverse and multicultural society. The ethnicity of Qatar is made up of 11.6% of Qatari and 88.4% of non-Qatari (*CIA World Factbook*, 2015) and this combination of different backgrounds offers opportunities to explore a larger range of perceptions into the factors that motive consumer's trust towards M-commerce. Thus, another underlying contribution of this research is to measure the proposed model in a particular country and if verified, the findings would generate opportunities to generalized them to other countries.

1.5. Research Objectives and Questions

As mobile commerce is comparatively recent, there is still a lack of research that emphases on the undeniable facets of it. Given that trust is a very closely related aspect, it needs in-depth understanding when applied to M-commerce. Therefore, the objectives of this research are to the broaden the knowledge on what influences the perception of trust among Qatari population in the field of mobile commerce. In addition, to understand to what extent the factors effect consumers trust.

To accomplish the aforementioned objectives, the following research questions have been developed;

1. What are the factors that can influence consumer trust in M-commerce in Qatar?

2. To what extent the proposed factors impact trust on M-commerce?
3. How different groups of consumers perceived trust in mobile commerce?

Answering the research questions is crucial because if they are valid, stakeholders in the mobile commerce value chain including financial institutions and local merchants should make sure to involve the related trust factors into their business strategy depending on the type of products or services they are providing.

Therefore, to deal with these questions, a research method is designed to produce a conceptual framework of the factors affecting consumer's trust towards mobile commerce. The developed model is consisting of factors that are newly explored based on a number of hurdles that are currently impeding the consumers for trusting mobile shopping in Qatar as well as relative factors that are already existing in literature.

1.6. Thesis Outline

The rest of this thesis is organized as follows: Chapter 2 presents the literature review on consumer trust towards mobile commerce as well and the proposed conceptual framework for this study. Chapter 3 discusses the research methodology. Chapter 4 shows the obtained results and findings and in Chapter 5, the major findings are discussed. Chapter 6 concludes this study with by offering theoretical and practical implications; additionally, the limitations and direction for future research are provided.

Chapter 2: Literature Review

The literature review chapter is consisting of four sections and it begins by introducing the concept of mobiles commerce. The next section, discusses in brief the perception of trust, its main functions in increasing the acceptance and adoption of mobile commerce. The technology acceptance theory and how it is related to trust is also illustrated in this section. In section three, the antecedents that promote consumer's trust in Qatar are reviewed thoroughly and the research hypotheses are presented. In the last section, a summary of the conceptual framework of the current study is provided.

2.1. Mobile Commerce (M-commerce)

This section offers an overview about mobile commerce; its history, definitions, the key differences between electronic and mobile commerce, and the advantages as well as the disadvantages of mobile commerce that make some consumers to be hesitant to do online shopping through their mobile devices.

2.1.1. History of Mobile Commerce

Kevin Duffey has originally coined the phrase mobile commerce, which is also known as M-commerce, at the launch of the Global Mobile Commerce Forum in late 1997 (Madan, 2016). In the same year, the first M-commerce services were provided to the public when two mobile-phone enabled Coca-Cola vending machines were able to receive payments via Short Messaging Service (SMS) technology in Helsinki city, the capital of Finland (Ahmed and More, 2011; Shuhaiber, 2016). In addition, Merita Bank of Finland was offering mobile banking services to the clients (Asif, 2011).

In 1998, Finnish mobile operator "Radiolinja" in Finland allowed its customers to purchase and download ringtones through mobile devices (Shuhaiber, 2016). The

following year, Philippines and Japan launched two major local commercial portals. SmartMoney has been developed by the Philippines and it enabled mobile users to conduct several online transactions such as, money transfer, online shopping, as well as bill payments. In addition, Japan's largest mobile phone operators (NTT DoCoMo) has deployed the most successful mobile internet service "i-Mode " (MacDonald, 2003).

Upon the introduction of the aforementioned two platforms, M-commerce has taken off very quickly throughout the succeeding decade (Schniederjans et al., 2013). For instance, in the early 2000, Norway enabled the customers to pay parking tickets via mobile phones, mobile users in Austria were able to buy train tickets, and Japan started selling the airline tickets (Asif, 2011; Schniederjans et al., 2013; Shuhaiber, 2016).

In 2002, Tomi Ahonen has published the first book on M-commerce that was named "M-profits" and a short discussion course has been launched by the University of Oxford in 2003.

Finally, in 2007, the first iPhone was released, and it has moved the M-commerce away from simple SMS systems into the revolution of application-based platform (Madan, 2016; Schniederjans et al., 2013).

2.1.2. Definitions of Mobile Commerce

Mobile commerce, which is also so-called mobile electronic commerce, wireless electronic commerce, or as commonly known as M-commerce can be defined in several ways from different perspectives (Hsieh, 2007; Shuhaiber, 2016).

According to Shuhaiber (2016, p.9), M-commerce is defined as "the ability to conduct electronic commerce transactions over wireless media". In line with this definition, M-commerce has been perceived by some researchers (e.g., Huang et al.,

2008; Shuhaiber, 2016; Turban et al., 2008; and others) as a subset of electronic commerce (E-commerce) enabled by wireless communication. In addition, Tarasewich et al. (2001, p.435) described M-commerce from processes and devices perspective as "the promotion, buying, and selling of goods and services through electronic data communication networks that interface with wireless (or mobile) devices". In other words, it is the activities that can be carried out via a contract between both the seller and buyer on a particular product price, payment method, as well as delivery through the use of wireless device (Shuhaiber, 2016).

Shuhaiber (2016) considers M-commerce to be somewhat a new concept that is growing over the time, and its definitions can be understood from various perceptions. To elaborate, it has been found from literature that there are common elements in M-commerce definitions such as, wireless communication networks, electronic commercial transactions, exchanging services and goods, mobile devices, and wireless handheld devices, like tables and smartphones (Shuhaiber, 2016). Moreover, it has been realized from prior studies that there are some definitions of M-commerce that are general and most probably suiting the concept of mobile business, whilst other definitions are mostly matching the concept of M-commerce transactions. As Turban et al. (2008) citied, the concepts of business and commerce are different and cannot be used interchangeably and this is because the term business is broader and indicates the business-related activities; such as, production and manufacturing, whereas the term commerce refers to the activities related to selling and buying as well as exchanging goods and services. Thus, Shuhaiber (2016) claimed that definition "any business activities" given by (Turban et al., 2008) is fitting the term mobile business (M-business) rather than M-commerce. Cor-

respondingly, the definition "any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/or completed by using mobile access to computer-mediated networks with the help of an electronic device." provided by Tiwari and Buse (2007) is considered to be the most suitable one for this study.

2.1.3. Comparison Between E-Commerce and M-Commerce

As highlighted in the previous section, the term M-commerce can be viewed as "Mobile E-commence", which means it is an extension from E-commerce and has all of the features that traditional electronic commerce owns (Shuhaiber, 2016). However, as claimed by Hsieh (2007) M-commerce is a subset of E-commerce that is operating over wireless networks as well as mobile devices. Feng et al. (2006) argued that although M-commerce can be closely related to E-commerce and is viewed as one of its subsets, M-commerce enjoys unique characteristics and functions that are not available in E-commerce. For instance, mobility that implies portability as well as broad reach, which means vendors and customers can be reached through mobile devices anytime are two of the vital features (Kim et al., 2007). Cho et al. (2007) added localization, convenience, ubiquity, and personalization are among the major features that distinguish M-commerce from E-commerce. Furthermore, Shuhaiber (2016) citied that due to the limitations of terminal devices as well as the usage patterns, the interaction style of M-commerce differs from E-commerce. Likewise, (Zhang and Yuan (2002) studied the technology, business models, and nature of services for both traditional electronic commerce and mobile commerce and outlined the differences. Yet, it has been agreed that, the provided services for M-commerce and E-commerce are similar and can be accessible both thought

telecommunication and computer mediated networks (Shuhaiber, 2016).

To clearly illustrate the relationships between E-commerce and M-commerce, the following Figure 4 helps in explaining how the abovementioned concepts are linked to E-business and M-business.

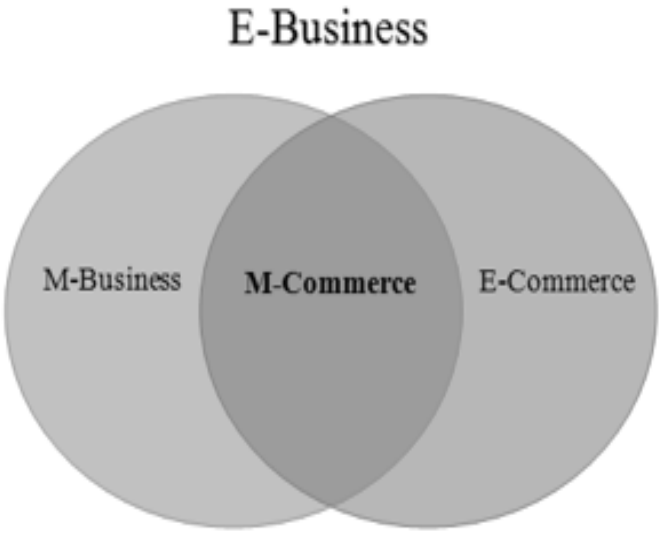

Figure 4. Relationships among electronic and mobile businesses and commences (Shuhaiber, 2016)

As depicted in Figure 4, the concept E-business is broad and consisting of E-commerce and other business models that are as follow (Shuhaiber, 2016);

- **M-business:** when E-business is merged with mobility it yields M-business. Therefore, M-business can be considered as a subset of electronic business that is operating via the use of mobile devices since handheld terminal-based solutions can

enhance the performance and productively of business enterprises beside the web-based and computer-based solutions.

- **M-commerce:** when mobile devices are used to carry out commercial business transactions, the term M-commerce; which belongs to M-business via conducing commercial transactions and E-commerce through the use of mobile devices, is generated.

Based on Figure 4 above, it can be realized that the concept of M-commerce is intersecting both M-business and E-commerce fields, which are all subsets of E-business (Hsieh, 2007; Shuhaiber, 2016).

Finally, Table 1 below gives a summary of the main differences between the concepts of E-commerce and M-commerce (Bhragava, 2017; Surbhi, 2015).

Table 1. Comparison between E-commerce and M-commerce (Bhragava, 2017; Surbhi, 2015)

Basis for Comparison	Electronic Commerce	Mobile Commerce
Definition	Any form of commercial transactions that can be carried out through internet	Any form of commercial transactions that can be carried out through wireless computing devices
Developed	In 1970's	In 1990's
Devices	Computers, laptops	Cell phones, tablets
Platform	Webstores	Webstores (mobile version/ web app)
Mobility	Limited	Broad
Cost	Less costly, since it is developed on webstore platform that uses internet	More costly, since mobile devices required the use of cellular data
Customization	Not possible	Possible
User's Interface	More complicated, as more functions are available	Simple, as functions are simplified

2.1.4. Advantages of Mobile Commerce

There are several unique features and advantages that set M-commerce apart from both M-business and E-commerce and they are as follow;

- **Portability and accessibility:** these are the major features that make the transactions of M-commerce more convenient than E-commerce; and businesses reach the consumers faster (Surbhi, 2015). In addition, these characteristics do not restrict the user to be physically in front of the desktop computers in order to conduct any business transactions; but, users have the chance to make decisions and do mobile commence anytime and anywhere assuming the coverage of mobile network is adequate (Hsieh, 2007; Junglas and Watson, 2006). Moreover, as the devices

powered by mobile commerce are readily accessible, the chance for businesses to make higher sales is great (Surbhi, 2015).

- **Localization:** this is one of the most distinct feature of M-commerce as it offers specific value-added services geographically (Junglas and Watson, 2006). For example, localization based allows the business entities to promote their services and local information directly to the mobile users (Junglas and Watson, 2006).
- **Reachability:** this feature offers mobile users to be always connected unlike E-commerce; in which, reachability is limited to either plug-in or computer level (Junglas and Watson, 2006; Shuhaiber, 2016). Additionally, the user has the option to restrict the reachability features to particular people and at specific times (Shuhaiber, 2016).

2.1.5. Disadvantages of M-commerce

Although several academic scholars and researchers expect M-commerce to drive fundamental changes in the way consumers are conducting their commercial transactions (Hsieh, 2007), it has drawbacks that may prevent consumer's trust towers mobile commerce technology. Following are the main issues that mobile users may face while carrying out financial transactions;

- **Screen size and battery life:** mobile devices in comparison to computers and laptops have small screen size and may have low resolutions and this can constraint the users from interacting with mobile applications (Cook and Goette, 2006). In addition, as battery life on mobile deceives is short, this could force the consumers to complete their online transactions quickly in order to avoid any disconnection (Cook and Goette, 2006; Tarasewich et al., 2001).

- **Technical barriers:** some of the limitations and accessibility features that prevent users to do mobile commerce transactions as cited by (Cook and Goette, 2006; Park and Yang, 2006) include bandwidth, connectively, and high cost. These issues are serious for mobile users especially when the locations the consumers want to conduct transactions have poor coverage (Shuhaiber, 2016).

Given the aforementioned cons associated with mobile commerce, it can be inferred that mobile users still have less trust in the security of providing their payment and personal details on smartphones when compared to stationary desktops or laptops.

2.2. Trust

When dealing with consumers the concept of trust becomes essential as having a good relation between sellers and buys need a high level of trust. Therefore, this section presents the concept of trust and its characteristics from different perceptions. It then provides an overview of the technology acceptance model and how it can be related to trust. The section closes by presenting the recent studies that have adopted the technology acceptance model for consumers trust and adoption in the context of mobile commerce.

2.2.1. Definitions of Trust

The word trust has been seen to be used very frequently in the daily life (Shuhaiber, 2016), yet according to Abdui-Rahman and Hailes (1997) it is an ambiguous concept that has several meanings (Hardin, 2002; Pittayachawan, 2007). In addition, McKnight and Chervany (2001) claim that trust is a very complex and has multi-dimensional phenomenon. For example, phycologists perceive the concept of trust as a personal trait, sociologists see it a social structure, and economists view it as a tool of an

economic choice (Lewicki, 2006). Hence, it has been recognized by several researchers that trust is hard to be captured as well as studied (Head and Hassanein, 2002; Pittayachawan, 2007) and it is also very challenging to scholars and researchers who are undertaken a study related to trust topic to define it precisely and clearly (Pittayachawan, 2007; Shuhaiber, 2016).

Furthermore, numerous researches on the topic of trust have been carried out more than 6o years ago and studies are still conducted up to date (Shuhaiber, 2016). In the earlier studies, researchers (e.g., Read, 1962) were linking trust with the individual's perceptions of confidence towards others' intentions. On the other hand, recent studies on trust focus more of understanding its efficiencies (Shuhaiber, 2016). For instance, Araujo and Araujo (2003) cited that trust signifies favorable beliefs regarding dependability, reliability, and confidence on an individual, process, or even object. From the aforementioned definitions some elements related to trust can be observed such as confidence, reliably, and belief.

Other trust's elements that have been found in literature and led to trust in E-commerce are perceived security, which means an individual feels safe, secured, and comfortable about relying on the online vendors (Rempel et al., 1985). The second element is perceived risks, which implies that negative outcomes may results in uncertain situations (McKnight and Chervany, 2001).

Finally, the field of human computer interaction frequently borrows the definition of trust from business, and Gefen (2000), Hillman & Neustaedter (2017), and McKnight, Choudhury, & Kacmarc (2002) described trust with respect to trustee (the trusted entity - vendor) elements that are: ability, integrity, and benevolence. Ability, is

associated with proficiencies and skills of the trustee in a particular situation. Integrity, deals with if the trustee is having ethical as well as moral values that are considered acceptable by the trustor (the entity who places trust - consumer) and benevolence, is related to the level; in which, the trustee has empathy and support towards trustor. The perceptions of these components can influence the trustor to initiate trust towards the trustee.

2.2.2. Functions of Trust in Online Shopping

As claimed by Pittayachawan (2007) trust has be realized for several years to be vital factor that can influence consumer's intention to shop online and the prime short-term functions of trust in online shopping include the following;

1. Encourage customers to buy goods and services with confidence even if they online seller is unknown (Akhter et al., 2004)
2. Lead consumer to believe that the security of the online store is reliable (Pittayachawan, 2007)
3. Make transactional process simple (Ratnasingam and Pavou, 2003), as having an easy to use online store can reduce complexity of consumer's decision by assuming things will be fine and ignoring the probability of facing any undesirable consequences (Heimer, 2001)

Alongside the short-term functions, trust also supports long-term beliefs to online vendors and its main functions are as listed below;

1. Improving the acceptance as well as adoption of online shopping (Lee et al., 2006)
2. Maintaining long-term relations between customer and online vendor (Pittayachawan, 2007)
3. Enhancing customer satisfaction and loyalty (Thatcher and George, 2004)
4. Reducing concerns related to privacy (Chellappa and Sin, 2005)
5. Leading the consumers to forgive the occasional mistakes caused by the online vendors (Green, 2006)

The short and long-term functions motivated by trust can eventually increase sales and growth of online shopping (Pittayachawan, 2007). Hence it can be understood if trust occurs, it will be a success factor for online businesses including both electronic and mobile commences (Stockdale and Standing, 2003). Accordingly, it is tremendously important to all online businesses regardless whether they are recently started or have been utilizing online shopping for years to build consumer's trust (Pittayachawan, 2007).

2.2.3. Technology Acceptance Model and Trust in M-commerce (TAM and M-Trust)

Since in mobile commerce the seller and buyer cannot meet each other face-to-face and the only way to meet is via the online store, it can be considered that the functions of both long-term and short-term trust in the online commerce are more complicated than traditional commerce. Additionally, as trust relations in M-commerce exists amongst three elements that are: vendor, consumer, as well as the mobile webstore or app; therefore, the success of mobile commerce centers on the keenness of consumers to accept and adopt new technology as well as participate in tasks that use devices and systems different from what they have used before (Cho et al., 2007). As a result,

technology acceptance model (TAM), which is the most extensively adopted theory in recent studies is important to consider because of its well-known robust performance in the field mobile commerce.

2.2.3.1. Technology Acceptance Model – TAM (Davis, 1989)

The technology acceptance model is a theoretical framework that identifies the causal relations between the external variables, the belief and attitudes towards using the technology and the actual usage behavior (Davis, 1989). In addition, it is one of the most studied models in order to anticipate technology acceptance and in the field of online commerce it has been confirmed as of the predominant theory for consumer's adoption (Chan et al., 2003).

The original TAM model presented in Figure 5 proposes that when a person is dealing with a specific technology, a number of determinants, predominantly perceived ease of use and perceived usefulness can impact his/her decision on how and when he/she will use that technology (Sottilare, 2015). According to (Davis, 1989), perceived ease of use indicates the extent to which an individual believes that using a specific technology would be free of effort; whereas, perceived usefulness refers to the extent to winch an individual believes that using a specific technology would improve his/her performance in doing the task. From these fundamental determinants, it can be recognized that individuals tend to decide whether to use a new application or website only when it will help them in preforming their tasks better.

In addition, TAM assesses the cognitive, affective, and behavioral responses of a user regarding the particular technology. The perceived ease of use and perceived usefulness constructs represent the cognitive responses of a user to use the given

technology. Then, these responses can influence the affective responses, which indicate the attitude towards using the technology as well as and behavioral responses that signify the intention to accept it and use it in the future (Davis, 1989).

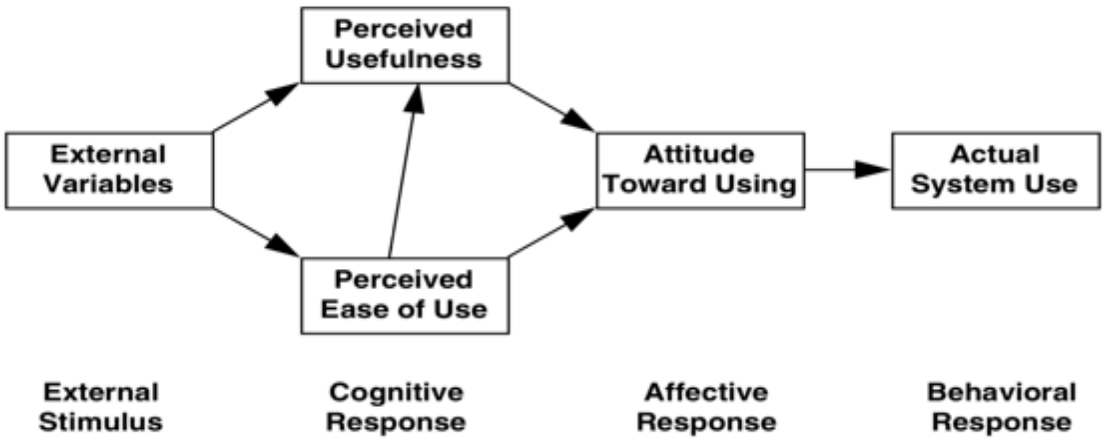

Figure 5. Technology acceptance model - TAM (Davis, 1989)

2.2.3.2. Extensions of the Original Technology Acceptance Model

Due to the continuous growth of introducing innovate and more sophisticated devices, the modification of the original TAM have become necessary (Nysveen et al., 2005). Thus, TAM model has been revised by Venkatesh and Davis (2000) into TAM2 by incorporating factors associated with subjective norms, such as social influence.

As an advancement of TAM2, TAM3 has been proposed by Venkatesh Viswanath ; Bala (2008). In TAM 3 the antecedents of the construct perceived ease of use have been divided up into two categories that are anchor determinants and adjustment

determinants (Venkatesh Viswanath ; Bala, 2008). Anchor determinants refer to the user's beliefs about technology and it is consisting of elements like, computer self-efficacy that indicates how the users are comfortable with the technology; and perception of external control, which indicates how much support the system has in order to be accepted. On the other hand, adjusting determinants include two elements, which are: perceived enjoyment that indicating whether using a system is enjoyable or not and objective usability, which refers to whether the effort was really required to perform the task (Hotchkissr, 2014).

2.2.3.3. TAM and M-Trust in Recent Studies

Table 2 summarizes the core factors that have been incorporated in the technology acceptance model and examined in the latest studies that are related to consumer's trust and intention towards mobile commerce.

Table 2. Recent Studies on Consumer's Trust and Adoption towards M-commerce

Core Factors	Outcome	Study
– Perceived Cost – Perceived Entertainment – Perceived Usefulness	Attitude towards using M-Commerce	Zheng et al., 2012
– Perceived Ease of Use – Perceived Usefulness – Perceived Mobility – Perceived Compatibility – Social Influences	Intention to use M-Commerce	Batkovic and Batkovic, 2015
– Ease of Use – Usefulness – Enjoyment – Mobility – Contextual Offer – Online Trust – Mobile Trust – Offline Trust	Intention to purchase via mobile devices	Giovannini et al., 2015
– Website Design – Website Reliability/ Fulfillment – Website Security, Privacy, and Trust – Website Customer Service	Online purchase intention	Lee et al., 2016
– Design aesthetics – Use of use – Usefulness – Customization	M-Commerce trust	Li and Yeh, 2010
– Interactivity – Customization – Usefulness – Ease of Use – Responsiveness – Brand Name	Customer satisfaction and trust in M-Commerce	Suki, 2011
– Interface Quality – Information Quality – Perceived Privacy	User trust in M-Commerce apps	Deepika and Karpagam, 2016
– Familiarity – Compatibility – Perceived Security	Trust in M-commerce	Alqatan et al., 2016
– Perceived Privacy – Perceived Security – Perceived Ease of Use – Quality of Information – Disposition to Trust – Reputation – Willingness to Customize	Trust in M-commerce	Junqueira, 2016

2.3. Antecedents of Consumer Trust Towards M-Commerce in Qatar

Based on the prior studies listed in Table 2 we propose that trust is a vital factor that can influence the acceptance of M-commerce. In addition, as claimed by (Gefen et al., 2008), trust is one of the key influential factor towards mobile commerce adoption. However, it appears that only few studies have examined trust antecedents in the context of mobile commerce as shown in Table 2.

Therefore, for this study, our aim is to explore the determinants motivating online user trust in mobile commerce based on the key inhibitors behind the low rate of mobile commerce penetration among the Qatari population as well as existing literature.

According to Qatar National E-Commerce Roadmap 2017 (2017), there is a number of hurdles that are currently impeding the consumers for trusting mobile businesses and they are as discussed below;

1. For mobile commerce, payments are critical, and it is still the biggest obstacle for Qatari consumers. There are several reasons for this and one major reason is the security. In Qatar, there are many users who are still having uncertainties regarding mobile payments and they perceive that, their financial information is not secured when used for mobile transactions. This issues along with those related to trust and privacy need to be resolved by providing certifications, Trustmark, consumer's help and support (*Qatar National E-Commerce Roadmap 2017*, 2017). Another important issue is that, most of the issued cards are not having the capabilities to be used for online payments and though most of the countries are accepting debit cards to be used for online payments, in Qatar many banks do not permit mobile

purchases to be made by using debit cards. Latest statistics indicate that 49% of Qatar consumers have debit cards and only 29% have credit cards (Qatar National e-Commerce Roadmap 2015, 2015) and this has made the majority of online payments to be made on a cash on delivery basis (*Qatar National E-Commerce Roadmap 2017*, 2017). Accordingly, for this study security and privacy can be perceived as crucial factors that can improve mobile user trust in Qatar.

2. There are currently limited electronic and mobile commerce websites and apps available in Qatar and consumers are not aware of the few existing mobile shopping options. This is mainly due to the lack of local offers and advertisements. Additionally, the available websites and apps are having several usability issues, such as a website or app that is (1) not attractive; (2) using navigation tools that are not user friendly; (3) and does not meet the needs of the diverse segments of the population. Mobile vendors may still think that by merely building webstores and apps, consumers will start purchasing. However, users are less patient with apps and websites that are difficult to understand and use. Moreover, they are looking for websites where they can find the information they seek quickly and with little effort (*Qatar National e-Commerce Roadmap 2015*, 2015). From these observations, it can be assumed that, well-designed mobile commerce websites or apps can offer good recognition regarding the vendor; hence, M-commerce usability and localization are essential factors to be considered in this research in order to enhance trust among Qatari consumers.

The following trust influences have been extracted from the report of consumer's lifestyle in Qatar , that offers information on the unique attitudes, behaviors, and spending patterns of consumers who are residing in Qatar (*Consumer Lifestyles in Qatar*, 2015).

