THE ROLE OF WORD-OF-MOUTH AS A MODERATOR IN INFLUENCING THE ADOPTION OF ONLINE PHARMACY IN SAUDI ARABIA

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LIST OF ABBREVIATIONS

EHR	Electronic Health Records
ICT	Information and Communication Technology
IDT	Innovation Diffusion Theory
IS	Information System
IT	Information Technology ‘
KSA	Kingdom of Saudi Arabia
LMS	Learning Management System
MOH	Ministry of Health
MPCU	Model of Personal Computer Utilization
NFC	Near Field Communications
OEMH	Occupational Electronic Mental Health
SCT	Social Cognitive Theory
TAM	Technology Acceptance Model
TAM-MM	Technology Acceptance Model – Motivational Model
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UTAUT-2	Unified Theory of Acceptance and Usage of Technology – 2
WHO	World Health Organization

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PERANAN DARI MULUT-KE-MULUT SEBAGAI PENYEDERHANA YANG MEMPENGARUHI PENGGUNAAN FARMASI DALAM TALIAN DI ARAB SAUDI

ABSTRAK

Tahap penerimaan dan penggunanan farmasi dalam talian di Arab Saudi adalah rendah. Hanya segelintir warga Arab Saudi yang mengetahui akan kewujudan farmasi dalam talian. Malah hanya sedikit sahaja bilangan mereka yang mengakses dan membeli ubat menggunakan sistem farmasi dalam talian. Perniagaan farmasi dalam talian menghadapi cabaran besar dalam penyesuaian di Arab Saudi. Terdapat banyak percubaan menggunakan aplikasi web bagi operasi farmasi. Walaubagaimanapun, percubaan seperti ini masih rendah dan memerlukan pemodelan teoretikal dan peningkatan praktikal untuk meningkatkan kepercayaan, kebolehpercayaan, keberkesanan, dan faktor yang lain. Oleh itu, objektif utama kajian ini adalah untuk menyelidiki faktor-faktor yang mempengaruhi penggunaan farmasi dalam talian di Arab Saudi, dengan peranan penyederhanaan (moderator) 'dari mulut ke mulut'. Kajian ini dijalankan dengan mengadaptasi Teori Penerimaan dan Penggunaan Teknologi Disatukan–2 (“UTAUT-2”) bagi meneliti persepsi pelanggan terhadap penyesuaian farmasi dalam talian. Faktor-faktor yang penting seperti jangkauan prestasi, jangkauan usaha, dan pengaruh sosial, pemudah keadaan, tabiat, motivasi hedonik, dan nilai harga turut dipertimbangkan berdasarkan dapatan literatur untuk melihat pengaruhnya terhadap penggunaan farmasi dalam talian di kalangan orang Arab Saudi. Bagi menguji model yang dicadangkan sebanyak 425 data telah dikumpulkan daripada individu dengan menggunakan teknik persampelan rawak mudah. Data tersebut dianalisis menggunakan persisian “SPSS” dan Pemodelan Persamaan Struktur-

“Smart-PLS”. Hasil penemuan menunjukkan bahawa melihat jangkaan, jangkauan usaha, pengaruh sosial, pemudah keadaan, motivasi hedonik, kepercayaan teknologi dan kesedaran teknologi telah mempengaruhi niat tingkah laku dengan ketara. Sebaliknya, kebiasaan dan risiko yang dirasakan menunjukkan hasil yang tidak signifikan. Manakala kesan langsung niat tingkah laku terhadap penyesuaian farmasi dalam talian telah menunjukkan hubungan positif. Di samping itu, peranan penyederhanaan (moderator) dari mulut ke mulut juga didapati menguatkan hubungan positif antara niat tingkah laku dan penyesuaian farmasi dalam talian. Sebagai contoh, hubungan ini lebih kuat apabila cadangan positif dari mulut ke mulut berpotensi meningkatkan penggunaan farmasi dalam talian dan begitu juga sebaliknya. Perbincangan terperinci mengenai penemuan, sumbangan, dan cadangan penyelidikan masa depan dibincangkan dengan lebih terperinci pada akhir laporan.