3. It has been observed in Qatar that social media influencers do not promote mobile commerce webstores and apps (*Consumer Lifestyles in Qatar*, 2015). As cited by Oppenheim (2016), although people generally take advice from family members and close friends regarding purchases, today, it is becoming more and more popular to seek advice from social media influencers. Since Qatar has been reported to have the highest global penetration of social media through mobile devices and popular social media influencers have high favorable impact on Qatari consumers when advertising brands (Iqbal, 2017); thus, this study aims is to investigate whether there are direct or indirect significant relationships between the endorsement of social media influencers and trust in mobile commerce websites and apps.
4. Another statement that has been made is that current local mobile commerce webstores and apps do not offer luxury brand products (*Qatar National e-Commerce Roadmap 2015*, 2015). According to Vel et al. (2011), an existing perception among Arab citizenry that has carried forward over the years is that goods manufactured in Western countries are more reliable and higher in quality than products produced in the Middle East and Africa region. In addition, Qatari consumers have embedded doubts towards mobile commerce websites that offers not brands that are not familiar to them as

they believe these brands are not dependable especially when it comes to mobile payments, which is one of the core concepts of the success of any online commerce. This can be witnessed in the luxury buying behavior, which in Qatar is not limited to upscale society but has extended to middle and lower levels of society over time (*Consumer Lifestyles in Qatar*, 2015). Thus, offering luxury brand products through M-commerce websites or apps may be considered in this study to influence consumer's trust positively in the Qatari society.

After identifying the potential factors that may be incorporated into the technology acceptant model, this research will explore and assess how localization of mobile stores, offering of luxury brands, and endorsement from social media influencers can promote Qatari consumers trust. Furthermore, perceived usability, privacy, and security factors, which are already existing in literature will be included in the proposed conceptual model and examined to find out how they are shaping consumer trust in the context of mobile commerce. Therefore, the following sections are discussing in details the aforementioned trust factors as well as their associated hypotheses that have been developed for this research study.

2.3.1. Mobile Commerce Localization

This subsection provides an overview of the concept of localization in mobile commerce but before that it briefly discusses the terms globalization and standardization in the context of online shopping. The related literature is also reviewed and the effect of localization on consumer trust in mobile commerce along with the associated hypotheses are demonstrated in the end of this subsection.

2.3.1.1. Globalization, Standardization, and Localization of Mobile Webstore

According to Levitt (1983), in order for vendors to globalize their mobile businesses, in which operating their websites or apps and selling their products and services in the same way all over the world as visualized in Figure 6 they can either standardize or localize.

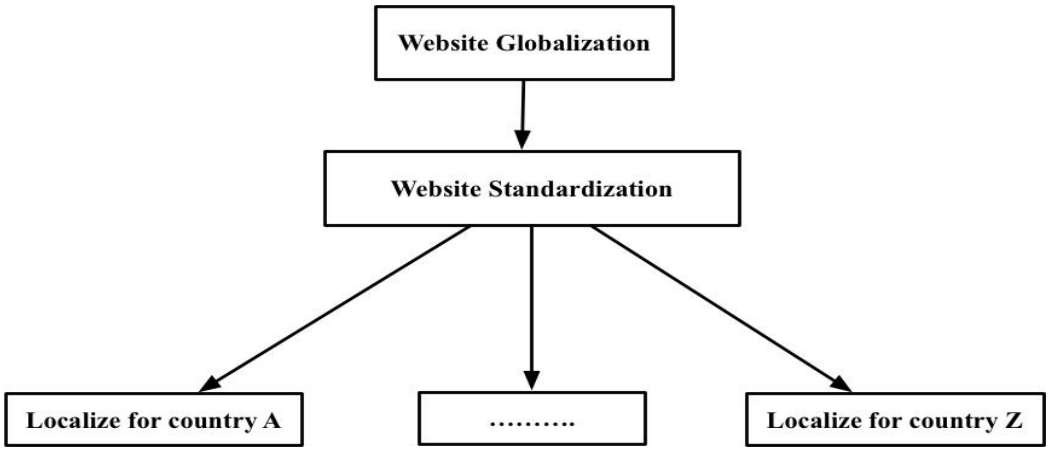

Figure 6. Globalization, standardization, and localization of the webstore

Standardization process as given by Jain (1989), is an approach at which global market is considered humongous; hence, marketers are offering standardized products as well as services. Localization process on the other hand as stated by Singh et al. (2012), is an approach that depends on preparing products and altering them culturally and linguistically so that they can be sold and used in a particular country or region of the world.

Jain (1989) claimed that, standardization process may not be the most successful and effective approach for mobile business to influence and attract global consumers to shop through their websites or mobile applications. *Internet World Stats* (2017) reported, the websites nowadays are not only dominated by users who are speaking English, but also users who are speaking Chinese (804.6 million), Spanish (337.9 million), Arabic (219 million), Portuguese (286.5 million), Indonesian/Malaysian (168.8 million), and French (118.6 million). As a result, online vendors have to take a wise decision whether they have to localized websites and mobile shopping applications to satisfy the online multilingual global market, or standardize them, which may either serve the huge users with different culture or may not (Ibrahim et al., 2013).

2.3.1.2. What is Website Localization

Website localization as defined by (Chao and Chen, 2012; Singh and Boughton, 2005) is the process of making the website gets customized in a way that looks local to users of particular language or belong to specific cultural group.

Many people mixed between localization process and translation and they think it is merely translating the text from language to another one; yet, localization is more related to content localization as well as culture customization (Ibrahim et al., 2013). Thus, when mobile vendors globalize their webstore or app, it is of utmost importance to realize that, webstores' usability can be enhanced by recognizing that language, cultural expectations, and trust are very critical to the users (Singh and Boughton, 2005). Moreover Singh et al. (2012) stated that language, symbols, signs, and web content should not create any frustration, confusion, offensiveness to the individuals as these features differ from culture to culture.

2.3.1.3. Localization Framework

Singh et al. (2009) proposed a localization framework that categorizes webstores' localization into four main categories that are: content localization; cultural customization; local gateway; and translation quality. Content localization and cultural customization are consisting of subcategories.

- **Content localization:** refers to the overall understanding for the mobile vendor in order to localize the webstore and fulfil their customers' needs. This category comprises of currency, navigation, and support (Ibrahim et al., 2013).
- **Cultural customization:** refers to adapting local culture when promoting products or services to a specific country. In addition, it takes into consideration that the design of the website, layout, colors, and graphic should be acceptable in the localized region (Singh et al., 2009).
- **Local gateway:** implies that global users should be able to easily find the localized webpage (e.g., country or language-specific website) (Ibrahim et al., 2013).
- **Translation quality:** indicates how well the foreign webstore is translated into the localized language in terms of vocabulary, concepts, and, idioms (Singh, 2011; Singh and Pereira, 2005a)

2.3.1.4. Localization Factors

The study of Cyr and Trevor-Smith (2004) has demonstrated that when designing a webstore, the preferences are varying from culture to another; therefore, to localize websites or application, several factors M-commerce owners and developers should take into consideration as they are affecting the perceptions of the user about the webstore or app. Some of these localization factors are language, culture, currency, color

preferences, layout, and time zones. Singh (2011) added, localization and cultural customization can increase mobile commerce sales beside causing effective usability.

Although there are various variables that should be taken into account for effective localized website or application. In this study, the focus will be on two key factors of localization (i.e., incorporating language and local currency in M-commerce) to enhance mobile commerce experience and eventually lead to trust towards the mobile store.

2.3.1.5. The Effect of Localization on M-Trust

Online users prefer reading web content written in their native language; in addition, users prefer to shop online from localized webstore (Singh and Boughton, 2005). A study on cross-national attitudes towards online shopping shows that adopting the culture, such as language, in websites can positively influence consumers to shop online (Singh et al., 2006a).

Several studies have found that there is an increasing need for localized webstores in different countries as they increase the intention to purchase online and enhance the usability of the website. For example, in the case of trust and purchase intention, research by Lynch et al. (2001) shows that Spanish and French consumers strongly prefer websites in their local language. Similarly, prior research on website localization in Arab countries confirms that reflecting cultural aspects in mobile store designs has a significant impact on purchase intention (Al-Sedrani and Al-Khalifa, 2012). Moreover, the study illustrated that, Arab consumers prefer the prices of the products or services to be in their local currency and the information to be periodically updated, as outdated details on currency conversions for example can lead to a reduction in the acceptance of the webstore (Al-

Sedrani and Al-Khalifa, 2012).

As for localization with perceived usability, many studies have confirmed that localized websites can drastically reduce the cognitive effort for processing information on the website and can ultimately lead to both easier navigation and positive attitudes towards the websites (Luna et al., 2002; Nasrul et al., 2012).

Mobile consumers favor localized websites and tend to interact more with them (Singh and Pereira, 2005b). In addition, mobile users have a better experience interacting with webstores localized to their cultures in terms of ease of use and usefulness (Baack and Singh, 2007; Singh et al., 2006b); thus, the following two hypotheses are proposed.

- **H1:** Localization of M-commerce webstores or apps has a positive influence on M-Trust.
- **H2:** Localization of M-commerce webstores or apps has a positive influence on perceived usability.

2.3.2. Social Media Influencers

In this subsection the terms communication and social media are introduced. After that social media influencers and their role in marketing, the effect on trust in mobile commerce are presented. Finally, the related hypotheses are postulated.

2.3.2.1. What is Communication?

According to Cobley and Schulz (2013), definition and knowledge related to the concept of commutation have been significantly changed with regards to its nature, scope, purpose, and channels. Hence, communication can be defined as a social process that can be conducted in different approaches so that people can share information as well as keep in touch with others (Brorsson and Plotnikova, 2017). Cantoni and Danowski

(2015) stated that, the advancement of technology and the foundation of globalized perception regarding communication together made the social process complicated and consequently contemporary communication platformers emerged. These new communication channels are considered to be an alternate of the old-fashioned face-to-face communication and they are also becoming a crucial part of the day-to-day interpersonal communication (Brorsson and Plotnikova, 2017).

In order to clearly understand the concept of communication, Lasswell (1948) proposed the well-known classical model that is sum up in five questions "Who Says What in Which Channel to Whom with What Effect?". Lasswell's explained each of the five questions in his linear model illustrated in Figure 7 as follows (Wenxiu, 2015);

- **Who:** the person who communicates the message (e.g., social media influencer)
- **What:** the message that must be transmitted
- **Channel:** what medium has been used to transmit the message, (e.g., social media platforms)
- **Whom:** the target audience (e.g., consumers)
- **Effect:** the outcome obtained after transmitting the message, (e.g., consumer's trust and intention to purchase)

Figure 7 illustrates how Lasswell's communication model transmits the message from "who" to "whom"

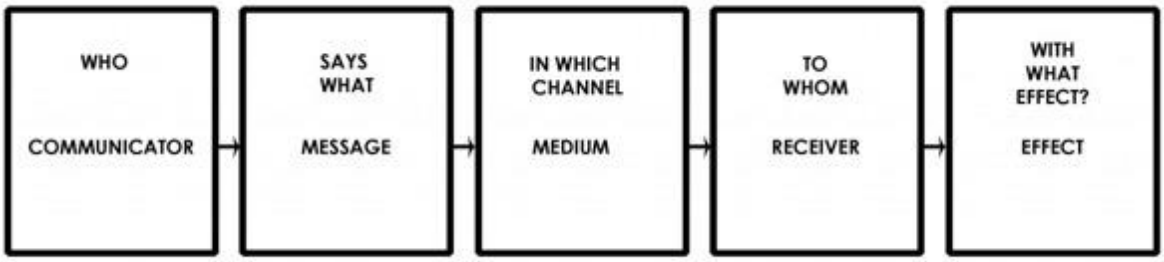

Figure 7. Lasswell's communication model (Lasswell, 1948)

2.3.2.2. Social Media

Social media, which can be described as a digital platform allows people to keep in touch with other people and share information, is one of the most widespread new communication channels (O'Leary et al., 2014). The reasons behind the popularity and importance of social media are: (1) it offers more freedom to the users to share and express their thoughts as well as expand their social networks (Cheng et al., 2017); (2) it builds synergy between customers and organizations (Hansen and Machin, 2013); and (3) it provides opportunities for new business models regarding online and mobile branding (Barcelos et al., 2018). Furthermore, according to *Statista* (2017), global sales on promoting in social media platforms has increased by 27% from 2015 to 2016; additionally, it is expected that in 2020 the number of users who are following social media channels will reach almost 2.95 billion.

2.3.2.3. Social Media Influencers

Social media influencers as termed by Gensler et al. (2013) are normal people who have the capability to strengthen the reputation of a brand by simply sharing

contents and messages via their social media platforms such as, Instagram, Snapchat, Facebook…etc. They are also considered as a third party endorsed who can influence a huge number of audience via tweets, blogs, posts, or any other means of social channels (Freberg et al., 2011).

In addition, as cited by Stansberry (2012), since social media influencers are considered as online opinion leaders, their concept has originated from one of the earliest communication theories that are called Two-step flow and Multi-step flow.

The two-step flow suggests that first opinion leaders are receiving the messages through mass media. They are then passing these messages by using interpersonal communication to less active members of population in order to influence them (Katz, 1957). Prior researches, which examined the Two-step flow theory found out that in the internet context the information tends to pass in a multi-step flow with several different interactions and directions (Burt, 1999). The multi-step theory includes the individuals who are outside the mass media as well as the opinion leaders (Weimann, 1982).

Parallel to opinion leaders, the internet can provide countless amount of information to every online user, yet the huge amount of information at user's fingerprints requires trusted and reliable sources, like social media influencers in order to transfer this information and at the same time advice the audience. Thus, the concept social media influencers can be explained by the two above-mentioned theories (Stansberry, 2012).

Figure 8 shows the two-step approach at which social media influencers are spreading through social media channels the messages to the less active online users.

The multi-step method is also illustrated in Figure 8 at which the less active

online users are disseminating the messages to other people (e.g., friends, family) (Burke, 2017).

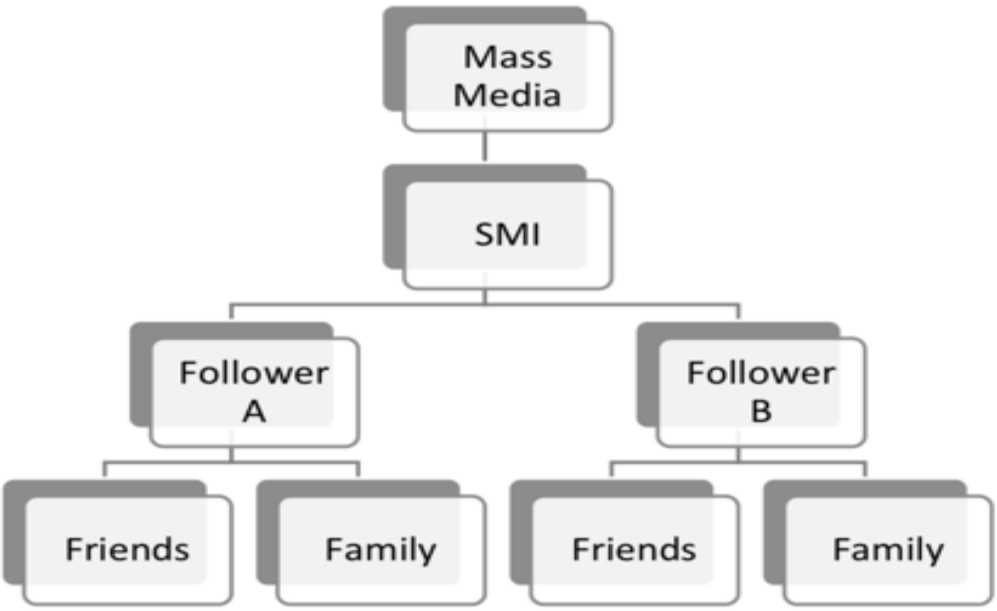

Figure 8. Two-step and multi-step communication flow (Burke, 2017)

Brorsson and Plotnikova (2017) highlighted that, it is difficult for the companies to identify the most suitable influencer in order to obtain their desirable outcomes. However, some characteristics of influencer can be taken into consideration and such aspects are the number of followers, posts, as well as the goal of the company to use influencers. Moreover Ioanid et al. (2015) outlined that the main characteristics that as: (1) having a good trustworthiness; (2) being involved in many social media activities; and (3) enjoying large number of online users who are following them.

2.3.2.4. Social Media and Influencer Marketing

As mentioned by Keller and Berry (2015), the marking of influencers is a tactic that focuses on using strategic leaders in order to drive the brand messages to a greater group of customers. Burke (2017) claimed that compared to traditional advertising, the influencer marketing generates on a yearly basis 11 times more return on investment. Moreover, although it is possible for brands nowadays to advertise through social media platforms, influencers are used since they are perceived as having honest and reliable reputation. Burke, (2017) further explained, the endorsement from social media influencers are usually views as earn and not paid media as they are considered to be trusted as well as authentic sources to the customers. Furthermore, the main motive why consumers are drawn to social media influencers as said by Harrington (2016) is that, what influencers are sharing from videos, and snaps together with their open-door policy lead the customers to feel as they are receiving from their friends' tips, advices, and recommendations that are genuine. Hence, it can be realized that social media influencers are basically online friends who endorse and recommend products and services they have already tried instead of salespersons who are usually trying to sell the products on the doorstep. Analogous to offline leader, audience are receiving the information via what they perceive as interpersonal communication from the social media influencers who are considered to be online opinion leaders, rather than receiving the information directly from mass media (Stansberry, 2012).

2.3.2.5. The Effect of Social Media Influencers on M-Trust

Social media influencers, in contrast to traditional celebrities, operate on many types of platforms like YouTube (YouTubers), and Instagram (Instagrammers) and are

known only to a particular segment of the population (Marwick, 2013; Nadezhda and Othman, 2017). Moreover, currently, companies are inviting different kinds of influencers to their sites who have a high number of followers and popularity in order to attain their promotional goals of selling products online (Freberg et al., 2011). Thus, these influencers are communicating effectively with their followers and are playing a significant role in gradually diminishing customer perceived risks and building customer trust in mobile commerce (Chatterjee, 2011).

The reason why social media influencers are trusted is that although influencers use social media to encourage their followers to buy from sponsored companies, many followers perceive this as a way for the influencers to express themselves as individuals and not necessarily as marketing (Smith, 2010). This means that communication on social media platforms is all about transparency, which makes the consumers believe that the information given by the influencers is more truthful and reliable than other sources (Parikka, 2015; Reza et al., 2014).

Several studies in the context of marketing have found that perceived trustworthiness and credibility are the main factors that make social media influencers more effective in promoting brands and enhancing purchase intention for target customers (S. Chu et al., 2013; Everard and Galletta, 2005; Pornpitakpan, 2004; Silvera and Austad, 2004).

Furthermore, consumers perceive trust as "the degree of confidence that a source is motivated to communicate valid assertions" (Willemsen et al., 2011, p. 424). This indicates that even if M-commerce vendors, as well as developers, are experts in their area, they might not be seen as trustworthy. On the other hand, when consumers see

reviews from influencers who are confident, they may likely judge them as more credible and reliable since they are giving honest opinions about the products or services. This implies that users are more engaged with influencers than with companies and they are more likely to trust the information regarding a product or service from such influencers; this subsequently leads to the intention to buy the products online as well (Cheong and Morrison, 2008).

Recognizing the successful power of social media influencers and the recommendations delivered to the consumer by them, the following hypothesis is proposed.

- **H3:** M-commerce apps or websites endorsed by social media influencers has a positive influence on M-trust.

Additionally, Lu et al. (2005) and Moorty et al. (2014) found that social influence has a significant impact on both perceived usefulness and perceived ease of use. In their studies, they identified a connecting relationship between social influence and adoption of mobile technology. As social media influencers are considered part of the social influence factor, influencers can also impact usability perceptions of M-commerce webstores or apps. This suggests the following hypothesis.

- **H4:** M-commerce webstores or apps endorsed by social media influencers has a positive influence on perceived usability.

2.3.3. Luxury Brands Products

The concepts of luxury as well as the new luxury are introduced in this subsection. The main motives that lead consumers to buy luxury brand products through their mobile devices are also discussed. The literature related to luxury products and

consumers trust are presented and the associated hypotheses are provided.

2.3.3.1. The Concept of Luxury

According to Belgin (2016), the term luxury cannot be defined merely in one way, as it has several elusive parts owing to the substantial changes in this segment. These changes in fact has made many authors to think about the latest perceptions of what luxury brand products are by taking into considering that the meaning of luxury varies depending upon client's perceptions and viewpoints as well as personal and interpersonal motivations (Vigneron and Johnson, 2004). Thus, it is difficult to come up with a common definition of the term luxury (Belgin, 2016).

As cited by Brun and Castelli (2013), luxury brand products have been always associated with wealth, uniqueness, and power. Additionally, Oxford Dictionary ("Definition of luxury in English," 2018) has defined the word luxury as "A state of great comfort or elegance, especially when involving great expense". Based on the two aforementioned definitions, it can be inferred when products come at great price, they are assumed to be luxury.

The price of luxury brand products as claimed by Belgin (2016) has a high relationship with the quality; at which, quality refers to the measurable and tangible functions of an item. Yet, this relationship has been criticized by some authors (e.g., Kapferer and Bastien, 2012) who argued that luxury brand products are intangibles and they are mainly linked with ethics and values; furthermore, these products are offering the feeling of pleasure.

Wiedmann et al. (2007) addressed that, when the products cannot be afforded by all segments of society then it can be assumed to be luxurious. However, nowadays

every individual has been given the opportunity to access luxury and this is completely opposite to the traditional and old view of luxury wherein upper-class people are the only individuals who have the right to enjoy luxury brand products (Kapferer and Bastien, 2012).

2.3.3.2. What is New Luxury?

Over the last decade the market of luxury brand products has increased noticeably and this huge growth could be likely related to the trend of "democratization", namely, making luxury products available anywhere in order to increase the number of clients (Uché Okonkwo, 2009). This is a very powerful trend since products and brands that used to be exclusive are currently consumed by the masses (Belgin, 2016). Silverstein et al. (2008) highlighted that, although new luxury can be reached by the masses, it still has superior levels of quality as well as flavor when compared to the ordinary goods. Additionally, with the new luxury brand products, it is possible to develop a great emotional engagement as these products appeal with emotions, which is different from the traditional luxury that used to express a feel elitism and not emotions. For instance, consumer is attracted to Hermès handbag, which is considered as a traditional luxury brand product, for price and not emotions (Belgin, 2016).

Given that, nowadays the range of the products from the same category is wider, hence the prices of the items are varying. Moreover, in order for luxury brands to reach the majority of the consumers, they included lower-priced goods into their ranges from cosmetics to clothes with a volume that is much more than the traditional luxury products (Okonkwo, 2010). Table 3 illustrates the main differences between the tradition luxury, new luxury, and ordinary products (Belgin, 2016).

Table 3. Comparison between the tradition luxury, new luxury, and ordinary products (Source: Belgin, 2016)

Characteristics	Traditional Luxury Products	New Luxury Products	Ordinary Products
Affect	Aloof	Engaging	Bland
Social basis	Elite	Value driven	Conformist
Accessibility	Exclusive	Affordable	Ubiquitous
Price	Expensive	Premium	Low cost
Quality	Handmade	Mass artisanal	Mass produced

2.3.3.3. Luxury Brands Products and Mobile Shopping

According to Katawetawaraks and Wang (2011), people may have various motivations to do online shopping via the use of computers or even mobile devices; yet, they can be fitted into four classifications that are as follow;

- **Convenience:** when mobile consumers are buying luxury brands products they are nowadays prioritizing the convenience. Although touching and seeing such an expensive product is necessary before making any purchase, consumers have a thought that luxury brands are always trusted so when an online store is offering these products, luxury clients will buy them through the website or app as this method is more conformable than visiting the physical stores (Zorzini, 2015). As mentioned by Adams (2013), since luxury consumers do not have much disposable time, and sometimes physical stores might not be available in where they live (Pham, 2017); hence, online stores are more attractive for them as they can shop anytime and anywhere at their convince (Hofacker, 2001).

- **Availability of the information**: before the luxury consumers make any purchase, they can do quick search for the information they need regarding the item, this can be found from the provided description of the luxury product, images, recommendations, and reviews from others (Katawetawaraks and Wang, 2011). Furthermore, consumers like to shop luxury brand online because they can compare the information found in online boutique with others to decide from which website or app they can buy the luxury item (Pham, 2017).
- **Available products and services**: sometime luxury brands are introducing exclusive lines online that drive the consumers to shop via website or app. For example, Burberry brand provides products straight from the runway to the online boutiques and in limited pieces before these items hit the physical stores (Pham, 2017).
- **Cost and time efficiency:** Pham (2017) claimed that online consumers can get luxury brand products at lower price as they have better access to both sales and promotions and as Katawetawaraks and Wang (2011) addressed, consumers will prefer to shop from websites that offer luxury brand items as they can get the best deals with prices lower than the in-store prices.

2.3.3.4. The Effect of Offering Luxury Brand Products on M-Trust

There are two main reasons why consumers are purchasing luxury products from the webstores or apps: (1) luxury brand products express a level of trust in the online store; and (2) the webstore offers the ability to compare luxury product prices across different online stores (Liu et al., 2013). Even though luxury products are always more expensive than regular products, and their quality may not be that good, consumers believe that luxury products are credible and reliable (Goyal, 2014). Furthermore, luxury

brands in an online store can add to the authenticity of the products, reduce the risk of purchasing, and ultimately, contribute to a feeling of trust in the webstore or app (Chaudhuri and Holbrook, 2001; Dion and Borraz, 2015).

Accordingly, since reputation has been proven to be positively related to trust between the consumer and vendor in traditional marking literature (Chen, 2012; Stewart and Pavlou, 2002), for online shopping, it is also said there is a significant relation between brand reputation and consumer trust (D. Harrison McKnight et al., 2002). Considering that luxury brand products will only be sold by reputable mobile stores, the following hypothesis is proposed.

- **H5**: Offering luxury brands via M-commerce webstores or apps has a positive influence on M-Trust.

Moreover, as Dion and Borraz (2015) and Chaudhuri and Holbrook (2001) stated, luxury brand products decrease the risk in online shopping, and, in a culture like Qatar, where users are very concerned about their privacy (*Qatar National e-Commerce Roadmap 2015*, 2015), the following can be postulated.

- **H6**: Offering luxury brands via M-commerce webstores or apps has a positive influence on perceived privacy.

2.3.4. Perceived Usability

Usability concept is discussed in the beginning of this subsection. The dimensions of usability are then provided. The related studied of usability in the field of mobile commerce and how it influences consumers trust are presented. The related hypotheses are also illustrated.

2.3.4.1. What is Usability?

Usability as described by (Benyon et al., 2005,p.52) is "quality of the interaction in terms of parameters such as time taken to perform tasks, number of errors made, and the time to become a competent user". From the user's standpoint, usability is considered as a crucial element as it means a task can be completed successfully without any frustration (Issa and Isaias, 2015). However, if usability is not existing in website users will be frustrated performing any takes with it. Nielsen (2012) stated that, there are several reasons that lead user to leave the website: (1) website is difficult to use; (2) individual gets lost on a website; (3) the provided information is not easy to be read; (4) the website's homepage does not describe its purpose properly.

2.3.4.2. The Concept of Usability

The concept behind usability cannot only be recognized through one or two factors yet it is influenced by a number of constituents that are interacting with each other in a complicated manner (Booth, 1989).

Figure 9 illustrates the relations between dependent and independent usability variables based on Eason (1984) proposed models.

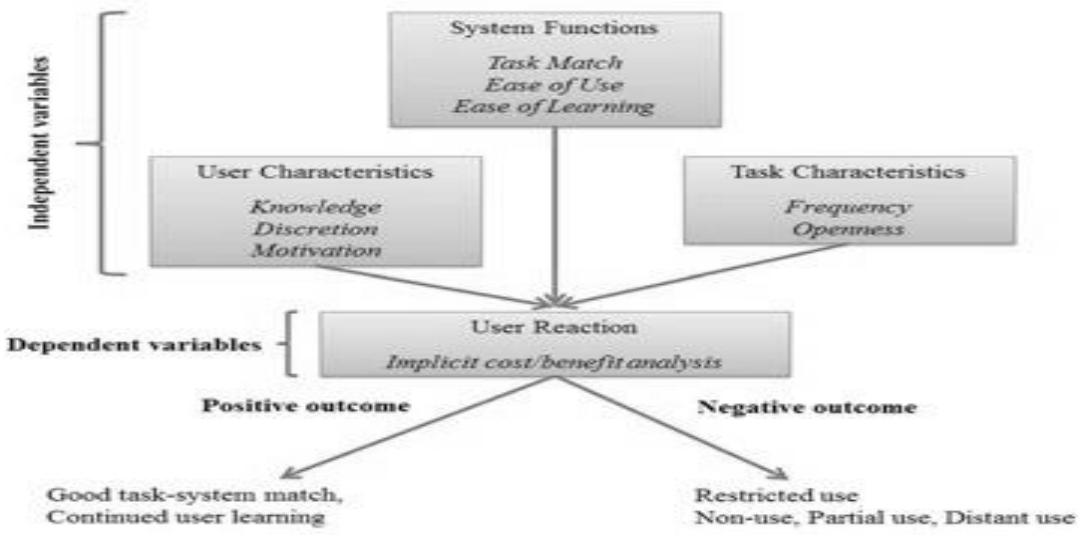

Figure 9. Usability dependent and independent variables (Issa and Isaias, 2015)

As demonstrated in Figure 9 above, the independent variables are consisting of task characteristics, system functions, and user's characteristics. Task characteristics indicates that of a person is not performing the task frequently, the website's interface shall assist the user to move to the next step successfully; besides, the performed task should be modifiable (Issa and Isaias, 2015). The system functions can be achieved by mastering the main three system variables that are ease of learning, ease of use, and task match (Booth, 1989; Issa and Isaias, 2015). The last set of independent variables are focusing on who is performing the tasks based on knowledge, motivation, and discretion. The knowledge factor signifies the level of knowledge the person who is performing the task has; while, motivation and discretion factors are related to person's desire to perform the task (Issa and Isaias, 2015).

The dependent variable, which indicates the reaction of the individual using a system is focusing on the positive outcome that can lead to success of the system and negative feedback that can lead to distrust and discontinuation of adopting a new system (Issa and Isaias, 2015) as presented in Figure 9

2.3.4.3. Usability Dimensions

In order to support usability, as well as making systems easy to learn and use, several dimensions need to be followed. Therefore, Nielsen (1994) in his Usability Engineering book has recommended five usability features that must be in any websites or mobile applications and these are:

- **Learnability:** first time user can easily learn the website in order to complete a task.
- **Efficiency:** how fast the user can attain a task after being familiar with the website.
- **Memorability:** how easy the user can remember the steps after the webpage not being visited for a long period of time.
- **Errors:** how many times the user makes errors when using the website.
- **Satisfaction:** how much the user enjoys spending time using the website.

According to Davis (1989), perceived ease of use as shown in Figure 10 , influences perceived usefulness because having a simple system can have an impact on the user's ability to product positive and satisfactory outcomes. Additionally, as cited by Lund (2001), usability is consisting of two correlated factors that are usefulness and ease of use. Accordingly, in this study the term perceived usability refers to the combination of perceived ease of use and perceived usefulness, which are the main construct of the original TAM.

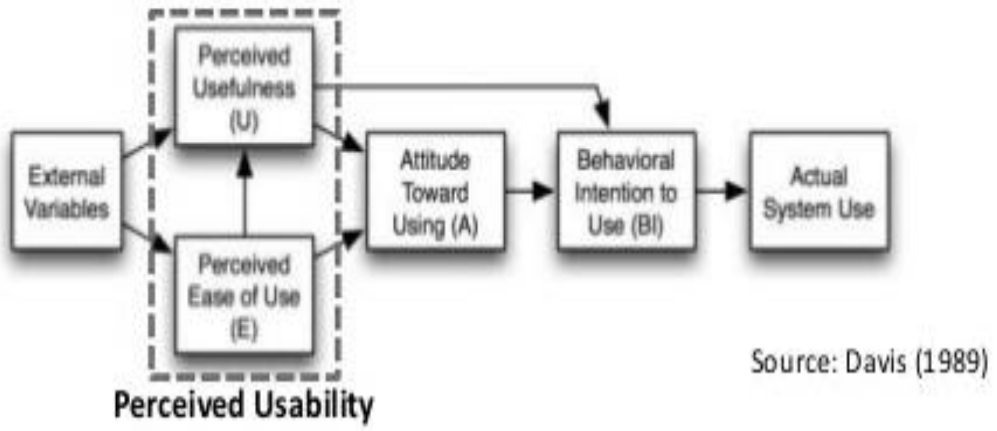

Figure 10. Perceived usability in the technology acceptance model (Davis, 1989)

2.3.4.4. The Effect of Perceived Usability on M-Trust

According to Li & Yeh (2010), achieving trust from mobile customers depends considerably on how well-designed and usable the websites or applications are. Additionally, many researchers have studied diversity of issues that included effect of usability on trust development in M-commerce as well as aspects that can affect acceptance of M-commerce. From the conducted studies , a research has been done in China by Zheng, Li, & Jiang (2012) to investigate the factors that impact the acceptance of M-commerce suggested that, consumer's attitude in using M-commerce is noticeably influenced by perceived usefulness, perceived entertainment , and perceived cost. It has been found from their study that the factor perceived usefulness has the most significant effect in building the trust.

Malik, Kumra, & Srivastava (2013) who conducted a research in India to study the determinants that affect consumer to accept m-commerce showed that perceived ease

of use and perceived usefulness have great impact in adopting M-commerce. Furthermore, perceived ease of use and perceived usefulness were proposed by Zhu et al. (2003) to be predictors of M-trust that eventually can positively impact the intention to used mobile commerce; yet, the study did not validate empirically the intention factor. Lohse and Spiller (1998) confirmed that online consumer's trust has positive significant relationship with perceive ease of use regarding the webstore. Such features that as related to trust as addressed by Lohse and Spiller (1998) are easy search and navigation.

Other studies have claimed that usability of the webstore can enhance both perceived security and perceive privacy For instance, a research by (Nakayama and Taylor, 2016) proved that usability can considerably reduce user's privacy concerns. Another study has revealed that human commuter interface design can affect drastically perceived security of webstores, the study also highlighted that easy website navigation is one of the top factors that affect the security perception (Kamoun et al., 2017).

From the derived findings, it is expected that usability would affect all trust, security, and privacy perceptions positively. Hence, the following hypotheses have been formulated;

- **H7:** Perceived usability has a positive influence on M-Trust.
- **H8:** Perceived usability has a positive influence on perceived security.
- **H9:** Perceived usability has a positive influence on perceived privacy.

2.3.5. Perceived Privacy

This subsection starts by proving the definition of perceived privacy. Next, it discusses the term privacy in online shopping. after that it review the related worked and prosed the associated hypotheses.

2.3.5.1. What is Perceived Privacy?

Researchers studying the context of online commerce often use perceived privacy and perceived security interchangeably; however, these two concepts differ from each other, although they are closely related (Veijalainen, 2007). Privacy relates to consumers' concerns about how their personal information will be used (Nyshadham, 2000). Thus, consumer privacy should be satisfied first to increase trust in mobile shopping as only considering payment protection will not be sufficient to support trust (Karnouskos, 2004; Kim et al., 2010).

Furthermore, privacy as defined by Warren and Brandeis (1890) is the person's right to be left alone and has the freedom to control what he/she wants to disclose from personal information to others. Similarly, Westin (1968) described perceived privacy as the ability of a person to control the situations whereby his/her own details are used.

These two definitions are emphasizing that person should have the right to control how their personal information can be gathered and revealed (Gurung et al., 2008). Though the concept of privacy may appear straightforward, its governing laws differ between cultures (Milberg et al., 1995). According to Palupy (2011), privacy can be classified into four essential facets that are as follow;

- **Information privacy:** establishing procedures that govern the collection and management of the personal information (e.g., credit card data and medical records)
- **Bodily privacy:** protecting the individual's physical identities invasive practices, like drug testing
- **Communications privacy:** securing the privacy of any means of communications, such as emails, and telephones

- **Territorial privacy:** putting limitations on intrusion into the environments (e.g., homes, workplace) of others

2.3.5.2. Privacy and online shopping

Privacy in online shopping is mainly related to information privacy that means the capability of people to maintain considerable level of control over their personal information and the way others are using them (Gurung et al., 2008).

Since the transmission of information and personal data is easy and fast with internet and information technologies, Anne Adams and Sasse (1999) divided up the information privacy into three factors that are:

- **Information sensitivity:** which is the user's perspective regarding the significance and sensitivity of information,
- **Information receivers:** which is the user's perspective on the person or online store that receives the input data,
- **Information usage:** which is the user's perspective regarding how the input data will be presently and in the future.

Kaapu and Tiainen (2009) stated that in mobile commerce context, the perception of privacy among consumers is dissimilar and it depends on the user's knowledge with information technologies and how the user perceives the government polices as well as mobile stores venders roles in safeguarding the customer's privacy. Hence, customers are having different opinions regarding what is fair and what is unfair when it comes to the collection and usage of their personal data (Gurung et al., 2008).

Stewart and Segars (2002) claimed that the main psychological barrier that prevent consumers to purchase thought webstores or apps is the luck trust due to privacy

concerns that are associated with data collection and uses. Such aspects are: (1) unauthorized collection of the data; (2) errors linked to the reliability and integrity of the databases; (3) improper access to personal information. Cassidy and Chae (2006) addressed the other privacy concerns and they are listed below;

1. Financial and credit card details could be stolen
2. Personal details could be sold to third-party without authorization
3. Users may be tracked secretly when they are visiting webstore or app
4. Personal details might be used for marking purposed without taken permission form the user

Moreover, Paine et al. (2007) added other consumers concerns related to online privacy, like hackers, viruses, and spam.

As providing information on how the companies are keeping and using the consumers' personal details can increase trust (Liu et al., 2005), thus, when M-commerce venders present explicitly their privacy policies, the users can perceive their webstore to be protected and safe (Hui et al., 2007; Kaapu and Tiainen, 2009).

2.3.5.3. The Effect of Perceived Privacy on M-Trust

There are several studies have proven that there is a significant relationship between perceived user's privacy and trust in M-commerce. For example, a study conducted by Siau and Shen (2003) has considered privacy od user's information as one of the basis to form trust in M-commerce. Mogenahalli et al. (2008) confirmed that displaying privacy policies in M- commerce websites or applications can have a positive effect in enhancing user's trust. Moreover, an empirical study by Amoroso and Magnier-Watanabe (2012) has found that, in mobile wallet context perceive privacy can

significantly influence consumer's trust, this finding is consistent with the results obtained by (Xin et al., 2013).

Considering the recommendation of Prasad & Aryasri (2009) , which state that it is considerably critical for mobile retailers to confirm in their privacy policy that customers 's information will never be used for other purposes as this will reduce consumer's anxiety on privacy and security and build trust in protecting consumer's personal information. Accordingly, the following hypothesis has been suggested;

– **H10:** Perceived privacy has a positive influence on M-Trust.

In the context of social networking, the findings of Shin (2010) have demonstrated that perceived security mediates the effect of perceived privacy on user's trust and as there are many uses who are using social networking platforms for retailing; hence, this predicts the following hypothesis;

– **H11:** Perceived privacy has a positive influence on perceived security.

2.3.6. Perceived Security

The last trust antecedent, which is considered for current study is discussed in this subsection by providing the meaning of perceived security first. The requirements of security in mobile stores are next presented along with the different online payments options. The effect of perceived security on M-Trust with the related hypotheses are demonstrated as well.

2.3.6.1. What is Perceived Security

Perceived security as said by Lewis and Weigert (1985) and Rempel et al. (1985) is the feeling of being safe, confident, and comfortable without any anxious and fear when depending upon the trustee. Furthermore, it offers all physical, logical, and

practical protections, which are necessary to maintain all kinds of data to be private. Security also describes the degree of assurance at which a specific transaction will be carried out without any security violations (Shuhaiber, 2016).

2.3.6.2. Security in Webstores

According to Turban (2006), webstores or apps do not offer a secure context for mobile shopping as they are the main target for attackers; therefore, in order to protect consumers from any online risks, security is crucial and shall be utilized. Additionally, Kounelis (2015) stated that most of the consumers have the perception that buying through internet or mobile is vulnerable and there could be a high chance that their money will be stolen and lost.

Salo and Karjaluoto (2007) emphasized that when individual feels secure, the trust intentions will increase dramatically since the person will be more confident in disclosing payment information and buying from the mobile store vendor.

In online shopping Kim et al. (2010) addressed that security protections start with safeguarding, the confidentiality, integrity and availability of data. These three principles of information security are represented by the Confidentiality, Integrity and Authentication shown in Figure 11.

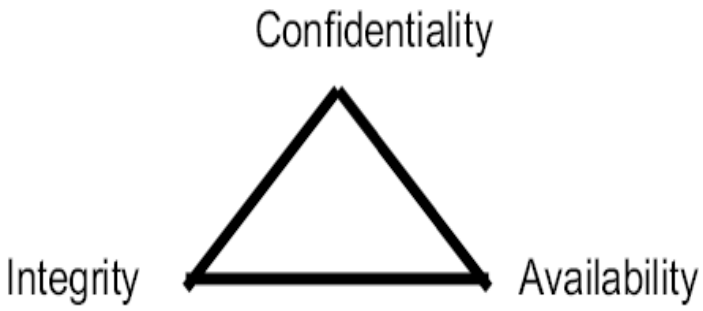

Figure 11. The three principles of information security (Kaur et al., 2015)

2.3.6.3. Security Requirements in Mobile Shopping

As cited by (Joseph, 2008; Kaur et al., 2015; Pittayachawan, 2007) there are security requirements that shall be existing in mobile shopping business and they are as follow;

- **Access control:** to guarantee that only individuals who legally need access to the resources are given the admission.
- **Authentication:** to guarantee mobile store vendors and consumers are those who claim to be
- **Confidentiality:** to guarantee that all transferred data including personal information, financial data, order details are protected and can only be viewed by intended recipients
- **Integrity:** to guarantee that transferred data are neither compromised nor manipulated
- **Availability:** to guarantee that access information required by the appropriate individual are reliable and available in a well-timed manner
- **Non-repudiation:** to guarantee that mobile store vendors and consumers cannot negate their commitment in conducting mobile transactions

From the above-mentioned information security requirements, it can be recognized that mobile consumers need to assure that: (1) they are doing all their commutations with the right server, (2) whatever they sent has delivered without any alterations, (3) they can confirm that they have sent the order, (4) only the right consumer has made the order, and (5) they can acknowledge the receipts of the order.

If mobile store vendors cannot keep the security of the data, which has gathered and collected from their consumers, it is evident then that the vendors are not fulfilling the required level of business responsibility and security requirements (Kaur et al., 2015). Thus, to resolve security issues using of encryption and certificates approaches can assist (Kounelis, 2015).

David Gefen (2002) has explored the significance of four trust's indicators that can influence the mobile consumer to provide personal and financial details and eventually purchase online. Therese indices are: (1) third party privacy seal, (2) privacy statement, (3) third party security seal, and (4) security features. The results of David Gefen (2002) study proved that security features the most significant indicator.

2.3.6.4. Online Payment Methods

Online payment methods by using both internet or mobile deceives indicate the possible ways that online consumers can use to pay the product or services purchased online. There are numerous payments approaches that are available for the consumers ranging from traditional cash-based payment to the latest intermediaries, like PayPal, Apple Pay, Mobile wallets…etc. (Dahlberg et al., 2008).

- **Online banking**

One of the most popular method of online payment is the online banking. When online users intent to shop online, he/she must have an online bank account as this mode of payment should be paid directly by either credit card or debit card (Yang, 2017). Credit card that acts as a server, which confirms with the consumer's bank if sufficient funds are available before purchase, the consumer then is billed for the credit card charges and pays them later to the bank. The online transaction by using debit cards on the other hand will not be performed unless online consumer maintains positive balance in his/her bank account so that money can be deducted (Dahlberg et al., 2008).

- **Third-party online payment**

Nowadays, third party payment, which is an independent organization that offers linkage between banks and online payment platform (Yang, 2017) is a very popular method for mobile shopping. An example is PayPal, which is account-based payment system that lets both business and consumers who have email address to send as well as receive securely online payments; in addition, this method does not require the distribution of financial information between buyers and sellers (*Strategic Insights Payments in e-commerce*, 2011). Figure 12 gives a clear illustration of PayPal online payment process.

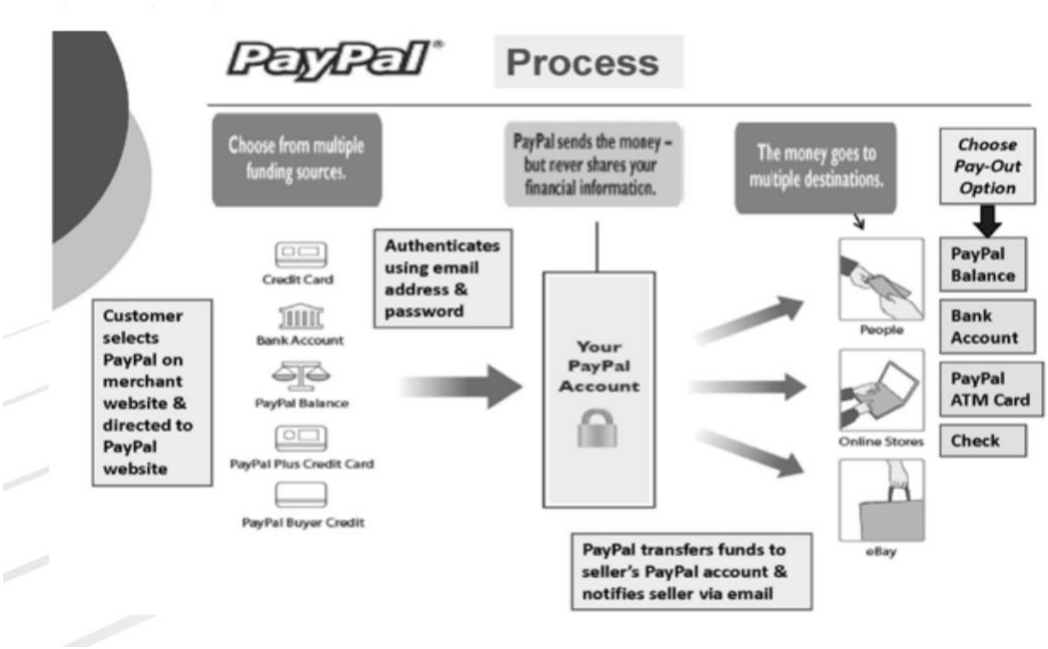

Figure 12. PayPal online payment process (Strategic Insights Payments in e-commerce, 2011)

- **Cash on delivery**

As cited by Franco and Bulomine (2016), Middle East consumers are considering online payments that have been addressed above as new concepts that are unsecured as many users might be unfamiliar with credit cards or don't have sufficient trust to use them for online shopping. Therefore, to overcome the payment security risks that some consumers may face when doing online shopping, the cash on delivery payment method has been introduced. In this method, the online consumer orders products online and once the goods deliver to the destination, he/she pays the money (Franco and Bulomine, 2016).

2.3.6.5. The Effect of Perceived Security on M-Trust

Eid (2011) stated that when webstores or apps offer high level of security and reliable security features, mobile consumer's trust can be achieved. Numerous studies in the literature have examined empirically how security and payment transactions can affect trust of webstores.

A study on consumer's value, trust, and loyalty on the context of online shopping conducted by (Y. Kiang, 2016) has confirmed that improving transaction of webstore or app can significantly increase the level of consumer's trust. Pi et al. (2012) research has also proved that transaction security has direct positive influence on both cognitive and affective trust of the consumer. A study on consumers attitudes towards mobile shopping has been carried out by (Safa and Solms, 2016) demonstrated that perceived security and reliable payment system can favorably affect trust on M-commerce.

Providing that the perception of security and easy payment process can improve customer's trust (Safa et al., 2015). In addition, since the use of credit card for payment in Arab region is low when compared with developed countries because of the lack of trust as well as some customers are culturally reluctant to conduct mobile transactions that are associated with conventional interest Rayed AlGhamdi, Drew, & Alhussain (2012), the succeeding hypothesis has been developed;

– **H12:** Perceived security has a positive influence on M-Trust

2.4. Research Conceptual Framework

Based on the discussed reasons that prevent consumers to trust M-commerce websites and applications in Qatar as well as the review of the related studies and the suggested twelve hypotheses, the conceptual framework of this research has been developed. Hence, this section offers an overview of the developed M-Trust conceptual model. It also provides the operational for the proposed factors as well as summarizes the postulated hypotheses. Finally, it illustrates the model of this study.

2.4.1. M-Trust Conceptual Model Development

The model for M-Trust is based on the original TAM (Davis, 1989) in which external variables that are designated as motivation factors are introduced. The model's aim is to capture the effects of the motivation factors on user cognitive response and eventually attitude or affective response to the technology. The behavioral intention and actual use of technology are not considered in the current study.

The motivation factors are comprised of three independent elements: localization, social media, and luxury brands. User cognitive response consists of three factors: (1) perceived usability that combines both perceived ease of use and usefulness; (2) perceived privacy; and (3) perceived security. The affective response is M-commerce trust, which is the primary target of this exploratory study. Figure 13 illustrates the relationships of the trust factors that are examined in this study.

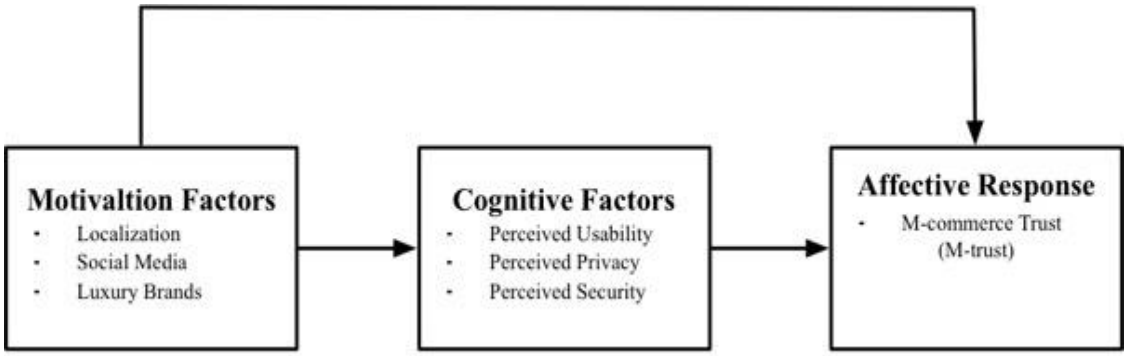

Figure 13. Relationships of the examined trust factors

The associated definition for each of the studied trust factors are presented in the following Table 4.

Table 4. Definitions of the proposed trust factors

Motivational Factors		
The motivational set consists of independent factors that can inspire users to develop trust in M-commerce. Moreover, these factors will be explored in this study and they include		
Factors	Definition	Author(s)
Localization	M-commerce webstores or apps appear local to users who belong to a particular cultural group by incorporating local languages and currencies	Singh et al., 2012
Social Media	M-commerce webstores or apps are endorsed by influencers who can affect large number of audience thorough the use of social media channels	Freberg et al., 2011
Luxury Brands	M-commerce webstores or apps are offering luxury brand products that users perceived as having uniqueness, authenticity, and quality	Bauer et al., 2011
Cognitive Factors		
The data set involves dependent variables that have already been validated in prior studies as trust predictors and are used here to measure the cognitive response. This includes three factors		
Factors	Definition	Author(s)
Perceived Usability	The degree to which users believe M-commerce webstores or apps are being free of effort and improving their performance	Chiu et al., 2017
Perceived Privacy	The degree to which users believe M-commerce webstores or apps are protecting their personal information and providing them confidence to control their privacy details	Giovannini et al., 2015
Perceived Security	The degree to which users believe M-commerce webstores or apps are providing secure and reliable measures as well as offering different payment methods	Gustavsson and Johansson, 2006
Affective Response		
The feelings during the interaction with the mobile commerce apps or webstores		
Factors	Definition	Author(s)
M-commerce Trust (M-trust)	The degree to which users believe M-commerce webstores or apps are reliable and trustworthy	Xin et al., 2013

2.4.2. Summary of the Developed Research Hypotheses

As a summary, the hypotheses developed for this study with their supporting references are tabulated in Table 5.