THE ROLE OF WORD-OF-MOUTH AS A MODERATOR IN INFLUENCING THE ADOPTION OF ONLINE PHARMACY IN SAUDI ARABIA

ABSTRACT

There is a low level of adoption and acceptance of online pharmacies in Saudi Arabia; only very limited Saudi Citizens are aware of the existence of online pharmacies and even fewer number of Saudis accessed and bought medicines using online pharmacy systems. Therefore, the online pharmacy business is facing a great challenge in adoption in Saudi Arabia; despite many attempts on using web applications that mimic the actual pharmacy operations; such attempts still preliminary and need more theoretical modelling and practical enhancements to trust, reliability, efficacy, and other factors of success. Thus, the primary objective of the present study is to investigate the factors influencing the adoption of online pharmacy in Saudi Arabia: the moderating role of word-of-mouth. This study carries out under the Unified Theory of Acceptance and Usage of Technology–2 (UTAUT-2) to examine the perception of customers on adapting online pharmacy. The most important factors such as performance expectancy, effort expectancy, and social influence, facilitating condition, habit, and hedonic motivation were considered from existing literature to observe their influence on adopting online pharmacy among Saudis. To test the proposed model, 425 cases were gathered from individuals using Purposive sampling technique to be used to collect the data. The data were analyzed using SPSS and Structural Equation Modeling-Smart-PLS. Thus, the findings suggested that (the perceived expectancy, the effort expectancy, social influences, the facilitating condition, the hedonic motivation, trust in technology, as well as technological

awareness) significantly influence behavioural intention. On the other hand, habit and perceived risk showed insignificant results. Regarding, the direct effect of behavioural intention on the online pharmacy adoption indicated a positive relationship. Most importantly, the moderation role of recommendation words of mouth was found to strengthen the positive relationship between behavioural intention and the online pharmacy adoption such as that the relationship is stronger when recommendation words of mouth are high than low. A detailed discussion of the findings, contribution, conclusion, recommendations, and future research directives to be added at the end of the report.

CHAPTER 1

INTRODUCTION

1.1 Introduction

A comprehensive overview of the present study and background are provided in this chapter. Moreover, the examined variables of the study, including Saudi Arabi's Vision of 2030, Ministry Vision an E-health, Online Pharmacy, and Saudi Society and Acceptance of Technology are included and discussed in the chapter. The following section provides the problem statement, the study objectives, and questions. The following sections provide the importance of the study, the definitions of key variables, the structure of the thesis. This study ends with a summary of the chapter.

1.2 Study Background

The growing use of smartphones and the Internet, along with various social media platforms are excellent opportunities for businesses to prosper, made possible with internet marketing, including marketing of mobile phone (M-Marketing) and marketing of Facebook (F-Marketing) (Jain, & Yadav, 2017). Several retail businesses are providing services and goods via the online platform. The number of businesses and activities has been growing; however, the Kingdom of Saudi Arabia (KSA) current situation poses some limitations and challenges. The posed challenges have reflected the kingdom's readiness to embark on the "e-commerce and commercial transactions conducted electronically on the internet," – the kingdom's readiness for the e-commerce environment can be evaluated by several factors. These factors include the most critical factors, among others, the network's infrastructure, i.e., broadband, and narrow, and the cost of accessing the Internet (Alkhamisi, et al., 2013; Alotaibi, Saleh, Abdulbaqi, & Alosaimi, 2021).

In the same way, e-commerce has a piece of compelling evidence to have changed the entire economic sector that includes the healthcare industry – however, the change has witnessed several challenges because of several peculiarities such as the business of the online pharmacy. For instance, some studies argued that even though in several developing countries, the market of online pharmacy has flourished, there are still some challenges and setbacks (Yin, Li, & Qiao, 2016). Yin et al. (2016), further highlight these challenges to be two-folded. Firstly, it is related to very strict regulations set by the Government's operations of an online pharmacy, which serve as limitations to the high rates of the online pharmacies market in KSA. Second, most consumers find it uncomfortable when dealing with the online pharmacy, and this has resulted in a poorer acceptance rate (Sonawane, & Mahajan, 2020).

According to Al-Arifi et al. (2015), the industry of online pharmacy can be, generally categorized into 3 main categories: 1) the typical online pharmacy, dispensing medicine to users when they present a prescription from their physicians. This type is the most lawful online pharmacy (Fung, Woo & Asch, 2004), 2) the popular online consultation pharmacy. Users, in this type, provide the medical case and the medical history online for their physicians to write a report and prescribe medicine. Many users find this type the most preferable because the medical doctor and the pharmacist's services can be provided remotely (Castronova, 2006), and 3) the "rogue" pharmacy type or the online drugs shop, which permits consumers to buy various prescription drugs regardless of consultation or an authentic physician's prescription (Castronova, 2006). These pharmacies are illegal by law because many people abuse these drugs and, therefore, they prioritize online pharmacies.