Table 5. Summary of research hypotheses

Factor	Hypothesis		Supporting References
Localization	*H1	Localization → M-Trust	Al-Sedrani and Al-Khalifa, 2012; Chao and Chen, 2012; Lynch et al., 2001; Singh et al., 2006a; Singh and Boughton, 2005
	*H2	Localization → Perceived Usability	Baack and Singh, 2007; Luna et al., 2002; Nasrul et al., 2012; Singh et al., 2006b; Singh and Pereira, 2005
Social Media	*H3	Social Media → M-Trust	Cheong and Morrison, 2008; S. Chu et al., 2013; Everard and Galletta, 2005; Parikka, 2015; Pornpitakpan, 2004; Reza et al., 2014; Silvera and Austad, 2004; Smith, 2010
	*H4	Social Media → Perceived Usability	Lu et al., 2005; Moorty et al., 2014
Luxury Brands	*H5	Luxury Brands → M-Trust	Chaudhuri and Holbrook, 2001; Dion and Borraz, 2015; Goyal, 2014; Liu et al., 2013; McKnight et al., 2002
	*H6	Luxury Brands → Perceived Privacy	Chaudhuri and Holbrook, 2001; Dion and Borraz, 2015
Perceived Usability	H7	Perceived Usability → M-Trust	Li and Yeh, 2010; Lohse

			and Spiller, 1998; Siau et al., 2003b; Zheng et al., 2012
	H8	Perceived Usability → Perceived Security	Kamoun et al., 2017
	H9	Perceived Usability → Perceived Privacy	Nakayama et al., 2017
Perceived Privacy	H10	Perceived Privacy → M-Trust	Amoroso and Magnier-Watanabe, 2012; Mogenahalli et al., 2008; Prasad and Aryasri, 2009; Xin et al., 2013
	H11	Perceived Privacy → Perceived Security	Shin, 2010
Perceived Security	H12	Perceived Security → M-Trust	AlGhamdi et al., 2012; Eid, 2011; Kiang, 2016; Pi et al., 2012; Safa et al., 2015; Safa and Solms, 2016

*Predicted hypothesis

A → B: A has positive influence on B

- Localization: Language and local currencies
- Social Media: Influencer endorsement
- Luxury Brands: Offering luxury brand products
- Perceived Usability: Ease of use and usefulness
- Perceived Privacy: Protecting user details
- Perceived Security: Secured systems and alternative payment options

2.4.3. M-Trust Conceptual Framework

The conceptual framework for M-Trust that has been developed for this study along with the proposed hypotheses are depicted in the next Figure 14.

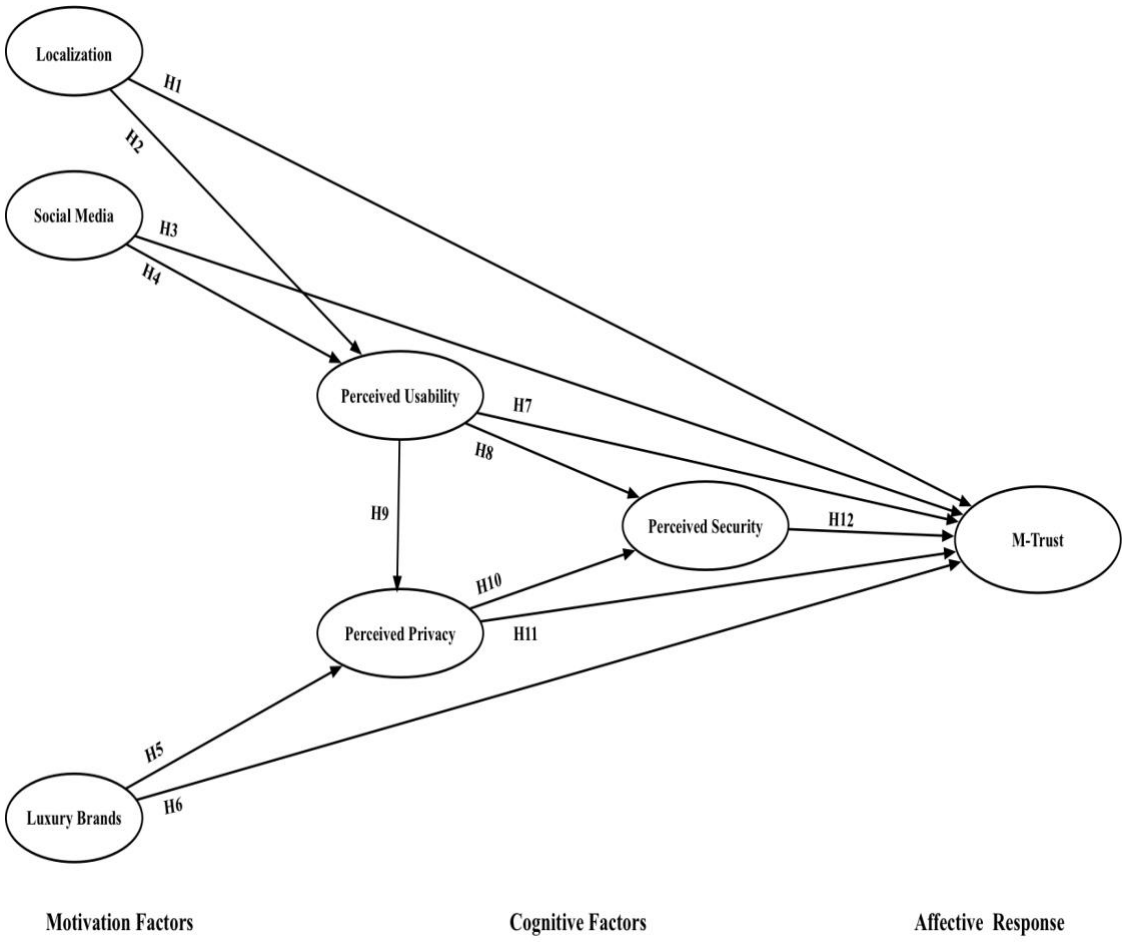

Figure 14. Conceptual framework for M-Trust

Chapter 3: Research Methodology

This chapter offers in detail the applied methodology for the current study along with the justifications. In particular, the design of the survey instrument, the implemented procedures for the data collection, and the data analysis technique are discussed.

3.1. Research Instrument – A Questionnaire

In order to test and validate the proposed conceptual framework of this study, an online survey questionnaire was conducted from the mid of June 2017 till the end of August 2017 among online users residing in Qatar. Since one of the requirements for mobile shoppers is to have access to the internet or cellular data, online questionnaire that is well-optimized to be answered by using all computers, laptops as well as smartphones was considered to be the most suitable approach in this research (Corbitt et al., 2003; Pittayachawan, 2007). Additionally, the online survey was a structured self-administered questionnaire for data collection.

3.1.3. Arabic Translation

The questionnaire was initially designed in English and then translated by the researcher into Arabic. To ensure questions comprehensibility, the back-translation approach was applied, in which, the Arabic survey was translated back into English by a bilingual person. Hence, the online questionnaire that has been developed by using a survey creator tool (i.e., www.surveymonkey.com) was eventually available in both Arabic and English languages in order to satisfy all respondents.

3.1.4. Structure of the Questionnaire

The questionnaire consists of three sections. Section A captures demographic characteristics; section B relates to the respondent's experience with mobile shopping; and section C seeks the opinions and perceptions of the respondents who have experience in mobile shopping, as well as those who are interested in mobile shopping in the future, to measure the proposed factors of the conceptual model.

Furthermore, since both online users who have experience in mobile shopping and those who are non-experienced have been invited to participate in the survey, the non-experienced online buyers who are not interested to shop online in the future were directed to a separate questionnaire in order to capture the reasons that stop them from doing online shopping. Appendix A presents the online survey that has been developed and examined in this study.

3.1.5. Mode of Measurement Model

The development of the measurement model (survey's indicators) relies mainly on the direction between the construct and the indicators (Fornell and Bookstein, 1982) and as cited by Fornell and Bookstein (1982) and Shuhaiber (2016), two modes of measurement model are existing that are reflective and formative models.

Reflective measures are normally representing the effects of a particular latent variable and the causality is always coming from the construct to the observed variables (indicators), which means that if the construct changes, then all of the corresponding indicators will be changed simultaneously. Therefore, indicators linked to a specific construct should have the following characteristics (Hair et al., 2014);

1. Indicators should be greatly correlated with each other

2. Each indicator should be interchangeable
3. Elimination of a single indicator should not change the meaning of its associated construct

Contrary to reflective model, in formative measurement model, the indicators are causing a particular construct to be formed (Hair et al., 2014). Hence, the most important feature of this kind of measures is that, they are not interchangeable, which signifies that deleting a single indicator can possibly change the meaning of its associated construct (Diamantopoulos and Winklhofer, 2001; Freeze and Raschke, 2007).

According to Fornell and Bookstein (1982), reflective and formative measures can be both used in a one conceptual model; at which, independent construct are characterized as reflective; while, dependent latent variables are represented as formative. In addition, it is vital to distinct between both kinds of measures in order to avoid drawing wrong conclusion from the model (Freeze and Raschke, 2007). Moreover, the selection of the mode of measurement models depends upon three conditions as highlighted by (Chin, 1998; Fornell and Bookstein, 1982) and these are the objective of the research, the theory behind the latent variables and the empirical situations.

Accordingly, in the current research study, the latent variables were modeled as reflective since they were measured by using a set of interchangeable indicators that are caused by their associated construct. For example, some latent variable like, M-Trust was considered as reflective since its measures were adopted from existing studies related to consumer trust in online shopping; while other constructs were assumed to be more suitable as reflective because their associated indicators were sharing a theme that mainly reflect their construct (Shuhaiber, 2016).

3.1.5.1. Reflective Indictors per Construct

An important criterion to have accurate research findings is the ratio of the indicators per a construct (Pittayachawan, 2007), and this is because as highlighted by Gerbing and Anderson (1985) it can cause significant bias in the structural model and reduce the quality of the measurement if the number of items per a latent variable is two or one. Gerbing and Anderson (1985) continued, this bias can disappear when three or more indicators are specified per a construct.

As a result, when measurement model was constructed in this study, this criterion was taken into consideration. Table 6 provides the number of indicators per construct recommended by several authors.

Table 6. Recommended number of indicators per construct

Indicators per Construct	Author(s)
Three to five	Fabrigar et al. (1999)
Three or more	Cook (1981)
Three or more	Gorsuch (1983)
Three to five	Tabachnick and Fidell (2001)

In addition, Schmitt and Stuits (1985) and Schriesheim and Eisenbach (1995) emphasized to keep as few measures as possible because less indicators can reduce the biases of the repose that may come from tiredness and boredom when completing the

survey. Cook (1981) and Carmines and Zeller (1979) also addressed that acceptable internal reliabilities can be obtained even with three indicators and adding more and more constructs will bring insignificant impact on the reliability of the measurement (Carmines and Zeller, 1979).

Correspondingly, in this research three to four indicators were developed. As cited by Bearden and Netemeyer (1999) in social science studies normally researchers are using indicators that are already published with some modifications. However, in some situations especially when the research is exploratory, a shortage of established measurement approaches can be faced and new set of indicators to measure constructs should be developed (Hair et al., 2014). Therefore, indicators related to perceived usability, and M-Trust were adopted from Pittayachawan (2007) , perceived privacy from (Belanger et al., 2002), and perceived security from (Gustavsson and Johansson, 2006). These indicators have been modified to fit the context of this study. On the other hand, indicators associated with motivation factors were newly developed by following the inductive approach, which is based upon asking a sample of participants to describe their perceptions regarding specific issue (Hinkin, 1998). A summary of all indicators adopted and self-developed for this study is demonstrated in Table 7 below.

Table 7. Summary of adopted and self-developed indicators for the survey

Construct (s)	Indicator ID	Indicator wording	Status	Source
Motivation Factors		I prefer to shop online through M-commerce apps/websites that		
Localization	LOC-1	Offer more than one language including mine	New	-
	LOC-2	Are written in my own language as I feel they are easy to use	New	-
	LOC-3	Display product description in my own language	New	-
	LOC-4	Display prices of the products in my local currency	New	-
Social Media	SM-1	Have been promoted by social media influencers (e.g. bloggers, fashionistas, You-tubers...etc.)	New	-
	SM-2	Are suggested by social media influencers (e.g. bloggers, fashionistas, You-tubers...etc.) as they are making the online shopping experience easier	New	-
	SM-3	Display products reviewed by social media influencers (e.g. bloggers, fashionistas, You-tubers...etc.) as their opinions are honest	New	-
Luxury Brands	LUX-1	Offer authentic luxury brands (e.g. Fendi, Gucci...etc.) products	New	-
	LUX-2	Sell authentic luxury brands products (e.g. Fendi, Gucci...etc.) as I believe they are secured in terms of payment	New	-
	LUX-3	Sell luxury brands products (e.g. Fendi, Gucci...etc.) as they are trustworthy in terms of the products	New	-
Cognitive Factors		I prefer to shop online through M-commerce apps/websites that		

Perceived Usability	PU-1	Are organized in such a way that minimizes my shopping time	Adopted	Pittayachawan, 2007
	PU-2	Support instant messaging for enquiries	Adopted	Pittayachawan, 2007
	PU-3	Provide order tracking from invoicing to delivery	Adopted	Pittayachawan, 2007
Perceived Privacy	PP-1	Protect personal information (user's data, and credit card details)	Adopted	Belanger et al., 2002
	PP-2	Present user's security and privacy statements	Adopted	Belanger et al., 2002
	PP-3	Display government policies	Adopted	Belanger et al., 2002
Perceived Security	PS-1	Offer alternative payment options (e.g. cash on delivery, PayPal, ...etc.)	Adopted	Gustavsson and Johansson (2006)
	PS-2	Present money back guarantee policy	Adopted	Gustavsson and Johansson (2006)
	PS-3	Have secured transactions	Adopted	Gustavsson and Johansson (2006)
	PS-4	Are using security system	Adopted	Gustavsson and Johansson (2006)
Affective Response		I prefer to shop online through M-commerce apps/websites that		
M-Trust	MT-1	Are trustworthy	Adopted	Pittayachawan, 2007
	MT-2	Are owned by existing trustworthy companies (e.g. Amazon, eBay)	Adopted	Pittayachawan, 2007
	MT-3	Their transactions are trustworthy	Adopted	Pittayachawan, 2007

3.1.6. Scale of the Questionnaire

In order to obtained responses to the developed indicators, a pre-determined number of closed-ended answers is used as measurement scale instrument. In general, there are four kinds of measurement scales, which are nominal, ordinal, interval, and ratio. Each of these measurement scales is demonstrating a different level of measurement. The most common measurement scale in social science studies is the ordinal like, Likert scales that give meaningful information if the value of the indicator increases or decreases. Yet, this measurement scale cannot consider distance in the order as equally spaced even when the difference between these values are identical and this means that for ordinal data it is not proper to calculate the means and variances (Hair et al., 2014).

In this research, it is essential to have equidistance scales such as, interval measurement scale; therefore, to satisfy this requirement and approximate an interval level measurement, Likert scale has been coded in such a way that is seen as symmetric and equidistance (e.g. the categories should be uniformly balanced with neutral point) so that the developed indicators can be used for the data analysis (Neuman, 2005). Moreover, since several studies related to trust in mobile commerce as well as electronic commerce are measuring the construct trust using a five-point Liker scale (Piao et al., 2012; Yeh and Li, 2009); thus, all of the questionnaire indicators were measured using a Five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree, with 3 = Neither Agree nor Disagree as the neutral point.

3.1.7. Pilot Test

Before distributing the online questionnaire and carrying out the main data collection, Malhotra (2012) claimed that it is important to identify whether the survey questions are clearly worded and understood; as well as, to detect whether particular questions are really required or should be excluded. Consequently, a pilot test with a sample of 30 potential respondents was conducted over the first two weeks of the month of June 2017. The participants were given a short overview about the research study, asked to complete the survey, and provide feedback on (1) the design and structure of the survey; (2) wording and phasing; or (3) any other associated remarks.

The implications from the pilot test were that three questions, one related to the "M-Trust" construct, and two related to the "Perceived Security" construct, had to be modified and re-worded both in Arabic and English. Finally, the average time to complete the questionnaire was confirmed around five minutes, which is considered to be acceptable since as claimed by Pittayachawan (2007), a completion time more than ten minutes could lower the number of responses.

3.2. Data Collection and Sampling

In this research, sampling method was based on self-selection, which means only people who voluntarily supported the study responded to the survey (Saunders et al., 2003). To offer diversity with respect to online uses' perceptions as well as enable the sample to be more generalized, the invitation of the online survey was conveyed via different platforms, such as private company's communication centers, and through social media channels like WhatsApp. The nature of the study was briefly described along with the invitation and invitees were given the freedom to choose whether to participate in the

study or not.

Furthermore, as respondents over internet could not be identified, one issue was encountered before distributing the online survey and it was that, multiple submissions might be received from the same respondent. Therefore, the following two assumptions have been made in order to claim that the online survey is reliable while highlighting the above-mentioned issue (Pittayachawan, 2007);

1. All respondents would submit the survey only one time
2. All respondents would give honest answers regarding their perceptions on trust in M-commerce

3.3. Analysis Technique

Structural equation modeling (SEM) was used in order to analyze the survey data and the following section provides brief introduction on SEM and why this particular approach has applied used in this study.

3.3.1. Structural Equation Modeling

For more than a century, social science researchers have been utilizing statistical tools for their analysis and they were depending mainly upon either univariate or bivariate evaluations in order to examine their data and relationships. However, presently most of the social science studies are directed towards understanding more complex relationships; hence, it was crucial to employ more high-level multivariate methods that comprises first-generation and second-generation techniques (Hair et al., 2014).

First-generation methods involve regression-based techniques (e.g. multiple regression) as well as approaches like, exploratory factor analysis and multidimensional scaling. These methods are either confirmatory; when confirming already established

and existing theories or exploratory; when developing new theory by exploring the hidden data when only little or even no established knowledge and theories on how dependent and independent variables are related to each other (Hair et al., 2014). Since the aforesaid methods can measure merely individual relationships, the second-generation techniques, which are so-called Structural Equation Modeling (SEM) have recently attracted many social science researchers in order to overcome the weaknesses encountered in the first-generation approaches and assist the researchers to consider the undetected variables that can indirectly influence the dependent variables (Chin, 1998).

Furthermore Gefen and Straub (2000) stated that, SEM can express complex relationships between variables as well as provide a comprehensive image of the whole model; accordingly, this research study will be analyzed by using the structural equation modeling techniques.

3.3.1.1. Types of Structural Equation Modeling (CB-SEM and PLS-SEM)

According to Gefen and Straub (2000) and Hair et al. (2014), there are two types of structural equation modeling that are covariance-based (CB-SEM) and variance-based, which is known as Partial Least Squares (PLS-SEM). The first approach is mainly used to either confirm or reject existing theories and it does this by defining how well the recommended theoretical model can approximate the covariance matrix for the collected set of data. On the other hand, the latter type is mostly used in exploratory research in order to develop new theories and it performs this by explaining the variance in the independent variables when testing the proposed conceptual model.

The selection of which method is more appropriate to be applied in this study is based upon the features and objectives that differentiate between the two techniques.

When there is less theories and the objective is to predict the path model relationships that maximize the coefficient of determination (R^2) values of the endogenous (target) construct as in the case of the current research study, then the application of PLS-SEM is more favorable over the CB-SEM (Hair et al., 2014).

3.3.1.2. Advantages of PLS-SEM

PLS-SEM used ordinary least squares (OLS) regression-based process for the estimation unlike CB-SEM that uses the maximum likelihood (ML) process. In addition, it utilizes the data available for the aim to minimize the error of the residual variance of the endogenous variables (Hair et al., 2014).

There are several advantages of PLS-SEM that have been taken into consideration for the current study and these are as follow (Hair et al., 2014);

1. PLS-SEM is the most suitable technique for theory development and prediction (exploratory researches)
2. PLS-SEM works efficiently for a small sample size
3. PLS-SEM requires no assumptions regarding the distribution of the primary data (e.g. normal distribution)
4. PLS-SEM can work with both reflective (causality from the construct to its indicators) and formative measurement models (causality form indicators to the construct)
5. PLS-SEM can handle single-item construct without causing any identification issues
6. PLS-SEM can be used for complex structural models with many construct sizes as in the case of the current study; the proposed conceptual model

consists of seven constructs and 23 indicators

Although Goodhue et al. (2012) claimed that, the PLS-SEM is less accurate than CB-SEM as PLS is a regression-based method and hence not compensating for error measurement, given the aforementioned six advantages, the application of the PLS-SEM techniques has been considered to be the most suitable for the current research study.

3.3.2. Procedures for Applying PLS-SEM

Following the systematic procedures recommended by (Hair et al., 2014) and shown in Figure 15, the research study analysis has started first, by examining the collected survey data by using a powerful software such as, IBM SPSS Statistics 24.

Second, assessing the reflective measurement model by using SmartPLS 3, a sophisticated software for partial least squares structural equation modeling.

After that, the structural model has tested using bootstrapping procedures available in SmartPLS 3.

Finally, advanced multi-group analysis has been conducted by applying permutation and multi-group algorithms.

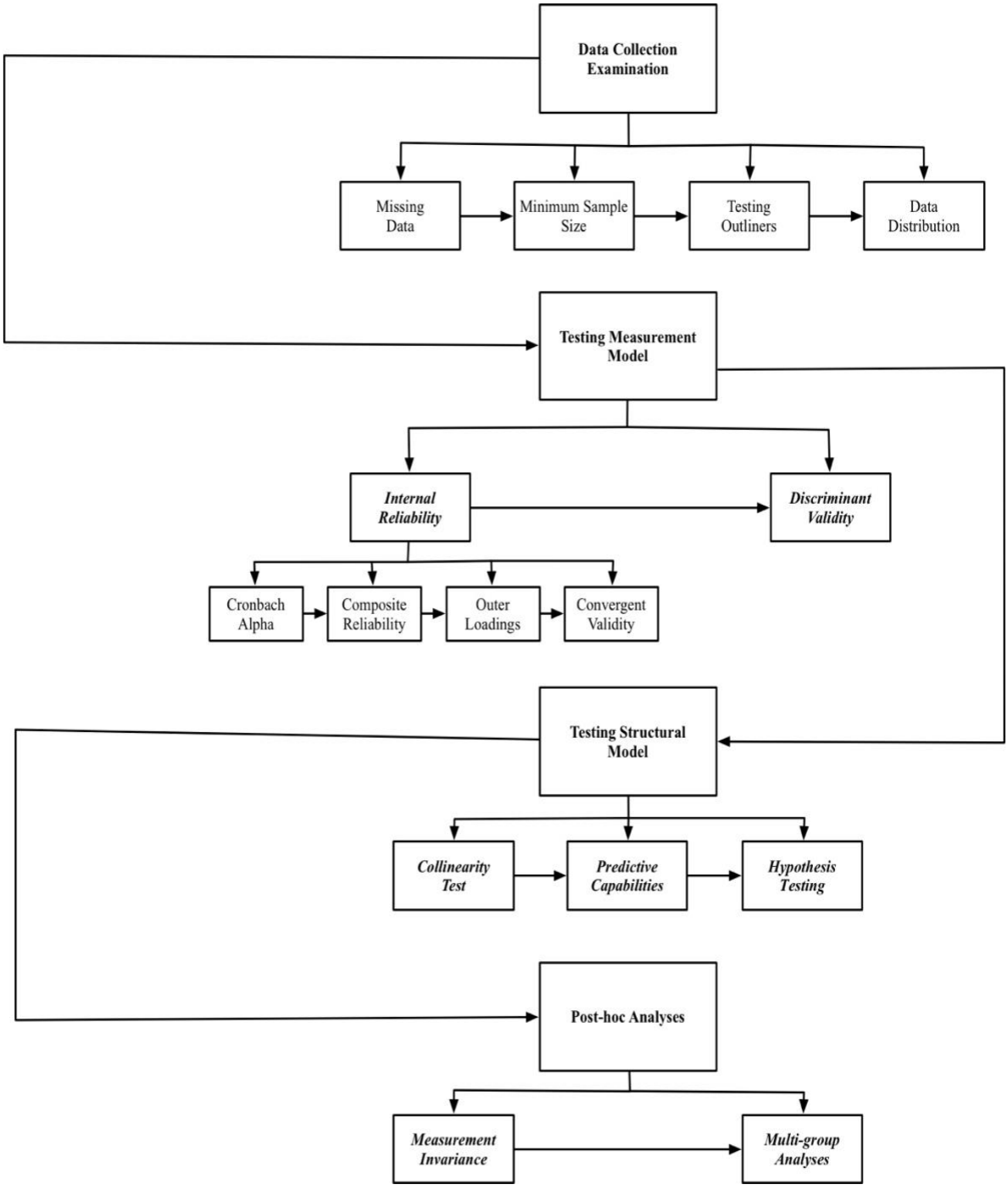

Figure 15. Research methodology followed to execute PLS-SEM analysis

Chapter 4: Results and Findings

This chapter outlines the survey data analyses. It begins by discussing how the collected data are examined (e.g., missing data, minimum sample size requirements, outliers, data distribution) before proceeding to apply PLS-SEM procedures. It also demonstrates the demographics of the valid survey observations and shows the statistics of the reasons of why some respondents are not interested in the future to do online shopping. After data collection analysis, the chapter presents the results obtained from the assessment of the measurement model (e.g., reliability and validity of the survey questions). Next, the findings from the assessment of the structural model (e.g., testing the significance of the developed hypotheses) are presented. in the end of this chapter the results of the multi-group analyses are shown.

4.1. Data Collection Examination

The most important stage when analyzing the online survey and applying SEM is the data collection and examination as empirical data that are collected from questionnaire might have some issues such as (Hair et al., 2014),

1. Missing data
2. Minimum sample size
3. Outliers
4. Data distribution

Thus, data were downloaded from the database of (www.surveymonkey.com) website and coded in order to be ready for the subsequent steps. The collected data then have been combined into one IBM SPSS file, and examined for consistency and completeness. The following subsections discuss the data collection issues that have been

faced in this research study.

4.1.1. Missing Data and Demographic Profile

Two hundred and fifty surveys were completed by participants from people with different stratums in which 232 of them are online shoppers (computers/laptops/mobile devices) or planning to shop online while 15 participants were not interested in the online shopping. Out of the 232 respondents that are interested in online shopping, only 228 have provided valid answers to all questions. Tabachnick and Fidell (2001) and Pittayachawan, (2007) stated that if the missing cases represent less than 5% of the total sample size (N=250), then these invalid cases can be safely deleted from the study. In this study, missing cases represents 2.8% of the entire sample, therefore, it was ruled out. Figure 16 illustrates the demographic statistics of this study and Appendix B demonstrates their profile.

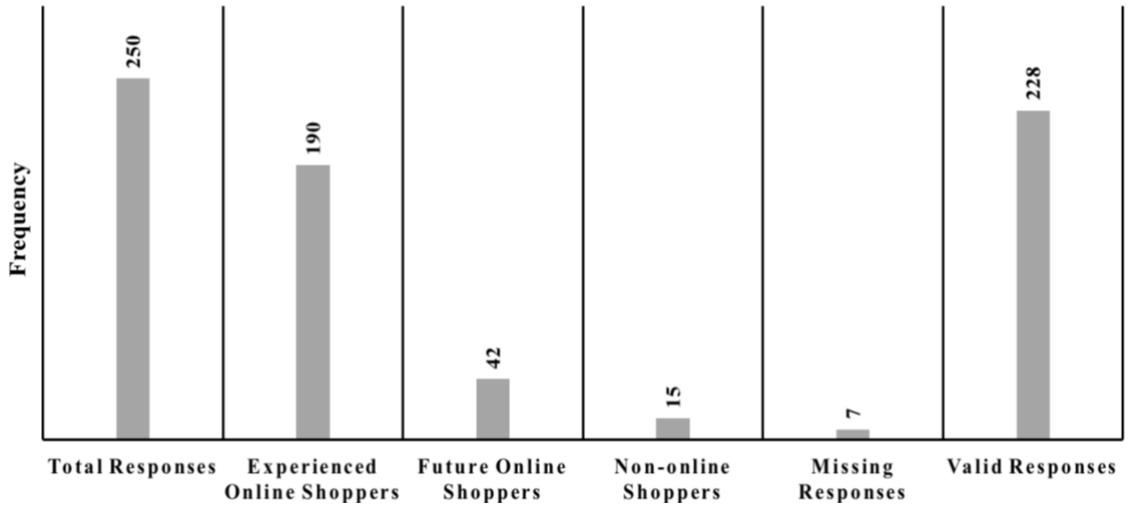

Figure 16. Research demographic statistics

4.1.1.1. Online Shoppers

Table 8 summarizes the online shopping experience for the valid survey's respondents. As shown in the table, 18 % of the participants were having no experience in shopping online but they were interested in doing online shopping via using smartphones devices as well in the future. The table also displays that 82 % of survey percipients had already gone thought the online shopping experience.

Table 8. Online shopping experience for the valid survey's respondents

Level of Experience	Frequency (N=228)	Percentage (%)
No Experience	42	18
Less than a year	23	10
1-2 years	54	24
More than 2 years	109	48

Furthermore, the sample has an equal split between male and female respondents. The age ranges in the sample are less than 25 years (27%), between 25 and 34 years (38%) and older than 35 years (35%). Among the participants, 53% of them are Qataris and 47% are from other countries. Additionally, 76% of the participants are Arabic speakers. Finally, most of the participants are employees (70%), students represent 18%, unemployed and self-employed respondents are representing 9% and 3%, respectively. The demographic profile of the survey respondents is shown in Table 9 below.

Table 9. Demographic profile of the survey respondents

Demographics	Items	Frequency (N=228)	Percentage (%)
Gender	Male	114	50
	Female	114	50
Age Range	< 25	62	27
	25-34	87	38
	≥ 35	79	35
Nationality	Qatari	121	53
	Non-Qatari	107	47
Primary Language	Arabic	173	76
	Non-Arabic	55	24
Occupational Status	Employed	160	70
	Self-employed	7	3
	Unemployed	20	9
	Student	41	18

4.1.1.2. Non-online Shoppers

The demographic profile of the of the survey percipients who were reluctant to shop online (N=15) is illustrated in Appendix B and the reasons are listed in Table 10. It can be noticed that the top reason of not shopping online is related to the payment methods the online stores are offering, which is related to perceived security, followed by the complexity of registration and payment processes that is related to the perceived usability and ease of use. Then, the online store's security and the disability of feeling the intended to purchase products. Last, privacy, languages, and currencies are also some of the reasons that prevent individuals not to do online shopping as the table illustrates.

Table 10. Frequency of reasons prevent percipients to shop online

Reasons prevent survey participants to do online shopping in the future	Frequency
Online shopping websites/apps don't support my own language and local currency	2
I don't believe security is good enough in online shopping websites/apps	5
Registration and payment processes of online shopping are too complex	5
I have no credit card or other payment methods to shop online	8
I can't touch and feel real products	4
I'm concerned about my privacy	3
I heard bad things about online shopping	0
I believe it's too risky to shop online	3
Others	1

4.1.2. Minimum Sample Size Requirement

Although PLS-SEM approach does not require minimum sample size, it is suggested by Hinkin (1998) that sample size should be 4 to 10 times the total number of the indicators that are used in the survey and for the estimation of PLS path model the 10 times rule recommended by rule (Barclay et al., 1995) should be met as rule thumb. The rule stated that the minimum sample size should be at least 10 times the maximum numbers of arrowheads pointing at a latent variable (construct) anywhere in the PLS path model (Hair et al., 2014).

In this research study, the maximum numbers of arrowheads are pointing at M-Trust construct and they are six; hence, the minimum cases or sample size requires for this study per group is 6 x 10 = 60 cases/group. However Hoyle (1995) stated that, researchers should not only meet the minimum sample size requirement as previous studies have found that in order to carry out path modeling sample sizes of 100 to 200 are desirable to start with. Correspondingly, with a valid sample size of 228 respondents, it can be assured that prerequisite of the analysis technique applied for this study as well as the suggestion of (Hoyle, 1995) are satisfied.

4.1.3. Outliers Test

Any case that has a pattern different from the majority of the collected data can be considered as an outlier, this case as addressed by Tabachnick and Fidell (2001) is extreme and hardly to occur and if so it could be either by chance or the data entered wrongly. This means that, these cases are having odd combination of responses, which can produce data that are not normally distributed. Nevertheless, the elimination of outliers cannot be done carelessly as this act can cause the finding to be different and the conclusion to be drawn incorrectly especially if the outliers are true cases. Therefore, according to Hair et al. (2014), case by case basis shall be considered for outlier omission.

As this study is focusing on establishing consumer's perceptions towards trust in M-commerce, outliers were anticipated, and it would be abnormal not to encounter outliers (Durkheim, 1983). Therefore, assuming in section 3.2 that all survey's participants of this study have given true opinion about their trust and intention to shop

online and keeping this assumption valid for the whole research, all cases in the study are considered true even though some of them are containing rare data pattern, that means all detected outliers could not be deleted (Pittayachawan, 2007).

Moreover, in case the pervious assumption was not taken into account, the outliers must be removed by calculating Mahalanobis Distance, which is a method that identifies multivariate outlier (Hair et al., 2014; Pittayachawan, 2007). As recommend by Tabachnick and Fidell (2001), cases with $p<0.001$ are considered outliers; hence, IBM SPSS has been used to estimate Mahalanobis Distance and every time an outlier case was omitted, the distance was re-estimated and that was because single case can change the results and findings. The results showed that out of the 228 cases, 16 cases were detected as outliers and supposed to be omitted (Appendix C). However, removing more than five per cent of the data can seriously put the research findings at risk as invaluable data might be lost, as a result, the deletion of the outliers has not taken place in this study and all valid observations have been utilized for the estimation of PLS-SEM path model (Pittayachawan, 2007).

4.1.4. Data Distribution

Even though PLS-SEM is a nonparametric statistical technique and it does not require the collected data to be distributed normally, it was still vital to prove that data were not extremely non-normal as this could cause issues when assessing the significance of the path coefficients (Hair et al., 2011).

The Kolmogorov-Smirnov test and Shapiro-Wilks are two methods that are intended to test the normality (Hair et al., 2014); hence, these tests have been conducted by using IBM SPSS and the generated results tabulated in Appendix D. As Kolmogorov

test states, a value closer to 0 indicates that data almost normality distributed and Shapiro-Wilk test, claims that a value closer to 1 signifies that the collected data are approaching normality. In addition, a significant level of less than 0.05 means that data are normally distributed, this means that all the indicators shown in Appendix D of this study are not distributed normally (Pittayachawan, 2007). Nevertheless Hair et al. (2014) argued that, the aforesaid tests only specify if the null hypothesis of the data distributed normally should be rejected or not, which means that the tests can only offer narrow direction to decide if the data are extremely away from normality or not. Also, since the bootstrapping procedures of PLS-SEM method can work very well with non-normal data; thus, two measures of distributions namely skewness and kurtosis were examined instead (Hair et al., 2014; Pittayachawan, 2007).

In order to decide if the collected data can be analyzed by PLS-SEM, descriptive statistics have been carried out using IBM SPSS to prove that collected data are not extremely non-normal by assessing the values of the of skewness and kurtosis for the indicators in the questionnaire (Hair et al., 2014). Based on the results obtained in Appendix D, indicator PS-3 had the highest absolute values of skewness and kurtosis that were (1.682) and (2.947), respectively. These results satisfy the cut-off values suggested by (Fabrigar et al., 1999), which are skewness less than 2 and kurtosis less than 7. Hence, further analyses related to data distribution are not required to proceed with PLS-SEM procedures (Hair et al., 2014).

4.2. Overall PLS-SEM Results for the M-Trust Conceptual Model

Figure 17 below illustrates the structural model developed for this study by using SmartPLS 3 software.

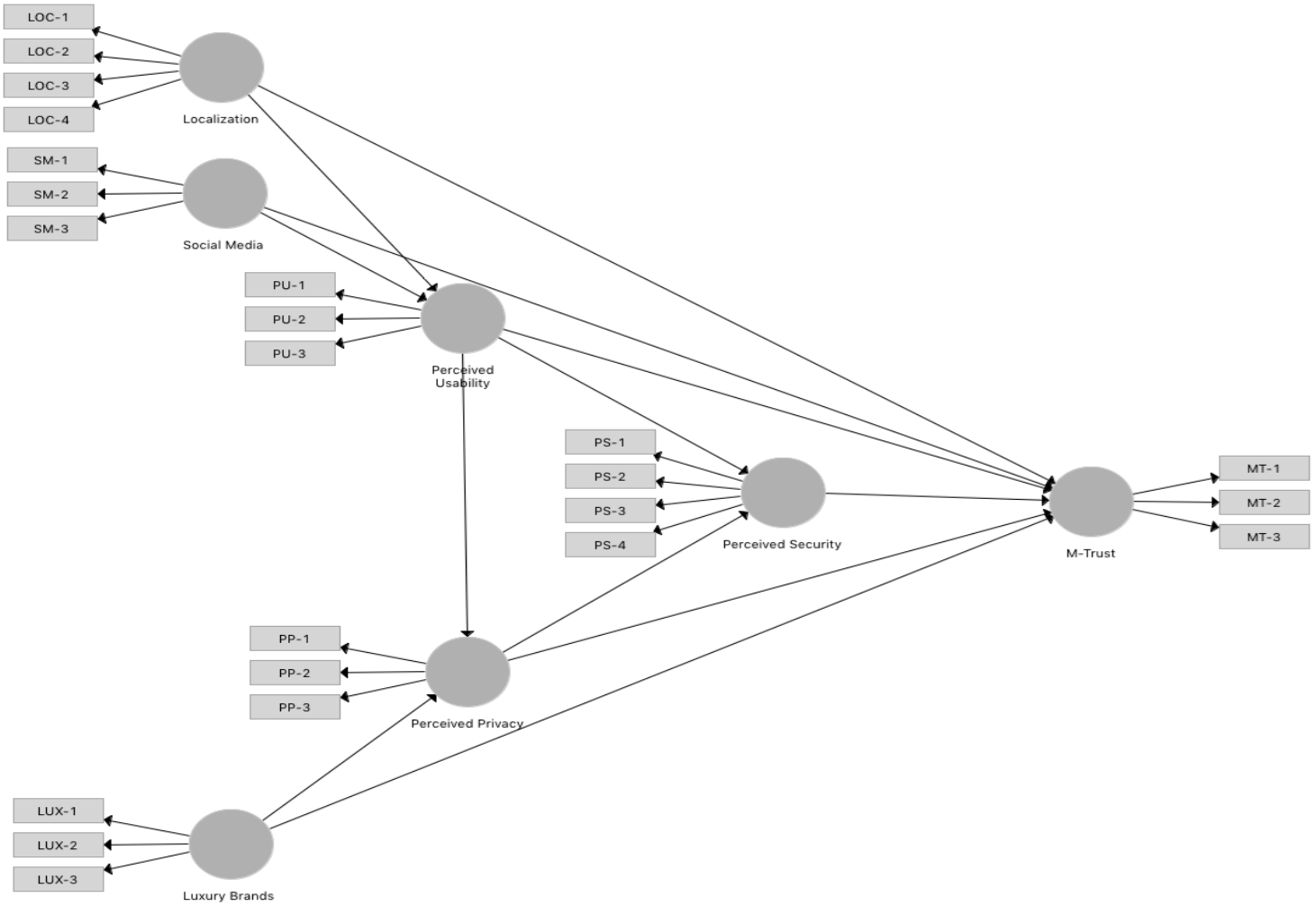

Figure 17. Developed M-Trust structural model in SmartPLS 3

In the conceptual model developed for this study and shown in Figure 17, there are seven circular objects that are the latent variables and, and 23 rectangular objects, which are the observed variables (reflective measures) or indicators from the questionnaire (e.g. LOC-1, LOC-2, and LOC-3). Six latent variables were hypothesized (H1, H3, H5, H7, H10, H12) to positively and directly impact the target construct trust in M-commerce (M-Trust). Furthermore, as motivation factors were split into three (e.g. Localization, Social Media, and Luxury Brands), the first two factors were predicted to influence Perceived Usability (H2, H4), which was hypothesized to impact "Perceived Privacy" (H9), "Perceived Security" (H8), and ultimately "M-Trust" (H12). "Luxury Brands" construct however, was hypothesized to impact perceived privacy (H6), that was proposed to have positive impact on perceived security (H11) and finally trust on M-commerce (H12).

Typically, PLS-SEM model is analyzed in two stages; at which, the first stage is to assess the reliability and validity of the measurement model (the relations between indicators and constructs) and the second stage is to evaluate the structural model (the relations between constructs) via interpreting the path coefficients and identifying the capability of the proposed conceptual model. This sequence promises that before attempting to draw any conclusion about the relations between the latent variables (constructs), the indicators (survey questions) are reliable and valid (Barclay et al., 1995; Hulland, 1999; Shuhaiber, 2016). Therefore, the following sections are presenting the results obtained from assessing the measurement and structural models of this study.

4.2.1. Testing Measurement Model

In order to provide support for the suitability to involve reflective constructs in the path model, it is important to examine the reflective measurement model (Hair et al., 2014). The examination of the reflective measurement model is consisting of three reliability tests that are: (1) composite reliability that evaluates the internal consistently, and individual indicator reliability; (2) convergent validity, which is the average variance extracted (AVE); and (3) one validity test that is called the discriminant validity (Chin, 1998; Hulland, 1999).

The next sections explain the results obtained from SmartPLS 3 and highlight every criterion for the assessment of the reflective measurement model.

4.2.1.1. Internal Consistency Reliability

Usually, internal consistency reliability is the first criterion that has to be examined. This criterion is different from the traditional Cronbach alpha, which measures the reality with regard to the inter-correlation between the observed variables (indicators) by assuming that all of the indicators are having the same outer loading on the construct. PLS-SEM on the other hand, is taking into consideration the different outer loadings of the indicators and prioritizing them accordingly. This measure of internal consistency reliability is referred to as composite reliability (Hair et al., 2014).

According to Hair et al. (2014) and Nunnally and Bernstein (1994), composite reliability values ranging from 0.6 to 0.7 can be considered acceptable in case if the research study is exploratory and values ranging from 0.7 to 0.9 can be considered satisfactory. But, Drolet and Morrison (2001) claimed that values above 0.95 are not desirable as this may signify that there are redundant items (indicators) and the construct

might not be valid. Table 11 shows the obtained Cronbach's alpha and internal composite reliability values. Cronbach's alpha has been justified as all values are well above the minimum required level of 0.7 (Nunnally and Bernstein, 1994). In addition, internal composite reliability values are shown to be above 0.6 and below 0.95 and this implies that great level of internal consistency reliability have been demonstrated amongst all seven reflective latent variables (Constructs).

Table 11. Cronbach's alpha and internal composite reliability values

Construct	Cronbach's Alpha	Composite Reliability
Localization	0.798	0.868
Social Media	0.884	0.928
Luxury Brands	0.905	0.940
Perceived Usability	0.731	0.847
Perceived Privacy	0.775	0.869
Perceived Security	0.708	0.817
M-Trust	0.706	0.836

4.2.1.2. Convergent Validity

The degree at which an indicator can positively correlate with other indicators of the same construct is known as convergent validity; thus, indicator's outer loading and average variance extracted (AVE) criteria should be taken into consideration in order to

establish convergent validity (Hair et al., 2014).

As Hair et al. (2014) addressed, all indicators that are having outer loadings above 0.7 should be kept. However as Hulland (1999) highlighted, in social science studies researchers usually encounter weak outer loading, particularly when new scales are developed; therefore, indicators that have outer loadings between 0.4 and 0.7 should be removed from the scale only when removing them can increase the value of either composite reliability of the average variance extracted (AVE) above the recommended threshold values. Furthermore Hair et al. (2014) citied, indictors with outer loadings below 0.4 should be immediately excluded from the scale.

As for the average variance extracted (AVE), values of 0.5 or more implies the construct explains more than half of the variance of its indicators; whereas, values below 0.5 signifies more error is remaining on the indicators than the variance that is explained by the construct (Hair et al., 2014; Hulland, 1999). In the present research, it can be seen from Table 12 that the outer loadings for most of the indicators are above 0.7 except for inductors PS-1 and PS-2 that have outer loadings between 0.7 and 0.4 and none of the construers are having indicators with outer loadings below 0.4, which means all the indicators are reliable. Also, the AVE values are well above the minimum required level of 0.5, thus the measures of the seven reflective constructs have high level of content validity.

Table 12. Internal reliability and content validity

Construct	Indicators	Outer Loadings	Average Variance Extracted (AVE)
Localization	LOC-1	0.772	0.622
	LOC-2	0.786	
	LOC-3	0.854	
	LOC-4	0.737	
Social Media	SM-1	0.894	0.811
	SM-2	0.904	
	SM-3	0.904	
Luxury Brands	LUX-1	0.902	0.840
	LUX-2	0.934	
	LUX-3	0.913	
Perceived Usability	PU-1	0.902	0.648
	PU-2	0.934	
	PU-3	0.913	
Perceived Privacy	PP-1	0.902	0.689
	PP-2	0.934	
	PP-3	0.913	
Perceived Security	PS-1	0.636	0.534
	PS-2	0.575	
	PS-3	0.847	
	PS-3	0.826	
M-Trust	MT-1	0.781	0.629
	MT-2	0.769	
	MT-3	0.829	

As Hair et al. (2014) recommended, indicators with outer loadings between 0.4 and 0.7 should be further examined and compared with their corresponding composite reliabilities as well as average variance extracted, therefore indicator PS-1 with outer loading of 0.636 has been eliminated first from its construct "Perceived Security" and reliability measures have been re-estimated. It was found that, removing indicator PS-1 reduced the composite reliability slightly from 0.817 to 0.816 while the average variance extracted for the construct increased to 0.605. However, since PS-1, which defines how different payment methods can increase trust and intention to shop through M-commerce, the indicator has been retained and indicator PS-2 with outer loading of 0.575 has been considered for evaluation. Reliability results for the reflective measurements in the second iterations showed that, deleting indicator PS-2, which defines how presenting money back guarantee polices to the users can affect the trust and intention to do online shopping increased the composite reliability for the construct "Perceived Security" to 0.836 and the average variance extracted to 0.649. Accordingly, the indicator PS-2 had been eliminated from the current study and 22 validated indicators were used for the validity test, which is the second stage for the assessment of the measurement model. The new acceptable reliability results are summarized in Table 13.

Table 13. Revised results of internal reliability and content validity

Construct	Indicators	Outer Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Localization	LOC-1	0.772	0.798	0.868	0.622
	LOC-2	0.786			
	LOC-3	0.854			
	LOC-4	0.737			
Social Media	SM-1	0.894	0.884	0.928	0.811
	SM-2	0.904			
	SM-3	0.904			
Luxury Brands	LUX-1	0.902	0.905	0.940	0.840
	LUX-2	0.934			
	LUX-3	0.913			

Perceived Usability	PU-1	0.778	0.731	0.847	0.649
	PU-2	0.805			
	PU-3	0.832			
Perceived Privacy	PP-1	0.851	0.775	0.865	0.689
	PP-2	0.781			
	PP-3	0.857			
Perceived Security	PS-1	0.609	0.708	0.836	0.635
	PS-3	0.884			
	PS-4	0.867			
M-Trust	MT-1	0.787	0.706	0.835	0.629
	MT-2	0.757			
	MT-3	0.832			

4.2.1.3. Discriminant Validity

Once the criterion of the average variance extracted (AVE>0.5) is satisfied, the next sept in assessing the reflective measurement model is to examine its discriminant validity, which shows the degree at which a construct is truly distinct in both its meaning and attributes from other constructs in the model. Therefore, in this study, it was vital to establish discriminant validity in order to ensure that the statistically significant path coefficients are truly be supported by the collected data and not attained due to merely modeling a construct more than once in the model (C. White et al., 2013).

One approach to examine the discriminant validity is by assessing the indicators cross loadings on the related constructs. The loadings on the associated construct should always be higher than the loadings of other indicators that are not linked to a specific construct (Hair et al., 2011). For example, taking the construct "Perceived Privacy", the cross loadings result in Appendix E shows that the corresponding loadings to the construct are ranging from 0.780 to 0.859 and they are the highest; while the loadings of the other indicators that are not linked to "Perceived Privacy" construct range from 0.008 to 0.415. Similarly, the cross loadings of the other constructs were checked and hence distrainment validity confirmed.

Fornell-Larcker criterion is an alternative common approach that provides evidence for the construct's discriminant validity (Hair et al., 2014) and it has been also followed in this research study. This approach compares the values of the square root of the construct's average variance extracted with its correlations with other constructs. In other words, the method checks if the construct's AVE is more than its maximum correlation with the rest of the constructs or not. By achieving this it means a specific

construct is sharing more variance with its related indicators than any other construct in the model (Fornell and Bookstein, 1982; Hair et al., 2014). Table 14 presents the results obtained from the construct's discriminant validity.

Table 14. Discriminant validity

Construct	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Localization	**0.788**						
(2) Social Media	0.233	**0.901**					
(3) Luxury Brands	0.238	0.413	**0.916**				
(4) M-Trust	0.134	0.120	0.023	**0.793**			
(5) Perceived Security	0.172	-0.006	0.055	0.529	**0.797**		
(6) Perceived Usability	0.410	0.040	0.140	0.204	0.364	**0.805**	
(7) Perceived Privacy	0.374	0.105	0.247	0.249	0.406	0.462	**0.830**

The results in Table 14 prove that all of the constructs in the research's conceptual model have met Fornell-Larcker criterion as all of the none diagonal elements have correlations lower than the correlations of their relevant diagonal elements (Hulland, 1999). Subsequently, discriminant validity of this study has been established on indicator level (cross loadings approach) and construct level (Fornell-Larcker criterion).

4.2.1.4. Summary of Measurement Model Assessment

In summary, the results obtained from the assessment of the measurement model have been confirmed for the reliability as well as convergent and discriminant validity of almost all constructs with their associated indicators; except for indictor PS-2 under "Perceived Security" construct, which has been eliminated. Therefore, given the capability and suitability of the measurement model excluding the eliminated indicator, it was thought appropriate to move on to the examination of the structural (path) model.

4.2.2. Assessing Structural Model

According to Hair et al. (2014), after confirming all of the construct's indicators are reliable and valid, the next stage in PLS-SEM estimation procedures is to examine the structural model. This step includes testing the conceptual model's predictive capabilities together with the relationships between the latent variables (constructs). Nonetheless, prior to assess the structural model, the collinearity test needs to be inspected as high levels of collinearity amongst the predictor constructs may result in biased path coefficients. Additionally, the predictive capabilities of the model have been assessed in order to judge the quality of the proposed conceptual model (Henseler et al., 2014).

4.2.2.1. Collinearity Test

A tolerance level of VIF (Variance Inflation Factor) more than 5 in the predictor constructs signifies collinearity and when this occurs, then the construct should be further treated by either removing it from the path model or combining it with another construct (Hair et al., 2014). Therefore, collinearity for each predictor (construct) has been evaluated using SmartPLS 3 and the results presented in following Table 15.

Table 15. Collinearity test

Construct	M-Trust	Perceived Privacy	Perceived Security	Perceived Usability	Social Media
Localization	1.343			1.058	
Luxury Brands	1.282	1.020			
M-Trust					
Perceived Privacy	1.513		1.272		
Perceived Security	1.263				
Perceived Usability	1.464	1.020	1.272		
Social Media	1.245			1.058	

The results' table indicates that, no potential collinearity issues in the structural model as all of the constructs have VIF blow the threshold 5. Hence, all of the predictive constructs have retained, and the structural model of the current research study can be examined.

4.2.2.2. Predictive Capabilities Assessment

Unlike CB-SEM, the objective of the PLS-SEM is to maximize the variance explained and not to measure goodness-of-fit indices (Hair et al., 2014; Wetzels et al., 2009). Nevertheless, it is examined based on certain heuristic criteria, which can be obtained by the predictive capabilities of the model. In other word, the model is considered to be properly specified based upon how much it predicts the endogenous (dependent) latent variables (Rigdon, 2012).

Accordingly, the main criteria in testing the structural model that has been applied in this study are: (1) assessing the level of R^2 (Coefficient of Determination); (2) testing predictive relevance and effect size by running blindfolding procedures.

4.2.2.2.1. Coefficient of Determination Assessment (R^2)

One of the most popular measure to examine the structural model is the coefficient of determination (R^2) value, which predicts the accuracy of the model as well as represents the amount of variance explained by all exogenous (independent) constructs that are associated with a particular endogenous construct (Hair et al., 2014). The R^2 value ranges from 0 to 1 and greater values usually signify more level of accurate prediction; yet, the acceptable level of this measure is hard to determine as it depends on both the complexity of the conceptual model and the research study area (Hair et al., 2014). Cohen (1988) categorized the effect of R^2 values for the field of social and behavioral sciences into three classifications: small effect (R^2= 0.02), medium effect (R^2=0.13), and substantial effect (R^2=0.26). Based on the suggested classifications, the results in Table 16 show that, the construct M-Trust (0.299) falls within the substantial effect bracket, whereas, Perceived Security (0.205), Perceived Usability (0.171), and Perceived Privacy (0.248) fall under the medium effect.