Worldwide, Saudi Arabia is the third-rank country for smartphone penetration and sixty-four for internet penetration (Zaki, 2013). The kingdom has been home to an advanced infrastructure of information technology and communications (ICT), people in the country have been utilizing e-commerce platforms at a comparatively slow pace (Al Ghamdi et. al., 2011). Saudi Arabia has witnessed a low implementation of e-commerce services and systems in several sectors, including the online pharmacy sector (Abed, Dwivedi & Williams, 2015). Research has empirically established that only a few people were found to be aware of the online pharmacy platform with even fewer numbers of persons who use this platform to buy medicine (Abanmy, 2017). These challenges took place despite technological advancements in mobile telecommunications, which significantly changed the customers' style of purchasing behaviour (Khalilzadeh, Ozturk & Bilgihan, 2017). In contrast, there is comparing evidence that some countries within the developing nations have comparatively higher levels of acceptance of online pharmacy in comparison with KSA, whereas, in developed countries, sales of online pharmacy are approximately 30% (Yin et al., 2016). However, online pharmacy and internet marketing are more interested and adopted by young consumers in Saudi Arabia, exceptionally well-educated businessmen, and computer interacted men or women in business. Thus, the role of the information communication technology service companies has been documented as they help businesses in creating websites to enable e-commerce facilities.

Given the mentioned argument, understanding the consumer's acceptance toward the online pharmacy practice in KSA as one of the countries in the developing world is key for developing online services. The following elements/factors in the context of the present research are briefly explained:

The Unified Theory of Acceptance and Use of Technology (UTAUT-2) theory has been applied to examine several aspects of technology adoption in various fields like social media and smartphone applications (Workman, 2014), E-learning technology (Amadin et al., 2018, El-Masri & Tarhini, 2017), Near Field Communication (NFC) and mobile payment (Alalawan et al., 2018, Khalilzadeh et al., 2017; Morosan & Defranco, 2016; Slade, Dwivedi, Piercy, & Williams, 2015), biometrics technology (Miltgen, Popovič, & Oliveira, 2013), Internet banking (Martins, Oliveira, & Popovič, 2014), and mobile health application such as the health management (Duarte et al., 2019) as well as online pharmacy (Yin et al., 2016) among others. This study aims at investigating the variables that are related to Unified Theory of Acceptance, as well as the implementation of the model of technology, i.e., the UTAUT-2. These are important models because they represent key drivers of consumers' implementation of online medical services in KSA. Also, the perceived risk and trust, in addition to awareness are incorporated as exogenous variables to examine the experimental process and, in an attempt, to pay attention to the particular characteristics of the Saudi Society.

The concept of behavioural intention can never be overemphasis in the context of this study. Customer satisfaction ~~process felt for~~ on the products and services provided by the providers ~~of products and services~~ are the determinants of customer intentions towards products and service. Depending on how ~~much~~ customer ~~satisfaction is~~ felt, customers satisfaction ~~felt by~~ for products and given services can influence the behaviour of high or low customer intentions. Thus, understanding of consumer behaviour will facilitate management in developing products as well services. Customers' past experiences are also an important influence upon behavioural intention to repurchase (Ateke and James, 2018).

Word-of-Mouth as a Moderator

Word-Of-Mouth has been incorporated in the study as the examined moderator to measure customers' satisfaction by recommending and spreading the word-of-mouth to other customers to use the online pharmacy services. The word-of-mouth is moderator being tested to provoke how this variable can augment the relationship between the selected independent variables (UTAUT-2 and BEHAVIOUR Behaviourintentions variables) and the dependent variable (online pharmacy adoption).

The results contributed to enriching the existing empirical literature by integrating three variables into the UTAUT to investigate the influencing factors on the consumers, who embraced the online pharmacy in KSA.