Table 16. Coefficient of determination values

Construct	R Square	Effect size (Cohen, 1988)
M-Trust	0.299	Large
Perceived Privacy	0.248	Medium
Perceived Security	0.205	Medium
Perceived Usability	0.171	Medium

4.2.2.2.2. Assessment of the Effect Size (f^2)

Beside evaluating the level of R^2 for all of the endogenous latent variables, it is important to evaluate if deleting a construct from the conceptual model can cause critical impact on the endogenous constructs or not and this can be determined by assessing the effect size f^2 (Hair et al., 2014). As a rule of thumb, values of 0.02, 0.15, and 0.35 are giving indication that the exogenous latent variables have small, medium, or large effect, respectively, on an endogenous latent variable (Cohen, 1988). Table 17 illustrates the effect size values f^2 for each dependent variable with their related independent variables for the present research study.

Table 17. Effect size values f^2 for the dependent variables

Construct	M-Trust	Perceived Privacy	Perceived Security	Perceived Usability
Localization	0.00035			0.20454
Luxury Brands	0.00740	0.04525		
M-Trust				
Perceived Privacy	0.00136		0.09068	
Perceived Security	0.30071			
Perceived Usability	0.00002	0.24803	0.04936	
Social Media	0.02584			0.00373

As shown in Table 17, for the target dependent construct "M-Trust", the exogenous latent variables "Perceived Security" and "Social Media" have medium and small effect sizes, respectively; while, the others have no direct effect in explaining "M-Trust" variable. It can be also noticed, constructs "Perceived Usability" and "Perceived Privacy" as exogenous latent variables have small effect in explaining "Perceived Security" towards M-commerce. "Perceived Usability" on the other hand, plays a major role in explaining the privacy of the users in M-commence as it has large effect size. "Luxury Brands" construct as illustrated from the table shows that, it has small effect in explaining "Perceived Privacy"; and "Localization" as independent variable has medium effect size in explaining the endogenous variable "Perceived Usability". Finally, omitting the exogenous latent variable "Luxury Brands" has no effect in explaining the endogenous construct "Perceived Usability".

4.2.2.2.3. Assessment of Predictive Relevance (Q^2)

After calculating the R^2 values and the effect size f^2 of the endogenous latent variables as measures for the predictive accuracy, the Stone-Geisser's Q^2 value should be assessed (Geisser, 1974; Stone, 1974). Once the model demonstrates predictive relevance, then the data points of the reflective observed variables (indicators) can be correctly predicted (Hair et al., 2014).

The values of Q^2 can be obtained by executing blindfolding technique, which is an iterative method that omits every d^{th} data point in the indicator of the endogenous construct until each data point is omitted and the model re-evaluated (Chin, 1998; Ringle et al., 2009). This approach is comparing the original values of the reflective indicators with the predicted ones after the deletion of data point and if the predication value is closed to the original value; then it can be stated that, the path model has a high predictive accuracy (Chin, 1998). Moreover, for a particular exogenous construct, obtaining Q^2 value above zero is assumed to be an indicator that is having predictive relevance for the respective endogenous construct (Hair et al., 2014).

Following the procedures of blindfolding set in SmartPLS 3, the omission distanced has been specified based on the guideline given by (Hair et al., 2014); in which, divining the number of cases (observations) with omission distance should give an integer number and the distance values should be between 5 and 10. Thus, with 228 valid survey respondents in the current study, an omission distance of 7 has been chosen and blindfolding procedures have been performed. This means that each 7^{th} data point of the observed variables related to a construct is omitted in a separate blindfolding round. Table 18 shows Q^2 values obtained for each endogenous latent variable, the results

substantiate that, all of the Q^2 values were noticeably greater than zero and so providing support for the predictive relevance of the conceptual model with respect to the endogenous constructs.

Table 18. Predictive relevance values Q^2 for the dependent variables

Construct	Predictive Relevance ($Q^2 > 0$), Hair et al. (2014)
M-Trust	0.161
Perceived Privacy	0.160
Perceived Security	0.116
Perceived Usability	0.104

4.2.2.3. Assessment of Path Coefficients Significance

Since PLS-SEM makes no assumption for the data distribution (Urbach and Ahlemann, 2010). Thus, to test the statistical significance of the path coefficients, the standard error of each path coefficient should be determined by executing non-parametric procedures such as, bootstrapping (Chin et al., 2003). According to Hair et al. (2014), the number of bootstrap samples should be at least equal to the number of valid cases (observations) and not exceeding 5,000. Additionally, for a two-tailed test, the critical values a 1.65 at a significance level of 10%, 1.96 at significance level of 5%, and 2.57 at significance level of 1%. Hair et al. (2014) recommended that, path coefficients with 5% probability of error or less to be considered significant and the study fails to reject its null

hypothesis; however, when a research is exploratory, a significance level of 10% can be acceptable. The following Table 19 displays the significance testing outputs of the structural model path coefficients.

Table 19. Results of hypothesis testing

Path	Hypothesis	Path Coefficient (ß)	p Value
Localization → M-Trust	H1	0.018	0.793
Localization →Perceived Usability	H2	0.423	**0.000
Social Media → M-Trust	H3	0.150	*0.018
Social Media → Perceived Usability	H4	-0.057	0.407
Luxury Brands → M-Trust	H5	-0.082	0.207
Luxury Brands → Perceived Privacy	H6	0.186	**0.001
Perceived Usability → M-Trust	H7	-0.004	0.952
Perceived Usability → Perceived Security	H8	0.224	**0.001
Perceived Usability → Perceived Privacy	H9	0.436	**0.000
Perceived Privacy → M-Trust	H10	0.038	0.630
Perceived Privacy → Perceived Security	H11	0.303	**0.000
Perceived Security → M-Trust	H12	0.516	**0.000

*p<0.05., **p<0.01.

The results in Table 19 show that perceived security (ß =0.516) followed by the endorsement of social media influencers (ß= 0.150) are the primary predictors of the formation of mobile commerce trust. In contrast, perceived privacy and localization in term of local languages and local currencies have minimal bearing on M-Trust; yet, these factors are of increased importance for perceiving security (ß =0.303) and usability (ß =0.423), respectively, of M-commerce webstores or apps. In addition, the results indicate that having an M-commerce webstore/app that provides solely luxury brands or is perceived as usable has a negative impact on M-Trust. However, including perceived privacy and security as successors for the factors mentioned above can indirectly influence consumer M-Trust positively.

Accordingly, it can be said that all of the hypothesized relationships are significant at least at 5% significance level with the exceptions of Localization→ M-Trust (H1), Social Media→ Perceived Usability (H4), Luxury Brands→ M-Trust (H5), Perceived Usability→ M-Trust (H7), and Perceived Privacy→ M-Trust (H10).

Figure 18 illustrates the conceptual structural model results, including the coefficient of determination (R^2) values and path coefficients (ß) for all structural relationships.

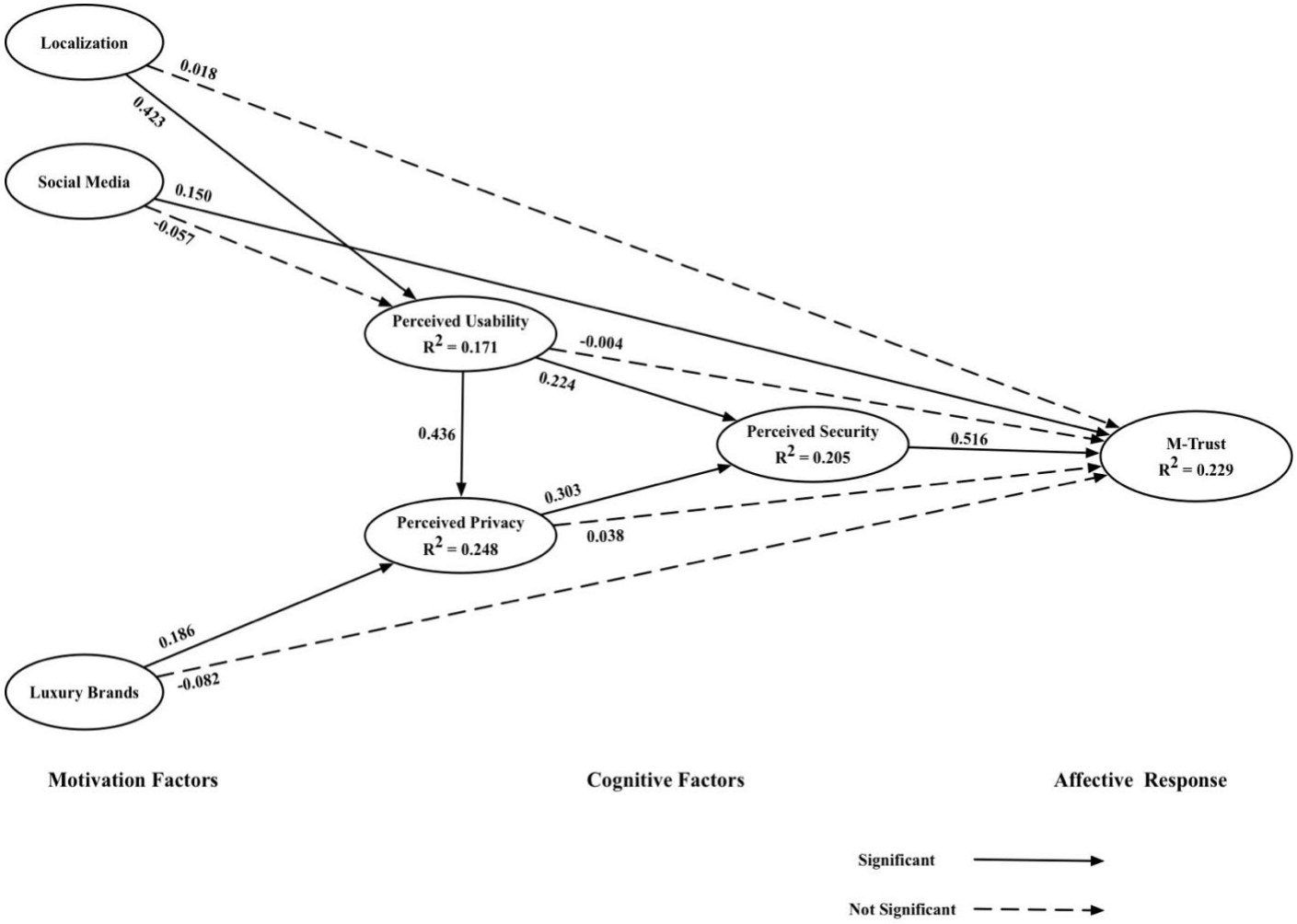

Figure 18. Results of M-Trust conceptual model

4.3. Post-hoc Analyses

In order to determine and better recognize whether trust perceptions towards mobile shopping among consumers with diverse nationalities, genders, and age ranges vary significantly or not, three multi-group analyses have been performed.

The first analysis to compare consumers' nationalities that have been categorized as Qataris and Non-Qataris, the second analysis was to compare between male and female users, and the last analysis between millennials (Gen. Y) and post-millennials (Gen. Z) users. In this analysis, language wise assessment has not been conducted as the sample size of consumers who are non-Arabic speakers was relatively small (n=55) and as mentioned in section 4.1.2 , the number of observations should meet the rule of thumb for the minimum sample size requirements (Hair et al., 2014) that has been computed to be 60 observations per group.

The following sections provides the results obtained from the multi-group analysis but before performing this procedure, measurement invariance as a pre-test has been conducted.

4.3.1. Measurement Invariance

Since the constructs in the structural model are defined by their associated indicators in the measurement model; hence, measurement invariance must be established before carrying out the multi-group analysis. This is because lack of measurement invariance signifies that the constructs are measuring different things although the indicators between the groups are similar (Garson, 2016). Furthermore, as addressed by (Hult et al., 2008) without verifying the measurement invariance of the outer model the analysis can produce misleading results.

As recommended by Henseler et al. (2015), the measurement invariance of composite models (MICOM) procedure was performed by using permutation algorithm in SmartPLS 3 in this study in order to assess if the measurement model is the same between the defined groups.

Table 20 displays the permutation p-values that assess if the outer loading of each construct is invariant across the group.

Table 20. Results of measurement invariance test

Construct	Permutation p-Values		
	Nationalities	Gender	Age Range
Localization	0.176	0.734	0.559
Luxury Brands	0.316	0.131	0.560
M-Trust	0.665	0.334	0.682
Perceived Privacy	0.807	0.281	0.234
Perceived Security	0.298	0.169	0.171
Perceived Usability	0.859	0.184	0.389
Social Media	0.951	0.507	0.771

As shown in Table 20, all of the permutation p-values are not significant, and this indicates that compositional invariance may be assumed. Accordingly, as given by Henseler et al. (2016) when compositional invariance confirmed, the multi-group analysis can be carried out in order to obtain whether structural invariance occurs across groups or not.

4.3.2. Multi-group Analysis

Although conventional PLS is a distribution free procedure, multi-group analysis is paramedic that reintroduces the distributional assumptions. Additionally, to compare paths among groups the analysis uses independent samples t-tests. Providing that there is always difference in coefficients between the groups; thus, this difference between the coefficients should be examined (Garson, 2016). One common approach to assess the significance of the path differences as suggested by Ringle et al. (2009) is the PLS-MGA, which is a non-parametric significance test. This test considers the absolute group-specific path coefficients difference to be significant if the p-value is either less than 0.05 or more than 0.95. In addition, as stated by Garson (2016), p-values that are less than 0.1 can be considered marginally significant for exploratory study related to social science; therefore, p-values more than 0.9 and smaller than 0.1 are also assumed to be slightly significant for the multi-group analysis.

The next sections explain the obtained results by defining nationality, gender, and age range as basis for multi-group comparisons by using SmartPLS 3.

4.3.2.1. Nationality: Qataris and Non-Qataris

Table 21 provides a summary of the results for all relationships in the model for the Qatari and Non-Qatari groups. The bootstrap of the standard deviations, t-values, significance p- values and confidence intervals are presented in Appendix F.

Table 21. Results of Qataris and non-Qataris groups

Path	Group 1	Group 2	Group 1 vs. Group 2	
	$p^{(1)}$	$p^{(2)}$	$\lvert p^{(1)} - p^{(2)} \rvert$	p Value
Localization → M-Trust	0.046	-0.026	0.072	0.693
Localization → Perceived Usability	0.448	0.453	0.005	0.483
Luxury Brands → M-Trust	-0.161	0.022	0.183	*0.094
Luxury Brands → Perceived Privacy	0.230	0.135	0.094	0.799
Perceived Privacy → M-Trust	0.044	-0.018	0.062	0.643
Perceived Privacy → Perceived Security	0.263	0.395	0.133	0.197
Perceived Security → M-Trust	0.564	0.531	0.034	0.593
Perceived Usability → M-Trust	-0.078	0.060	0.138	0.183
Perceived Usability → Perceived Privacy	0.427	0.456	0.029	0.388
Perceived Usability → Perceived Security	0.313	0.109	0.205	*0.929
Social Media → M-Trust	0.166	0.115	0.051	0.641
Social Media → Perceived Usability	-0.142	0.022	0.163	0.123
Sample size (n)	121	107		

Notes; Group1: Qatari, Group2: Non-Qatari
p (1) and p (2) are path coefficients of Group 1 and Group 2, respectively
*p>0.9 or *p<0.1

As can be seen from the results table, only two relationships (Luxury Brands →M-Trust and Perceived Usability → Perceived Security) differ significantly across the Qatari and Non-Qatari groups. The results reveal that there is a somehow significant negative effect of offering luxury brands products on M-Trust for Qatari consumers (β= -0.161). However, Qataris consumers are preferring to have an easy to use mobile app (β= 0.313) as usability factor enhances the security perceptions towers M-commerce.

4.3.2.2. Gender: Male and Female

Table 22 provides a summary of the results for all relationships in the model for male and female groups under the gender category. The bootstrap of the standard deviations, t-values, significance p-values and confidence intervals are presented in Appendix F.

Table 22. Results of male and female groups

Path	Group 1	Group 2	Group 1 vs. Group 2	
	$p^{(1)}$	$p^{(2)}$	$\lvert p^{(1)} - p^{(2)} \rvert$	p Value
Localization → M-Trust	-0.053	0.027	0.080	0.288
Localization → Perceived Usability	0.409	0.425	0.016	0.449
Luxury Brands →> M-Trust	-0.104	-0.037	0.066	0.308
Luxury Brands → Perceived Privacy	0.252	0.134	0.118	0.853
Perceived Privacy → M-Trust	0.089	-0.013	0.102	0.737
Perceived Privacy → Perceived Security	0.285	0.319	0.033	0.427
Perceived Security → M-Trust	0.534	0.523	0.011	0.533
Perceived Usability → M-Trust	0.055	-0.004	0.059	0.658
Perceived Usability → Perceived Privacy	0.270	0.611	0.341	**0.000
Perceived Usability → Perceived Security	0.188	0.275	0.088	0.278
Social Media → M-Trust	0.181	0.190	0.009	0.464
Social Media → Perceived Usability	-0.157	0.059	0.216	*0.075
Sample size (n)	114	114		

Notes; Group1: Male, Group2: Female
p (1) and p (2) are path coefficients of Group 1 and Group 2, respectively
**p<0.05, *p<0.1

By examining the p value column in the results table above, it can be said that there is a significant difference between male and female groups when it comes to the to the usability factor and its impact on the privacy. Women shoppers are perceiving usability features of mobile commerce will help them significantly (β= 0.611) in protecting their personal details and reducing their privacy concerns. Male consumers on the other hand are having a slightly significant negative impact (β= -0.157) on viewing social media influencers to be as facilitators in assisting them to make the mobile shopping experience easy.

4.3.2.3. Age Range: Millennials and Post-millennials

Table 23 provides a summary of the results for all relationships in the model for respondents who are blow the age of 18 years (Generation Z- Post-Millennials) and those whose age ranges between 18 and 34 years (Generation Y- Millennials). The bootstrap of the standard deviations, t-values, significance p- values and confidence intervals are presented in Appendix F.

Table 23. Results of millennials and post-millennials groups

Path	Group 1	Group 2	Group 1 vs. Group 2	
	$p^{(1)}$	$p^{(2)}$	$\lvert p^{(1)} - p^{(2)} \rvert$	p Value
Localization → M-Trust	0.086	-0.089	0.175	0.192
Localization → Perceived Usability	0.408	0.423	0.015	0.507
Luxury Brands → M-Trust	-0.121	0.028	0.149	0.746
Luxury Brands → Perceived Privacy	0.231	0.066	0.165	0.144
Perceived Privacy → M-Trust	0.152	0.124	0.029	0.452
Perceived Privacy → Perceived Security	0.069	0.474	0.405	**0.982
Perceived Security → M-Trust	0.508	0.492	0.016	0.465
Perceived Usability → M-Trust	-0.012	-0.084	0.072	0.353
Perceived Usability → Perceived Privacy	0.379	0.564	0.185	*0.904
Perceived Usability → Perceived Security	0.418	0.000	0.418	**0.015
Social Media → M-Trust	0.233	0.005	0.228	*0.096
Social Media → Perceived Usability	-0.233	-0.061	0.172	0.827
Sample size (n)	62	87		

Notes; Group1: <18 years, Group2: 18-34 years
p (1) and p (2) are path coefficients of Group 1 and Group 2, respectively
**p<0.05, *p>0.9 or *p<0.1

The results that comperes the significant difference between generation Y and generation Z consumers in Qatar shows that, millennials consumers are perceiving usability of mobile commerce apps to have a favorable influence on protecting their privacy information (β= 564), which can lead to significant positive impact on perceived security (β= 0.474). Furthermore, the results disclose that generation z respondents are having a marginally significant effect (β= 0.233) to trust mobile commerce apps that are endorsed by social media influencers. Finally, perceived usability is playing a vital role in promoting security towards M-commerce for young consumes (β= 0.418) as revealed from the results Table 23 above.

Chapter 5: Discussion of Research Findings

Many of the existing studies associated with mobile commerce have identified the process of building customer trust as complex and complicated (Li and Yeh, 2010). However, there is still a lack of clarity as to how introducing the motivational factors of localization, endorsement from social media influencers, and the offering of luxury brand products can promote favorable relationships towards building trust in M-commerce. Our research contributes to fill this gap by empirically examining the influence of these newly explored motivation factors on M-Trust along with the most cited trust antecedents (e.g., perceived usability, perceived privacy, and perceived security). Therefore, in this chapter the major findings of this study are discussed.

5.1. The Effect of Motivation Factors on M-Trust

The elements that are classified under the motivation factors set include localization, luxury brands, and social media. Among the three factors, social media was found to be the most influential motivation factor on trust in M-commerce. However, the effect of localizing mobile commerce apps as well offering luxury brands products on M-Trust were found to be insignificant in Qatar. The next section discusses the hypothesis that is supporting positivity the significant impact on mobile commerce trust under the motivation group.

5.1.1. Social Media to Trust - H3, (ß= 0.150; p<0.05)

Endorsement from social media influencers was hypothesized to build direct significant consumers trust towards M-commerce. The finding provided support for this relationship and this means that when M-commerce webstores or apps are promoted by social media influencers, consumer trust will increase in the endorsed mobile store.

This is not surprising considering that online consumers today are trusting influencers more than traditional advertisers as they believe that influencers are more authentic and thus affect them positively. Hence, influencers of social media in the Qatari society are playing a vital role in assisting the consumers to discover new products and services and eventually triggering their purchase interest through mobile commerce. This finding is consistent with other studies claims (S. Chu et al., 2013; Habibi et al., 2013; Silvera and Austad, 2004) and it seems to add substantial dimension in the mobile commerce literature by confirming a significant influence of social media influencers on trust in the context of mobile commerce.

Correspondingly, endorsements from social media influencers; considered as sources of credibility and authenticity, should be one marketing strategy that can help develop consumer trust in M-commerce.

5.2. The Effect of Cognitive Factors on M-Trust

Cognitive factors group is consisting of three trust predictors that are perceived usability, privacy, and security. The construct perceived security was found to have significant positive impact of consumer trust in M-commerce; additionally, for the current study, this factor has found to be the most dominant trust predictor. On the other hand, the level of trust on the factors perceived usability and privacy were test and found to have no significant influence. The following section provide brief discussion on the factor perceived security and its direct relationship with M-Trust.

5.2.1. Perceived Security to Trust – H12, (ß= 0.516; p<0.01)

Perceived security was hypothesized to have a positive significant influence on trust in M-commerce. The results presented in the previous chapter and built of the

existing literature provided support for this hypothesis signifying that there is strong positive relation between security and trust in mobile shopping. Thus, consumers who perceive M-commerce app or website to be secured will be more likely to trust it. Conversely, mobile shoppers who tend to view the mobile commerce store less secured may put less trust in it. The result demonstrated in this study confirms that perceived security influences consumer trust within the context of M-commerce as it agrees with the findings of several prior studies (Y. J. Kiang, 2016; Kim et al., 2010; Safa and Solms, 2016; Tsiakis and Sthephanides, 2005).

The logical justification of this finding could be that when the power of security is perceived high; then, an increased level of trust amongst consumers regarding mobile commerce can be possible. In addition, as the results of Online Shoppers in section 4.1.1.1 (Table 8) have noticeably shown that almost 88% of the consumers in the analyzed survey sample are experienced at which 48% of them have experienced online shopping for more than two years ; hence, it may be most probably that the experienced mobile commerce users are already aware of the technologies associated with security and they can straightforwardly recognize the security measures like encryption keys and third party security seals.

Accordingly, M-commerce businesses may encourage mobile shoppers to trust their apps or websites through making the technical and sales security features noticed by the users. Technical features include encryption, SSL seals, authentication, and antivirus scans; whereas, the sales features are refund policies and other guarantees. Moreover, providing different payment options can also be impactful, for example, by offering cash on delivery and e-wallet options (e.g., PayPal) as these encourage consumers who may

not own credit cards or may be reluctant to use them to buy products online as it has been confirmed from the collected reasons form survey participants who are reluctant to do online shopping even in future (Table 10). Providing these features can transmit a signal to the mobile consumers in Qatar that this business is really working on meeting their perceived security standards; thus, improving the level of trust.

5.3. The Effect of Motivation Factors on Cognitive Factors

Although the factors of localization and luxury brands have not shown any direct positive effect on consumer trust in mobile commerce, there have been significant indirect favorable effect through the mediation of the cognitive factors. The results confirm that in Qatari society, localizing the mobile commerce app or webstore can lead consumers to perceive it as usable in terms of ease of use and usefulness. Furthermore, the findings show that, providing luxury brands products via mobile commerce apps can significantly encourage consumers to see it a reputable mobile shopping store that can protect their personal details. However, the provided results explain that there is not significant relationship between the influence of social media and perceived usability. Hence, the subsequent sections are discussing localization and luxury brands factors and their effect of perceived usability and privacy, respectively.

5.3.1. Localization on Perceived Usability H2, (ß= 0.423; p<0.01)

Localization as new identified factor in the context of trust on mobile commerce has been hypothesized to have positive significant impact on perceived usability and the obtained result supported this hypothesis. This means that when mobile customers interact with localized M-commerce apps or websites in terms of being presented in the native language and displaying the products in the local currency , they will perceive

them as more usable (Baack and Singh, 2007; Singh et al., 2006b).

Correspondingly, consistent with Singh & Matsuo (2004) claim, it can be deuced that the language and currency are having a direct impact on user's perceived usability and when the mobile shopper struggles in understanding the content including headlines, product descriptions, currency conversions of the mobile commerce website or app this can lead to frustration. Therefore, when developing a mobile store, the local language should not be translated literally as this will not reflect the actual meaning of the language, but the business owners have to make extra effort to what exactly want to be communicated and how best to be deliver concisely to the consumers. Additionally, vendors should focus on keeping the information on their webstores updated as outdated details on currency conversions for example can lead to a reduction in perceiving the mobile shopping stores to be usable by consumers residing in Qatar.

Despite the empirical evidence that localization can bring positive impact on consumer's perceived usability of any mobile app or website interface, our results disclosed that perceived usability did not significantly influence M-Trust directly and H7 was not supported. These results when viewed across the sample, conflict with the majority of prior studies, (e.g., Li and Yeh, 2010). Nonetheless, perceived usability favorably affects both perceived security and privacy (Kamoun et al., 2017; Nakayama et al., 2017), in which the former factor eventually leads to trust formation.

5.3.1.1. Perceived Usability on Perceived Security H8, (ß= 0.224; p<0.01)

The result proved that the hypothesized relationship between perceived usability and perceived security is significant and supported. This means when users feel the mobile commerce store is useful and easy to navigate, it will be perceived as secured and

this finding matches the results found in (Kamoun and Halaweh, 2012) research.