The data of the study were collected from online transactions of pharmacies, which have online ordering systems through web application systems. The collected data included prescribed medicines, cosmetics, off-counter products, and other uncategorized products. Legal norms, as well as standards (in other words, covering the consumer's protection, the contract enforcement, the liability assignment, the rights of the intellectual property, the privacy protection, and specified processes), along with the technical standards, including (online payments, the delivery of products, security issues, authentication, connectivity protocols, and digital signatures), represent important policy considerations for e-commerce (Paradice et al., 2018).

KSA is one of the major retail markets in the region of the Arabian Peninsula because Saudi Arabia represents the biggest share of the GCC, i.e., the Gulf Corporation Council's retail industry. The kingdom continues to outperform in the

hypermarket sector (Sohail, 2013). The fast spread of the services of the Internet, together with fast-growing social media platforms and applications represent the latest trends in the kingdom (Ahmed & Bahaziq, 2013). Various metrics may influence E-customers' behaviour. Research has shown that not all website visitors are shoppers. Therefore, it is important to identify what makes visitors perform shopping. Two-thirds of the shoppers online stated that they do not prefer to shop from a website that is poorly designed; well-off online shoppers also have similar perceptions (Elliott & Speck, 2005). Such figures are expected to increase as Saudis have become attracted to 'social commerce', a newly growing term in the e-commerce model. Social commerce involves using social media platforms to surf products and services and do shopping through social media accounts; the use of social media has created better insight into the shopping styles and customer trends (Rahman, 2019).

Saudi Arabia has a combined culture, whereby Arab customs and Islamic traditions prevail (Gallagher & Searle, 1985). However, Saudi social-cultural values are characterized by the search for prestige and adherence to tribe recognition of hierarchy and conservatism (Bhuian, 1998; Gallagher & Searle, 1985; Hofstede, Hofstede & Minkov, 2010). Saudi is a highly religious society that values its customs and norms that have multiple influenced on every aspect of life and wellbeing. Accordingly, some studies have argued that there is a strong association with Saudi heritage, exerting a positive impact on the Saudis' lifestyle and functioning among the Saudi people (AL-Sherry, Rogerson, Fairweather & Prior, 2006).

While these cultural characteristics have a positive impact on Saudi people, they also have negative consequences (Abu Nadi, 2010). In the hope that the Saudi government can maximize its advantages, it has effectively introduced and applied e-government to the (KSA) citizens. However, a meaningful change in Saudi society is

important when there is acceptance of e-transaction among the citizens. For instance, prestige can be gained through personal connections, which is a commonly prevailed, unlawful practice. People aim to have their transactions done quickly without any delay. Such unfair ways of benefit from the government's services can be performed via tribal connections or family kinships, and sometimes through personal relationships. These represent one form of dishonesty and corruption among the majority of the Saudi people (Abu Nadi, 2010; Smith, Huang, Harb & Torres, 2011).

The e-transactions acceptance is projected to decrease the issues or challenges in the government's agencies. This is another key factor in the e-transaction's acceptance, which facilitates the kingdom's diversification of the economy. In other words, making the country independent of the oil resources to establish a new economy that is technical, and knowledge-based. This widespread acceptance of the e-transaction facilitates the kingdom's transition toward a new, information society. This can assist its transition and the future transformation into an economy that is knowledge-based – and advancement towards greater dependency on knowledge and high-skill people to access public and private sector reform through the incorporation of the latest technology (Ramady, 2010).

1.2.1 Vision 2030

Saudi Arabia seeks to develop its economy by supporting new technologies which can benefit individuals and communities without relying on oil. Al-Kibs and Noura (2015) emphasized the importance of the shifting vision in the country as described by His Highness, Crown Prince of the Kingdom of Saudi Arabia, Mohammed Bin Salman bin Abdulaziz, the underway "Vision 2030" as the most significant transformation process in the kingdom. Huge and concerted efforts are

being exerted to invest in the country's natural resources, the growing e-businesses, the IT resources, and the marketing environment. IT growth involves commerce, e-government, small-and-medium-sized business opportunities, and the increase of urban and some rural Internet connectivity. Electronic retail is vital to local markets growing by delivering employment opportunities to young people, between 23 and 35 years of age (2015) according to Abed, Dwivedi, and Williams (2015).