For instance, if the M-commerce app requires the mobile users to login regularly into their account to view their orders or set new order, this may enhance the security perceptions, yet this task might put more efforts on users. Hence, poor website or app usability that asks the consumers to remember their details every time and does not have an option to save the login details could impose extra burden on the users and so should be eliminated as it can reduce the security.

Another important explanation of this finding is that, when the mobile shoppers feel the payment process is not difficult to use they will consider the M-commerce app to be secured ;as a result, it is critical for developers to design user friendly payment service in order to enable the consumers to conduct their transactions securely and in an effective way (Katawetawaraks and Wang, 2011; Wang et al., 2005).

5.3.1.2. Perceived Usability on Perceived Privacy H9, (ß= 0.436; p<0.01)

Perceived usability has been hypothesized in the current study to have positive influence on trust in M-commerce and the findings proved this hypothesis, suggesting that the more usable the mobile shopping app is perceived, the more the consumers privacy will be seen as protected and their private information will never be used for other purposes. This finding is in line with the result found by (Nakayama and Taylor, 2016) who proved that usability can notably reduce the user's privacy concerns.

Therefore, it can be understood that having poor mobile store interface can weaken the consumer privacy protection. For instance, when the privacy settings or the presented privacy policy are not easy to understand and used. Hence, for the developers of mobile commerce apps and websites, the finding highlights the importance of

continuous usability enhancement as it pacifies the user fears on privacy risks.

Unexpectedly, similar to the effect of perceived usability on M-Trust, the results presented that perceived privacy factor was not an important trust predictor for the sampled consumers a found in (Bonsón Ponte et al., 2015) research. One possible explanation of this finding might be that consumer in Qatar have perception that other measures such as security protection mechanisms are more important than privacy and our empirical evidence has shown that perceive privacy has significant positive effect on perceived security, which agrees with the findings of (Shin, 2010) as it will be discussed in the next subsection.

5.3.1.2.1. Perceived Privacy on Perceived Security H11, (ß= 0.15; p<0.303)

In this research perceived privacy has been hypothesized to have a desirable impact on perceived security and our quantitative finding supported this hypothesis. This indicates that the more the mobile app or website perceived by online shoppers to have the capability to retain and protect their details, which were collected via transactions with the M-commerce the more the user will perceive it to be secured and safeguarded. Thus, this effect along with the validated H12 (perceived security to M-Trust) demonstrates a clear mediating influence of perceived privacy on trust via the factor perceived security. This effect is consistent with (Shin, 2010) finding in the context of social networks.

From this finding it can be inferred that in the context of mobile commerce, users in Qatari society may think protecting only their privacy is not sufficient to trust the M-commerce app or website; but, the may expect the app to have more security measures in order to increase their feelings of trust.

5.3.2. Luxury Brands on Perceived Privacy H6, (ß= 0.186; p<0.01)

Offering luxury brand products is hypothesized to have a significant positive impact on the perceptions of privacy protection in mobile commerce and this has been confirmed in our empirical findings. This shows that providing luxury brands can play a vital role in consumers' perceptions that their privacy details are protected. This result is consistent with what has been cited in (Dion and Borraz, 2015) and (Chaudhuri and Holbrook, 2001) luxury brand products studies.

It can be understood from the finding that in Qatar the consumers believe luxury brands products are sold only by reputable mobile commerce stores. Additionally, consumers perceived the reputable websites and apps to have adequate guarantee in regard to prevent any privacy risks as these retailers' value consumer's privacy. This justification is in line with what has been stated by (Shanti, 2017); in which, consumers inherently expect online stores that are selling luxury brands to be better and reliable in protecting their private information and this is due to the nature of these brands being global.

Thus, it can be deduced that offering luxury brands via M-commerce can indirectly affect consumer trust. The reasoning behind this finding could be that when mobile consumers know that the brands on the mobile commerce apps have a strong reputation, they feel a sense of privacy and security protection that can lead ultimately to trust.

5.4. Perceptions of Different Sub-groups on M-Trust

From the multi-group analyses, it has been found that mobile users with different group identities have different perceptions on trust towards mobile commerce in the

Qatari society. Hence, the following sections discuss the significant findings obtained from the analysis across the different groups.

5.4.1. Nationality: Qatari vs. Non-Qatari Consumers

From the sub-group analysis categorized by nationality, our findings revealed that the effect of motivation factors set on M-Trust for the sub-sample results are similar to the full sample except for luxury brands factor that show a marginally significant negative impact on trust for Qatari consumers. These results indicate that for both Qatar and non-Qatari consumers, endorsement from social media influencers is a significant predictor of their trust towards mobile commerce.

Results show that for Qataris, mobile commerce trust is developed through their perceived usability together with perceived security; thus, this implies that they build their mobile commerce trust under particular conditions. Mobile friendly apps and websites is the key driver for Qatari users to feel more secured, and too time-consuming shopping process will lead indirectly to distrust.

For non-Qatari consumers, the results disclose that perceived usability factor is not a big concern for them in order to trust the M-commerce app and a plausible justification could be due to their familiarly with mobile commerce as they may have purchased through mobile stores for many years.

5.4.2. Gender: Male vs. Female Consumers

The results highlight that there are no significant differences with regard to gender in Qatar towards mobile commerce trust. However, women compared to men have been shown to be more concerned with usability of the app or website. This means that in order for the female consumers to feel that their private details are protected the mobile

store should be user friendly and easy to use. The finding agrees with Venkatesh & Morris (2000) study that connected gender with perceived ease of use and perceived usefulness.

5.4.3. Age Range: Millennials vs. Post- Millennials Consumers

The results show that there is significant difference between generation Y and generation Z when it comes to the effect of social media influencers on trust towards mobile commerce. Young consumers are heavily impacted by social media in regard to mobile shopping and this is mainly because these consumers are making the social media channels as part of themselves. In addition, generation Z has been observed to trust social media influencers because these influencers are more approachable and thy can leave lasting impression.

Given that presently post-millennial consumers are evolving very fast into the most influential group for mobile shopping, M-commerce businesses should use popular social media influencers in Qatar in order to reach a high volume of generation Z users to build trust and eventually purchase from their mobile commerce apps or websites.

Chapter 6: Conclusions and Implications

This chapter concludes the key findings of the proposed factors that influence Qatari consumers to trust mobile commerce. Additionally, the theoretical and practical implications of this research study are discussed. The limitations of this work together with the direction for future research are presented.

6.1. Conclusion

Despite the global growth in the use of mobile commerce and the facts that smartphones have the capability to save consumer's time while shopping through mobile webstores or apps by offering on-the-go shopping, smart user's interface, and the engagement with social media platforms. The literature confirms that there are still ongoing problems that are impeding the full adoption of M-commerce and trust is the major one. However, the existing literature shows that there is still a lack of what factors from consumers' perspective can promote trust towards mobile commerce particularly in the Qatari society.

Since the objectives of this research were to broaden the knowledge on what influences the perception of trust among Qatari population in the field of mobile commerce as well as to understand to what extent the factors affect consumers' trust. accordingly, develop a conceptual framework of user's trust in the context of M-commence have been developed by incorporating some factors that have been already examined in studies related to online commerce, consumer's trust, as well as technology acceptance and adoption. Such factors like, perceived usability, perceive privacy, and perceived security. Other factors such as, localization, luxury brands, and social media have been inferred based on the major reasons that lead Qatari consumers to be reluctant

to do online shopping via their mobile devices.

During the theoretical review, no qualitative study could be found to show how much localization, luxury brands, and social media contribute to trust in mobile commerce; hence, it was interesting to understand how the exploratory aforementioned factors affect consumer's trust and how they are related to perceived usability, perceived privacy, and perceived security.

The research findings signify that the proposed structural model has a large level of R^2 value for the construct M-Trust and medium effect for the factors (perceived usability, perceived privacy, and perceived security) and this offers empirical validation for the conceptual framework. Additionally, the significance of the path coefficients revealed that perceived security and endorsement from social media influencers are the leading trust antecedents amongst Qatari consumers while the other factors have no direct influence on trust in M-commerce; yet, these factors have been found to be highly correlated with each other and they could favorably impact user's trust indirectly through the dominant construct "Perceived Security". Multi-group analyses have shown that nationalities differences related to the factor perceived usability has positive indirect effect on Qataris trust, gender differences results confirmed that female consumers' trust can be enhanced by providing usable mobile webstores that can protect their personal details. Additionally, the age range differences findings have proved that young consumers can easily trust M-commerce via the endorsement from popular social media influencers. The results also emphasized that perceived security is one of the most significant factors that affect drastically mobile commerce trust between all groups of consumers living in Qatar.

Finally, it can be concluded the presented findings of this research have filled an important gap in the field of consumer's trust in mobile commerce. Moreover, the findings have also made a regional contribution as it has been thought that influences of users trust in M-commerce have not been studied in Qatar specifically, and the Middle East countries generally.

6.2. Implications

This research emphasizes on the urge for examining the consumer's trust factors in M-commerce, in order to apply innovative tactics and strategies within the dynamic context of mobile commerce. Numerous aspects have both theoretical as well as practical implications that are provided in the following subsections.

6.2.1. Theoretical Implications

From a theoretical standpoint, this work has applied perceptions of consumers trust in the context of mobile commerce, which is considered to be a relatively a new form of conducting business. The research has provided a satisfactory conceptual model that can offer insightful perspective by studying consumer trust towards M-commerce.

In addition, this study has expanded the existing theory through the empirical exploration and validation of the motivation factors that have been extracted from the main hurdles the impede consumers in Qatar to trust mobile shopping. To the best of our knowledge, the investigation of the new factors had not been empirically examined in the M-Trust literature.

Furthermore, the research work has made a great contribution to the available M-commerce literature by confirming that social media influencers as a new identified construct was a significant indicator for users to trust mobile commerce.

This study has provided a new way to recognize the undisclosed effect created by the new explored factors (e.g., localization, luxury brands, and social media). Hence, the presented conceptual framework can be adopted for other countries and cultures around the world. Finally, the study has also created opportunities for scholars to conduct studies that are aiming to either confirm or enhance the proposed conceptual framework.

6.2.2. Practical Implications

Our findings have emphasized the need for mobile commerce developers and practitioners to have a good understanding of the perceptions of consumers trust in mobile commerce as trust represents a serious facet for consumers and it could eventually promote them to do mobile shopping.

The results suggest that incorporating security measures in the mobile store has the most significant impact on consumer's trust. This signifies that, online vendors should support reliable security in order to prove that their mobile commerce webstores or apps are having the capability to carry out business to consumers tractions safely. This can be attained through the deployment of sophisticated authentication systems and using digital certificates. Also, the mobile store vendors should be certified by trusted third parties (e.g., TRUSTe and McAfee SECURE) as they are issuing trusted seals that can tell the users that both identities of the vendors and security of mobile commerce webstores are already been verified. Moreover, the vendors should include a different payment options as this can allow the consumers to use their preferred payment methods as well as increase the feeling of consumers trust towards the mobile store. This cannot be attained unless financial institutions streamline the issuance process of online payments tools like, mobile wallets and prepaid cards.

In addition to perceived security, the results have also demonstrated that consumers in Qatari society are placing more trust on social media influencers. Therefore, mobile commerce marketers have to realize that it is no longer enough to market their products and services by using old approaches, but they should collaborate with social media influencers as well. This is because getting the products and services into the hands of popular influencers, mobile stores vendors could leverage the influencers followers. Moreover, as social media platforms today are presenting various opportunities (e.g., sponsored Instagram posts, Snapchat stories) mobile commerce businesses should make ensure that the endorsement from social media influencers appear to consumers both believable and genuine. Additionally, markets should find influencers with followers that are meeting their target consumers as this is one of the central influencer market that can allow mobile stores vendors to be trusted and ultimately visited by consumers.

As recognized from the research findings, localization of mobile commerce webstores can lead consumer to perceive these stores as usable, protecting their personal details, and secured, which ultimately leads to trust in mobile commerce. Thus, M-commerce developers should focus on localizing the webstores or apps by incorporating local languages that are easy to understand with a brief content that is straight to the point. Also, the prices of the product sand service should be in the consumers local currencies and this feature should be synchronized on time as outdated details can reduce user perceived usability for the presented mobile store and eventually trust. Developers should also design M-commerce webstores in professional way by including easy to use interface and high-quality interference as these features can make consumers perceive

high level of safety in terms of protecting their private information and security that can foster mobile commerce trust. Furthermore, form consumer to perceive positive privacy, the mobile store vendors should offer privacy for user's details that comprise of users account details and financial information, home address and contact details. Given that to have a high level of privacy, consumers demand great control over their information; hence, vendors can provide this by: (1) not forcing the user to sign up before viewing the products and services; (2) not asking the user to provide details that are not relevant to placing their orders; and (3) offering an option for user to unsubscribe from the mailing list. Mobile vendors should also make warranty information such as privacy statement, return polices, and trusted seals visible in their webstores or apps as these warranties can allow the consumers to have a sense of both control and security via the mobile commerce stores.

By suggesting the aforementioned strategies, this study has offered practitioners with comprehensions regarding the factors that can enhance the trust of consumers in M-commerce in the Qatari environment.

6.3. Research Limitations and Future Work

This study has some limitations and presents some opportunities for future research, which are addressed in the following points;

1. First, this is an exploratory research; therefore, confirmatory factor analysis could be conducted in future studies.
2. Second, as the majority of the survey respondents were Qatari, and their primary language was Arabic, there might be a possibility that nationality and primary language could make biases and the collected sample cannot answer for the entire

mobile users as well as those who are active in performing mobile commerce activities in the Qatari community. Accordingly, the proposed conceptual model can be extended further and applied to other groups of people living in Qatar.

3. Third, there might be some potential cultural limitations in this study because the results were limited to online users in Qatar and may not be generalized to other countries.
4. Fourth, even though the obtained level of R^2 was high in the social science context, proposing additional motivations factors to explain the construct "M-Trust" can enhance the developed conceptual model's predictive accuracy.
5. Last, our sample size was comparatively small, although it surpassed the minimum required limit for PLS; hence, larger sample sizes could be used in the future as they are preferable to produce more stable results (Zhou et al., 2011)

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Appendices

Appendix A: Questionnaire

About the current study - حول الدراسة

تحيه طيبة...

الهدف من هذا الاستبيان هو التعرف على العوامل التي تشجع الأشخاص على الثقة باستخدام تطبيقات التسوق الالكتروني من خلال الهواتف الذكية في قطر

يستغرق ملأ هذا الاستبيان مدة لا تزيد عن 4-5 دقائق. لأي استفسار يمكنكم التواصل عن طريق البريد الالكتروني 200659632@student.qu.edu.qa

شكرا لتعاونكم ،

Thank you for taking the time to participate in our study, which focuses on understanding the factors that motivate consumers to use and trust mobile commerce (**m-commerce**) applications on their smartphones.

This survey will take about 4-5 minutes to complete. Please choose the answers that are related to your experience and attitude towards shopping online.

If you have any question regarding this survey, please contact us at 200659632@student.qu.edu.qa

Section - A: Personal Information - القسم (أ): البيانات الاولية

* Nationality - الجنسية

* Primary language - اللغة الاولية

Other languages (if any) - لغات أخرى (ان وجد)

* Gender - الجنس

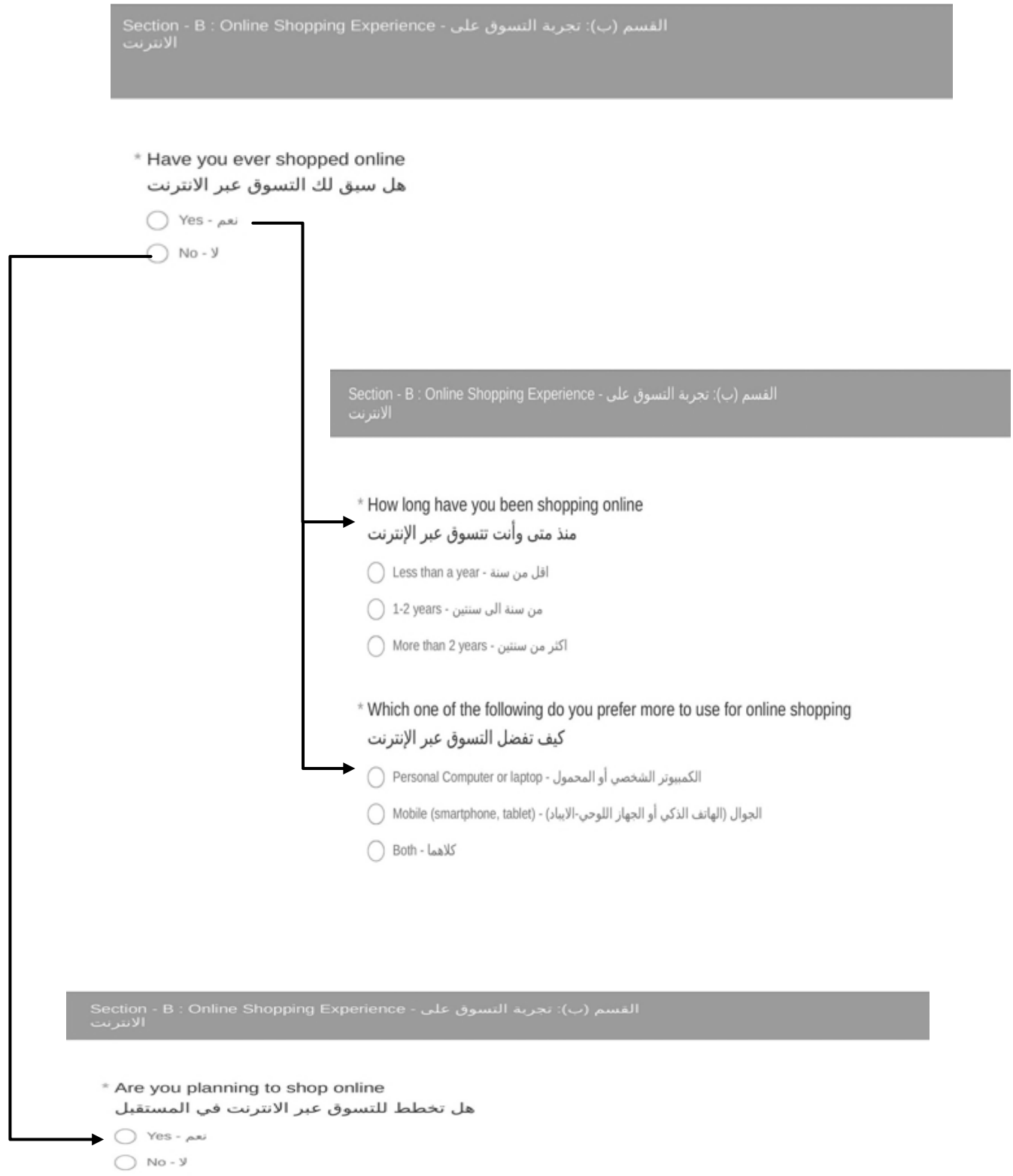
- Male
- Female

* Age range - العمر

- Under 18 - اقل من 18 سنة
- 18 to 24 - من 18 سنة الى 24 سنة
- 25 to 34 - من 25 سنة الى 34 سنة
- 35 to 44 - من 35 سنة الى 44 سنة
- 45 or older - اكثر من 45 سنة

* Level of education - المستوى التعليمي

Experienced and Future Online Shoppers Survey



Section - C: Trust and intention to shop online - القسم (ج): الثقة والتسوق عبر الانترنت

Please rank the following statements to best describe your opinion while you are shopping online. If you have never shopped online but plan to do so, please answer in a way that you think you would do.

الرجاء تقييم العبارات التالية لأفضل وصف لرأيك أثناء تسوقك عبر الإنترنت. إذا لم تتسوق سابقا عبر الانترنت ولكن تخطط للقيام بذلك، يرجى الإجابة بالطريقة التي تعتقد أنك سوف تقوم بها

* I prefer to shop online through m-commerce apps/websites that are trustworthy.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تكون موثوقة

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that are owned by existing trustworthy companies (e.g. Amazon, eBay).

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تمتلكها شركات التسوق الموثوقة (مثل امازون, eBay)

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites when transactions are trustworthy.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية عندما تكون عمليات الدفع لديها موثوقة

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that offer alternative payment options (e.g. cash on delivery, PayPal, ...etc.).

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي توفر أكثر من طريقة للدفع (مثل، الدفع عند الاستلام,PayPal)

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that present money backguarantee policy.
أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تعرض سياسة ضمان الاستبدال والاسترجاع

(5) StronglyAgree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites when transactions are secured.
أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية عندما تكون عمليات الدفع لديها امنه

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that are using security system.
أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تستخدم انظمه الأمان للدفع الالكتروني

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to online through m-commerce apps/websites that protect personal information (user's data, and credit card details).
أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي يكون لديها نظام حماية للخصوصية
(حماية المعلومات الشخصية للمتسوق)

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that present user's security and privacy statements.
أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تقدم معلومات عن الخصوصية والأمان للمستخدم

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that display government policies.
أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تنص شروط حقوق المستهلك

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that are organized in such a way that minimizes my shopping time.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تكون مصممة بطريقة سهلة توفر الوقت والجهد

(1) Strongly Agree موافق بشدة	(2) Agree موافق	(3) Neutral محايد	(4) Disagree غير موافق	(5) Strongly Disagree غير موافق بشدة
◯	◯	◯	◯	◯

* I prefer to shop online through m-commerce apps/websites that support instant messaging forenquiries.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي توفر خاصية المحادثات الفورية للاستفسارات

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
◯	◯	◯	◯	◯

* I prefer to shop online through m-commerce apps/websites that provide order tracking from invoicing to delivery.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي توفر خاصية تتبع الطلب من وقت الدفع الى الاستلام

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
◯	◯	◯	◯	◯

* I prefer to shop online through m-commerce apps/websites that offer more than one language including mine.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تكون مكتوبة بأكثر من لغة واحدة بما في ذلك لغتي

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
◯	◯	◯	◯	◯

* I prefer to shop online through m-commerce apps/websites that are written in my own language as I feel they are easy to use.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية المكتوبة بلغتي حيث أشعر أنها سهلة الاستخدام

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
◯	◯	◯	◯	◯

* I prefer to shop online through m-commerce apps/websites that display product description in my own language.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تعرض معلومات عن البضاعة بلغتي

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that display prices of the products in my local currency.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تعرض أسعار البضائع بالعملة المحلية

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that offer authentic luxury brands (e.g. Fendi, Gucci...etc.) products.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي توفر الماركات العالمية الفاخرة (مثل فيندي، غوتشي، ... الخ)

(1) Strongly Agree موافق بشدة	(2) Agree موافق	(3) Neutral محايد	(4) Disagree غير موافق	(5) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that sell authentic luxury brands products (e.g. Fendi, Gucci...etc.) because I believe they are secured in terms of payment.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تعرض الماركات العالمية الفاخرة (مثل فيندي، غوتشي، ... الخ) لأنني اعتقد انها امنه من حيث الدفع

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that sell luxury brands products (e.g. Fendi, Gucci...etc.) because they are trustworthy in terms of the products.

أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تبيع الماركات العالمية الفاخرة (مثل فيندي، غوتشي، ... الخ) لأنني اعتقد انها موثوقة من حيث البضاعة

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that have been promoted by social media influencers (e.g. bloggers, fashionistas, You-tubers...etc.).
أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تعرض توصيات من مشاهير التواصل الاجتماعي (السوشال ميديا)

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that are suggested by social media influencers (e.g. bloggers, fashionistas, You-tubers...etc.) as they are making the online shopping experience easier.
أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي يقترحها مشاهير التواصل الاجتماعي (السوشال ميديا) لأنهم يجعلون تجربة التسوق عبر الإنترنت أسهل

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

* I prefer to shop online through m-commerce apps/websites that display products reviewed by social media influencers (e.g. bloggers, fashionistas, You-tubers...etc.) because their opinions are honest.
أفضل التسوق من خلال تطبيقات المتاجر الإلكترونية التي تعرض منتجات تكلّم عنها مشاهير التواصل الاجتماعي (السوشال ميديا) لأنني اثق برأيهم

(5) Strongly Agree موافق بشدة	(4) Agree موافق	(3) Neutral محايد	(2) Disagree غير موافق	(1) Strongly Disagree غير موافق بشدة
○	○	○	○	○

Non-Online Shoppers Survey

Section - B : Online Shopping Experience - القسم (ب): تجربة التسوق على الانترنت

* Have you ever shopped online
هل سبق لك التسوق عبر الانترنت

- ◯ Yes - نعم
- ◯ No - لا

Section - B : Online Shopping Experience - القسم (ب): تجربة التسوق على الانترنت

* Are you planning to shop online
هل تخطط للتسوق عبر الانترنت في المستقبل

- ◯ Yes - نعم
- ◯ No - لا

Section - B : Online Shopping Experience - القسم (ب): تجربة التسوق على الانترنت

Why are you reluctant to shop online (You may select more than one option)
ما سبب ترددك في التسوق عبر الإنترنت (يمكنك تحديد أكثر من خيار واحد)

- ☐ Online shopping websites/apps don't support my own language and local currency.
  تطبيقات التسوق عبر الإنترنت لا تدعم لغتي والعملة المحلية
- ☐ I don't believe security is good enough in online shopping websites/apps.
  أنا أعتقد بإن التسوق عبر الانترنت غير آمن
- ☐ Registration and payment processes of online shopping are too complex.
  طريقة التسجيل والدفع للتسوق عبر الانترنت معقدة بالنسبة لي
- ☐ I have no credit card or other payment methods to shop online.
  ليس لدي أي بطاقة ائتمان او وسيلة دفع اخرى للتسوق عبر الإنترنت
- ☐ I can't touch and feel real products.
  لا أستطيع لمس او معاينة البضائع الحقيقية
- ☐ I'm concerned about my privacy.
  انا قلق بشأن الخصوصية في معلوماتي الشخصية ومعلومات بطاقات الائتمان
- ☐ I believe it's too risky to shop online.
  أعتقد أن التسوق عبر الانترنت يصاحبه مخاطرة كبيرة
- ☐ Other (please specify)

Appendix B: Demographic Profile

Section A: Personal Information

Category	Nationality	
Items	Frequency (N=250)	Percentage %
Qatari	126	50.4
Non-Qatari	124	49.6
Completed Responses	250	100.0
Missing Cases	0	0.0

Category	Primary Language	
Items	Frequency (N=250)	Percentage %
Arabic	188	75.2
Non-Arabic	62	24.8
Completed Responses	250	100.0
Missing Cases	0	0.0

Category	Gender	
Items	Frequency (N=250)	Percentage %
Male	120	48.0
Female	130	52.0
Completed Responses	250	100.0
Missing Cases	0	0.0

Category	Age Range	
Items	Frequency (N=250)	Percentage %
<25	66	26.40
25-34	97	38.80
>=35	87	34.80
Completed Responses	250	100.0
Missing Cases	0	0.0

Category	Occupational Status	
Items	Frequency (N=250)	Percentage %
Employed	172	68.80
Self-employed	8	3.20
Unemployed	22	8.80
Student	47	18.80
Retired	1	0.40
Completed Responses	250	100.0
Missing Cases	0	0.0

Section B: Online Shopping Experience

Online Experience	Have you ever shopped online?	
Items	Frequency (N=250)	Percentage %
Yes	191	76.40
No	57	22.80
Completed Responses	248	99.2
Missing Cases	2	0.80

Experienced Online Shoppers

Online Experience	How long have you been shopping online?	
Items	Frequency (N=191)	Percentage %
Less than a year	23	12.04
1-2 years	54	28.27
More than 2 years	113	59.16
Completed Responses	190	99.48
Missing Cases	1	0.52

Online Experience	Which one of the following do you prefer more to use for online shopping?	
Items	Frequency (N=190)	Percentage %
Personal Computer or laptop	49	25.79
Mobile (smartphone, tablet)	43	22.63
Both	98	51.58
Completed Responses	191	100.00
Missing Cases	0	0.00

Non-experienced in Online Shopping

Online Experience	Are you planning to shop online?	
Items	Frequency (N=57)	Percentage %
Yes	42	73.68
No	15	26.32
Completed Responses	57	29.84
Missing Cases	0	0.00

Non-online Shoppers

Demographics	Items	Frequency (N=15)	Percentage (%)
Gender	Male	3	20.00
	Female	12	80.00
Age Range	< 25	2	13.33
	25-34	6	40.00
	≥ 35	7	46.67
Nationality	Qatari	2	13.33
	Non-Qatari	13	87.67
Primary Language	Arabic	8	53.33
	Non-Arabic	7	46.67
Occupational Status	Employed	7	46.67
	Self-employed	1	6.67
	Unemployed	1	6.67
	Student	5	3.33
	Retired	1	6.67

Appendix C: Outliers Test

Mahalanobis Distance

Respondent ID	MAH_1	Prob_MAH	*Outlier?
1	10.03189	0.96759	No
2	17.44503	0.62392	No
3	9.93706	0.96930	No
4	14.51409	0.80350	No
5	20.91301	0.40227	No
6	12.03029	0.91503	No
7	17.44903	0.62365	No
8	9.60263	0.97482	No
9	12.48308	0.89845	No
10	13.05800	0.87488	No
11	11.09858	0.94363	No
12	12.48308	0.89845	No
13	10.75999	0.95221	No
14	15.16834	0.76670	No
15	16.66692	0.67448	No
16	10.23003	0.96381	No
17	14.99268	0.77683	No
18	23.49096	0.26533	No
19	16.49295	0.68561	No
20	27.53263	0.12093	No
21	22.84085	0.29668	No
22	13.60823	0.84979	No
23	12.37193	0.90268	No
24	18.38892	0.56181	No
25	27.65762	0.11776	No
26	19.33696	0.50003	No
27	8.29840	0.98970	No
28	14.34492	0.81259	No
29	10.48836	0.95843	No
30	20.35258	0.43608	No
31	14.18745	0.82087	No
32	15.03075	0.77465	No
33	16.48565	0.68608	No
34	17.09911	0.64653	No
35	22.18670	0.33047	No

36	19.97731	0.45935	No
37	11.63699	0.92800	No
38	12.44360	0.89996	No
39	29.47586	0.07880	No
40	17.87331	0.59575	No
41	16.51994	0.68389	No
42	15.82006	0.72772	No
43	17.09512	0.64679	No
44	18.59674	0.54816	No
45	32.85878	0.03496	No
46	20.25680	0.44197	No
47	10.20877	0.96423	No
48	15.71933	0.73388	No
49	26.39595	0.15313	No
50	13.13287	0.87161	No
51	22.28173	0.32542	No
52	26.81336	0.14060	No
53	61.06834	0.00000	Yes
54	21.24069	0.38309	No
55	72.17196	0.00000	Yes
56	9.63250	0.97436	No
57	55.87064	0.00003	Yes
58	24.28820	0.23003	No
59	12.01516	0.91555	No
60	3.65765	0.99998	No
61	14.05169	0.82787	No
62	6.88622	0.99704	No
63	51.86869	0.00012	Yes
64	11.36427	0.93622	No
65	35.07855	0.01969	No
66	19.69736	0.47700	No
67	18.53082	0.55248	No
68	22.43956	0.31714	No
69	4.73673	0.99982	No
70	11.69287	0.92624	No
71	13.58136	0.85107	No
72	11.95835	0.91750	No
73	8.85438	0.98453	No
74	21.64787	0.35992	No
75	16.09182	0.71091	No
76	4.73673	0.99982	No
82	16.41145	0.69079	No
83	10.69034	0.95386	No

84	4.73673	0.99982	No
85	4.73673	0.99982	No
86	4.73673	0.99982	No
87	13.90370	0.83534	No
89	16.61990	0.67750	No
90	43.43200	0.00179	No
91	13.54106	0.85298	No
92	10.90297	0.94870	No
93	27.97970	0.10988	No
94	34.01395	0.02603	No
96	22.68752	0.30440	No
98	10.97000	0.94700	No
99	28.46421	0.09886	No
100	4.73673	0.99982	No
101	17.97030	0.58936	No
102	24.84262	0.20752	No
103	8.30753	0.98963	No
104	25.83753	0.17125	No
105	8.17211	0.99067	No
106	5.45701	0.99946	No
107	9.61635	0.97461	No
108	25.20374	0.19375	No
109	18.13038	0.57882	No
110	38.66037	0.00735	No
111	31.29021	0.05147	No
112	32.55327	0.03775	No
113	20.50357	0.42685	No
114	6.43960	0.99816	No
115	27.14769	0.13116	No
116	24.59982	0.21717	No
117	34.73927	0.02154	No
118	47.28277	0.00054	Yes
119	30.12875	0.06779	No
120	31.25803	0.05187	No
122	33.71612	0.02811	No
123	39.29289	0.00613	No
125	42.50877	0.00237	No
126	26.49146	0.15019	No
127	37.89138	0.00913	No
128	23.07003	0.28537	No
129	12.41736	0.90096	No
130	24.20902	0.23338	No
132	43.78257	0.00161	No

133	26.88786	0.13845	No
135	8.71223	0.98601	No
136	2.97733	1.00000	No
137	11.26957	0.93893	No
139	25.00272	0.20133	No
140	28.20755	0.10458	No
141	18.68456	0.54241	No
142	16.66645	0.67451	No
143	22.10848	0.33465	No
144	21.47508	0.36966	No
145	8.40359	0.98884	No
146	35.80871	0.01620	No
147	13.34500	0.86210	No
148	22.57728	0.31002	No
149	20.25690	0.44197	No
150	10.60683	0.95579	No
151	26.93950	0.13697	No
152	55.59814	0.00003	Yes
153	26.95647	0.13649	No
154	14.52403	0.80296	No
155	45.13056	0.00106	No
156	6.64697	0.99769	No
157	56.29857	0.00003	Yes
158	6.24724	0.99852	No
159	19.02321	0.52032	No
160	25.95525	0.16729	No
161	37.91047	0.00908	No
162	18.66594	0.54363	No
163	43.58368	0.00171	No
165	19.82517	0.46891	No
166	17.96415	0.58977	No
167	26.07975	0.16319	No
169	22.68098	0.30473	No
170	24.81891	0.20845	No
171	20.27621	0.44077	No
172	26.82133	0.14037	No
173	20.97040	0.39888	No
174	15.19762	0.76499	No
175	4.73673	0.99982	No
176	15.99865	0.71671	No
177	16.08121	0.71157	No
178	6.60644	0.99779	No
180	4.73673	0.99982	No

181	14.37480	0.81100	No
182	8.64173	0.98670	No
183	11.32306	0.93741	No
184	11.20388	0.94076	No
185	24.36859	0.22666	No
186	4.73673	0.99982	No
187	57.63452	0.00002	Yes
188	12.50523	0.89759	No
189	1.64322	1.00000	No
190	22.11977	0.33405	No
191	21.18509	0.38631	No
192	1.64322	1.00000	No
193	14.01072	0.82995	No
194	25.39904	0.18659	No
195	19.97003	0.45981	No
196	19.78114	0.47169	No
197	29.02678	0.08723	No
198	19.93849	0.46178	No
199	8.92411	0.98377	No
201	15.71152	0.73435	No
202	33.59443	0.02900	No
203	16.56795	0.68082	No
204	24.79506	0.20938	No
205	1.64322	1.00000	No
207	4.73673	0.99982	No
208	18.12651	0.57907	No
209	22.33568	0.32258	No
210	24.30531	0.22931	No
211	15.32920	0.75727	No
212	14.66428	0.79528	No
213	55.43461	0.00004	Yes
214	6.52582	0.99797	No
215	25.16516	0.19519	No
216	21.13998	0.38893	No
217	65.59712	0.00000	Yes
218	1.64322	1.00000	No
220	24.20735	0.23345	No
221	3.91479	0.99996	No
222	6.62615	0.99774	No
223	15.65520	0.73777	No
225	51.48380	0.00014	Yes
226	16.62820	0.67697	No
227	34.54648	0.02266	No

228	4.73673	0.99982	No
229	24.72540	0.21214	No
230	17.39561	0.62716	No
231	14.98514	0.77726	No
232	11.97895	0.91680	No
233	16.05717	0.71307	No
234	16.51115	0.68445	No
235	32.32187	0.03999	No
236	12.50333	0.89766	No
237	9.62275	0.97451	No
238	12.06321	0.91388	No
239	24.11922	0.23722	No
240	8.83822	0.98471	No
241	13.67652	0.84651	No
243	4.58900	0.99986	No
244	18.26022	0.57027	No
245	21.56458	0.36460	No
246	12.56016	0.89545	No
248	15.24151	0.76243	No
249	33.39448	0.03052	No
250	17.37056	0.62880	No

*$p<0.001$

Appendix D: Tests of Normality

Kolmogorov-Smirnov and Shapiro-Wilk Tests

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Indicator	Statistic	df	Sig.	Statistic	df	Sig.
MT-1	0.331	228	0.000	0.744	228	0.000
MT-2	0.232	228	0.000	0.820	228	0.000
MT-3	0.256	228	0.000	0.786	228	0.000
PS-1	0.308	228	0.000	0.764	228	0.000
PS-2	0.331	228	0.000	0.742	228	0.000
PS-3	0.371	228	0.000	0.680	228	0.000
PS-4	0.355	228	0.000	0.710	228	0.000
PP-1	0.352	228	0.000	0.708	228	0.000
PP-2	0.335	228	0.000	0.726	228	0.000
PP-3	0.295	228	0.000	0.781	228	0.000
PU-1	0.352	228	0.000	0.718	228	0.000
PU-2	0.305	228	0.000	0.774	228	0.000
PU-3	0.378	228	0.000	0.687	228	0.000
LOC-1	0.211	228	0.000	0.837	228	0.000
LOC-2	0.217	228	0.000	0.848	228	0.000
LOC-3	0.218	228	0.000	0.843	228	0.000
LOC-4	0.229	228	0.000	0.823	228	0.000
LUX-1	0.203	228	0.000	0.867	228	0.000
LUX-2	0.201	228	0.000	0.868	228	0.000
LUX-3	0.210	228	0.000	0.860	228	0.000
SM-1	0.218	228	0.000	0.881	228	0.000
SM-2	0.219	228	0.000	0.874	228	0.000
SM-3	0.200	228	0.000	0.887	228	0.000

a. Lilliefors Significance Correction

Skewness and Kurtosis Tests

Indicator	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
MT-1	228	2	5	4.41	0.725	-1.021	0.161	0.403	0.321
MT-2	228	1	5	4.11	0.879	-0.835	0.161	0.624	0.321
MT-3	228	1	5	4.26	0.757	-0.971	0.161	1.232	0.321
PS-1	228	2	5	4.36	0.729	-0.892	0.161	0.162	0.321
PS-2	228	1	5	4.39	0.780	-1.201	0.161	1.226	0.321
PS-3	228	1	5	4.47	0.804	-1.682	0.161	2.947	0.321
PS-4	228	1	5	4.46	0.758	-1.409	0.161	1.957	0.321
PP-1	228	1	5	4.47	0.717	-1.423	0.161	2.412	0.321
PP-2	228	1	5	4.41	0.788	-1.407	0.161	2.265	0.321
PP-3	228	2	5	4.27	0.837	-0.912	0.161	0.007	0.321
PU-1	228	2	5	4.49	0.640	-0.984	0.161	0.361	0.321

PU-2	228	1	5	4.29	0.838	-1.007	0.161	0.481	0.321
PU-3	228	2	5	4.54	0.652	-1.299	0.161	1.306	0.321
LOC-1	228	1	5	3.99	0.900	-0.567	0.161	0.022	0.321
LOC-2	228	1	5	3.89	0.987	-0.407	0.161	-0.585	0.321
LOC-3	228	1	5	4.02	0.847	-0.480	0.161	-0.297	0.321
LOC-4	228	2	5	4.03	0.850	-0.224	0.161	-1.177	0.321
LUX-1	228	1	5	3.84	1.007	-0.461	0.161	-0.657	0.321
LUX-2	228	1	5	3.77	1.104	-0.480	0.161	-0.654	0.321
LUX-3	228	1	5	3.83	1.087	-0.568	0.161	-0.491	0.321
SM-1	228	1	5	3.70	0.910	-0.211	0.161	-0.588	0.321
SM-2	228	1	5	3.78	0.919	-0.401	0.161	-0.155	0.321
SM-3	228	1	5	3.64	0.950	-0.178	0.161	-0.605	0.321

Appendix E: Discriminant Validity

Cross Loadings

	Localization	Luxury Brands	M-Trust	Perceived Privacy	Perceived Security	Perceived Usability	Social Media
LOC-1	0.772	0.128	0.100	0.311	0.159	0.323	0.089
LOC-2	0.787	0.237	0.125	0.265	0.091	0.232	0.280
LOC-3	0.854	0.216	0.144	0.284	0.106	0.311	0.218
LOC-4	0.737	0.181	0.067	0.307	0.172	0.390	0.170
LUX-1	0.190	0.902	0.100	0.244	0.058	0.134	0.350
LUX-2	0.243	0.934	-0.020	0.239	0.053	0.141	0.422
LUX-3	0.226	0.913	-0.035	0.191	0.041	0.110	0.362
MT-1	0.064	0.024	0.785	0.172	0.434	0.181	0.026
MT-2	0.162	0.010	0.765	0.166	0.329	0.166	0.171
MT-3	0.102	0.018	0.828	0.244	0.478	0.141	0.099
PP-1	0.328	0.127	0.229	0.849	0.370	0.393	0.008
PP-2	0.230	0.185	0.197	0.780	0.274	0.339	0.082
PP-3	0.360	0.296	0.194	0.859	0.360	0.415	0.167
PS-1	0.208	0.101	0.250	0.246	0.613	0.218	0.045
PS-3	0.120	0.014	0.469	0.348	0.883	0.288	-0.045
PS-4	0.120	0.043	0.496	0.364	0.866	0.348	0.004
PU-1	0.355	0.022	0.190	0.284	0.241	0.777	0.012
PU-2	0.329	0.234	0.088	0.398	0.247	0.810	0.138
PU-3	0.313	0.085	0.208	0.424	0.376	0.829	-0.038
SM-1	0.241	0.369	0.116	0.095	-0.007	0.030	0.894
SM-2	0.206	0.361	0.100	0.095	-0.001	0.044	0.904
SM-3	0.183	0.385	0.112	0.096	-0.008	0.039	0.904

Appendix F: Multigroup Analyses

Nationality: Qatari vs. Non-Qatari

Bootstrapping Results

	Path Coefficients Original (Non-Qatari)	Path Coefficients Original (Qatari)	Path Coefficients Mean (Non-Qatari)	Path Coefficients Mean (Qatari)	STDEV (Non-Qatari)
Localization -> M-Trust	-0.026	0.046	-0.021	0.038	0.095
Localization -> Perceived Usability	0.453	0.448	0.459	0.458	0.082
Luxury Brands -> M-Trust	0.022	-0.161	0.016	-0.155	0.108
Luxury Brands -> Perceived Privacy	0.135	0.230	0.137	0.233	0.082
Perceived Privacy -> M-Trust	-0.018	0.044	-0.016	0.045	0.128
Perceived Privacy -> Perceived Security	0.395	0.263	0.393	0.270	0.118
Perceived Security -> M-Trust	0.531	0.564	0.531	0.569	0.109
Perceived Usability -> M-Trust	0.060	-0.078	0.062	-0.072	0.114
Perceived Usability -> Perceived Privacy	0.456	0.427	0.460	0.437	0.082
Perceived Usability -> Perceived Security	0.109	0.313	0.120	0.316	0.101
Social Media -> M-Trust	0.115	0.166	0.117	0.170	0.105
Social Media -> Perceived Usability	0.022	-0.142	0.028	-0.130	0.098

	STDEV (Qatari)	t-Values (Non-Qatari)	t-Values (Qatari)	p-Values (Non-Qatari)	p-Values (Qatari)
Localization -> M-Trust	0.110	0.277	0.418	0.781	0.676
Localization -> Perceived Usability	0.072	5.516	6.203	0.000	0.000
Luxury Brands -> M-Trust	0.087	0.204	1.853	0.838	0.064
Luxury Brands -> Perceived Privacy	0.081	1.643	2.829	0.100	0.005
Perceived Privacy -> M-Trust	0.113	0.142	0.392	0.887	0.695
Perceived Privacy -> Perceived Security	0.098	3.364	2.686	0.001	0.007
Perceived Security -> M-Trust	0.091	4.863	6.233	0.000	0.000
Perceived Usability -> M-Trust	0.107	0.525	0.729	0.600	0.466
Perceived Usability -> Perceived Privacy	0.072	5.561	5.966	0.000	0.000
Perceived Usability -> Perceived Security	0.097	1.072	3.233	0.284	0.001
Social Media -> M-Trust	0.085	1.102	1.961	0.271	0.050
Social Media -> Perceived Usability	0.098	0.222	1.442	0.824	0.149

Confidence Intervals (Bias Corrected)

	2.5% (Non-Qatari)	97.5% (Non-Qatari)	2.5% (Qatari)	97.5% (Qatari)
Localization -> M-Trust	-0.213	0.158	-0.167	0.264
Localization -> Perceived Usability	0.270	0.595	0.275	0.562
Luxury Brands -> M-Trust	-0.220	0.209	-0.332	0.008
Luxury Brands -> Perceived Privacy	-0.033	0.289	0.059	0.379
Perceived Privacy -> M-Trust	-0.278	0.225	-0.180	0.267
Perceived Privacy -> Perceived Security	0.149	0.607	0.062	0.443
Perceived Security -> M-Trust	0.302	0.725	0.354	0.721
Perceived Usability -> M-Trust	-0.182	0.270	-0.280	0.138
Perceived Usability -> Perceived Privacy	0.277	0.603	0.266	0.554
Perceived Usability -> Perceived Security	-0.100	0.299	0.098	0.483
Social Media -> M-Trust	-0.124	0.294	-0.021	0.314
Social Media -> Perceived Usability	-0.198	0.185	-0.315	0.057

Gender: Male vs. Female

Bootstrapping Results

	Path Coefficients Original (Female)	Path Coefficients Original (Male)	Path Coefficients Mean (Female)	Path Coefficients Mean (Male)	STDEV (Female)
Localization -> M-Trust	0.027	-0.053	0.020	-0.045	0.102
Localization -> Perceived Usability	0.425	0.409	0.430	0.423	0.080
Luxury Brands -> M-Trust	-0.037	-0.104	-0.026	-0.105	0.092
Luxury Brands -> Perceived Privacy	0.134	0.252	0.138	0.257	0.061
Perceived Privacy -> M-Trust	-0.013	0.089	-0.016	0.093	0.124
Perceived Privacy -> Perceived Security	0.319	0.285	0.335	0.291	0.119
Perceived Security -> M-Trust	0.523	0.534	0.523	0.530	0.100
Perceived Usability -> M-Trust	-0.004	0.055	0.004	0.055	0.117
Perceived Usability -> Perceived Privacy	0.611	0.270	0.618	0.282	0.050
Perceived Usability -> Perceived Security	0.275	0.188	0.274	0.190	0.120
Social Media -> M-Trust	0.190	0.181	0.184	0.178	0.113
Social Media -> Perceived Usability	0.059	-0.157	0.068	-0.146	0.097

	STDEV (Male)	t-Values (Female)	t-Values (Male)	p-Values (Female)	p-Values (Male)
Localization -> M-Trust	0.104	0.268	0.504	0.789	0.614
Localization -> Perceived Usability	0.076	5.279	5.370	0.000	0.000
Luxury Brands -> M-Trust	0.100	0.407	1.039	0.684	0.299
Luxury Brands -> Perceived Privacy	0.097	2.204	2.602	0.028	0.009
Perceived Privacy -> M-Trust	0.100	0.103	0.894	0.918	0.372
Perceived Privacy -> Perceived Security	0.114	2.670	2.494	0.008	0.013
Perceived Security -> M-Trust	0.094	5.215	5.669	0.000	0.000
Perceived Usability -> M-Trust	0.094	0.037	0.581	0.970	0.561
Perceived Usability -> Perceived Privacy	0.087	12.174	3.119	0.000	0.002
Perceived Usability -> Perceived Security	0.092	2.292	2.042	0.022	0.041
Social Media -> M-Trust	0.099	1.686	1.825	0.092	0.068
Social Media -> Perceived Usability	0.110	0.612	1.423	0.540	0.155

Confidence Intervals (Bias Corrected)

	2.5% (Female)	97.5% (Female)	2.5% (Male)	97.5% (Male)
Localization -> M-Trust	-0.159	0.240	-0.254	0.153
Localization -> Perceived Usability	0.260	0.572	0.225	0.530
Luxury Brands -> M-Trust	-0.237	0.123	-0.293	0.095
Luxury Brands -> Perceived Privacy	0.009	0.244	0.048	0.430
Perceived Privacy -> M-Trust	-0.243	0.248	-0.121	0.272
Perceived Privacy -> Perceived Security	0.080	0.539	0.036	0.485
Perceived Security -> M-Trust	0.321	0.704	0.344	0.708
Perceived Usability -> M-Trust	-0.234	0.228	-0.131	0.236
Perceived Usability -> Perceived Privacy	0.496	0.697	0.079	0.421
Perceived Usability -> Perceived Security	0.013	0.488	-0.020	0.350
Social Media -> M-Trust	-0.111	0.364	-0.057	0.350
Social Media -> Perceived Usability	-0.147	0.240	-0.319	0.118

Age Range: Millennials vs. Post-millennials

Bootstrapping Results

	Path Coefficients Original (Post-millennials)	Path Coefficients Original (Millennials)	Path Coefficients Mean (Post-millennials)	Path Coefficients Mean (Millennials)	STDEV (Post-millennials)
Localization -> M-Trust	0.086	-0.089	0.095	-0.085	0.164
Localization -> Perceived Usability	0.408	0.423	0.407	0.436	0.139
Luxury Brands -> M-Trust	-0.121	0.028	-0.120	-0.010	0.129
Luxury Brands -> Perceived Privacy	0.231	0.066	0.238	0.066	0.121
Perceived Privacy -> M-Trust	0.152	0.124	0.168	0.103	0.165
Perceived Privacy -> Perceived Security	0.069	0.474	0.092	0.484	0.161
Perceived Security -> M-Trust	0.508	0.492	0.502	0.492	0.132
Perceived Usability -> M-Trust	-0.012	-0.084	-0.018	-0.063	0.143
Perceived Usability -> Perceived Privacy	0.379	0.564	0.405	0.568	0.107
Perceived Usability -> Perceived Security	0.418	0.000	0.426	0.002	0.131
Social Media -> M-Trust	0.233	0.005	0.209	0.023	0.128
Social Media -> Perceived Usability	-0.233	-0.061	-0.215	-0.049	0.133

	STDEV (Millennials)	t-Values (Post-millennials)	t-Values (Millennials)	p-Values (Post-millennials)	p-Values (Millennials)
Localization -> M-Trust	0.119	0.522	0.750	0.602	0.453
Localization -> Perceived Usability	0.097	2.946	4.380	0.003	0.000
Luxury Brands -> M-Trust	0.188	0.940	0.148	0.347	0.883
Luxury Brands -> Perceived Privacy	0.101	1.905	0.658	0.057	0.511
Perceived Privacy -> M-Trust	0.151	0.924	0.819	0.356	0.413
Perceived Privacy -> Perceived Security	0.103	0.427	4.618	0.669	0.000
Perceived Security -> M-Trust	0.104	3.845	4.715	0.000	0.000
Perceived Usability -> M-Trust	0.132	0.081	0.632	0.935	0.527
Perceived Usability -> Perceived Privacy	0.098	3.548	5.759	0.000	0.000
Perceived Usability -> Perceived Security	0.131	3.177	0.000	0.001	1.000
Social Media -> M-Trust	0.126	1.827	0.042	0.068	0.967
Social Media -> Perceived Usability	0.124	1.750	0.491	0.080	0.624

Confidence Intervals (Bias Corrected)

	2.5% (Post-millennials)	97.5% (Post-millennials)	2.5% (Millennials)	97.5% (Millennials)
Localization -> M-Trust	-0.250	0.405	-0.318	0.148
Localization -> Perceived Usability	-0.085	0.602	0.206	0.591
Luxury Brands -> M-Trust	-0.366	0.150	-0.310	0.437
Luxury Brands -> Perceived Privacy	-0.041	0.446	-0.171	0.239
Perceived Privacy -> M-Trust	-0.182	0.457	-0.169	0.418
Perceived Privacy -> Perceived Security	-0.255	0.376	0.233	0.646
Perceived Security -> M-Trust	0.245	0.759	0.274	0.678
Perceived Usability -> M-Trust	-0.281	0.278	-0.333	0.186
Perceived Usability -> Perceived Privacy	0.092	0.545	0.321	0.726
Perceived Usability -> Perceived Security	0.112	0.637	-0.265	0.248
Social Media -> M-Trust	0.013	0.520	-0.264	0.218
Social Media -> Perceived Usability	-0.454	0.060	-0.336	0.139