Vision 2030 has been projected at providing Saudi people with incentives of gender independence. Vision 2030 has three main goals to accomplish. First, it aims at increasing medium and small enterprises (i.e., SMEs), contributing to the country's GDP. Second, it aims at reducing unemployment, whereby the emphasis is on developing tools and services to improve work and personal skills for both young people and women. Unemployment in Saudi Arabia is projected to decline from 11.6% to 7%. The government is expecting this will help expand enterprises and development, according to Prince Salman bin Abdulaziz, Vice President for Saudi Arabia, 2015. The third aim is mainly to increase incentives for women to engage in work, which would grow from 22 % to 30 %.

The Kingdom's Vision 2030 with all its underlying development aspects involves technological advancements and, which it is expected to prevail, should reflect the use of online services and depends more on completing such services distantly. This orientation is expected to provide businesses with new customers trending that prefer online interaction over physical interaction. This thesis supports the idea of offering online pharmacy services to the customers giving that the technology acceptance is going to improve as the kingdom proceeds toward the achievement of vision 2030.

1.2.2 Ministry's Vision on Electronic Health

The Ministry of Health (MOH) in Saudi Arabia aims at accomplishing the ministry's e-health vision to advance availability, equability, as well as elevating standards, in addition to the healthcare quality in KSA. The Ministry, therefore, developed a specific business strategy, as well as a five-year roadmap to achieve the desired vision. In this regard, it has considered E-health as a key transformation enabler and agent. The aim involves multi-dimensional visions. Based on the vision's e-health statement, the aims are to create quality and safety in the e-system, i.e., in line with Patient-Centric Care, which depends on high-quality standards. This vision conveys the significance of e-health services. To this end, national, as well as international advisors developed key e-health strategies. They also formulated a roadmap for five years ahead. The goals of these strategies are as follows:

- Caring for the patients.
- Connect the providers at the entire care levels.
- Measuring healthcare delivery performance.
- Transforming healthcare delivery into world-class standards.

Figure 1.1: Saudi MOH Health Vision dimensions

Electronic health (E-health) has been introduced by the World Health Organization as an international term to reflect the usage of electronic mediums in creating health knowledge and fasten communication between practitioners using electronic communication tools. In the health sector, WHO identified e-health by stipulating that it is the unified IT use, along with the use of electronic communications.

E-Health systems are implemented by countries around the world, to modernize and enhance healthcare delivery. The drive behind E-health investments is therefore to offer clinical value and to support the work needs. Thus, in Saudi Arabia. The MOH provided several E-health initiatives and objectives to achieve the revolutionary dream of e-health: “Clean, secure health care system, focused on patient, standard-driven and E-health assistance”. The Saudi MOH focuses on realizing ambitious goals in achieving substantial progress within the e-security in two phases– each span of five years, which few countries have managed to achieve through the

strategies that were launched at the beginning of 2011; nonetheless, MOH began great steps towards E-transactions in this context.

This strategy and its map for the realization of this vision offer a strong plan for a fully developed group of projects. The program management, the starting of the change process in the (MOH) and its maintenance, and the mobilization of service suppliers and staff will face challenges to cope with the scope of the program and its schedule. The big probable obstacle is that people are changing and coping with the MOH process. And the importance of an integrated governance model, as well as clear definitions of liabilities and a change management program that is distinguished by resilience and aptitude to develop, cannot be underrated or underestimated. Therefore, E-health aims at bringing massive benefits for the Saudi MOH, as well as the Saudi people.

1.2.3 Online Pharmacy

According to Makinen et al. (2005), online pharmacies can be defined as companies, which sell medicine, including those with prescription-only via the Internet. These pharmacies deliver medicine by mail to consumers in the kingdom. The online medicine market is very popular nowadays, whereby many companies promote the business via digital technologies. Purchasing online medicine has been growing globally. In 2014, the market of e-Pharmacies, which is led by Europe and North America, has reached about US$ 29.3 billion. It is also projected to grow at 17.7% to hit US$ 128 billion by 2023 (FICCI, 2016). According to Al-Shibli and Al-Jaradi (2017), in 2016, the Saudi medicine market was worth about 27.57 billion dollars, and it is projected to grow to $55 billion by 2022. Branded generics account for about 80% of the industry in terms of sales (IBEF, 2017). Online pharmacies have

a market share of less than 5% and are growing at a slower pace. As a result, the growth of online businesses is very slow. Based on Orizio et al. (2011). In the late 1990s, the first online pharmacy opened in the United States of America, selling both non-prescription, as well as a prescription-only medication. In 2009, approximately 3000 websites in the United States were selling prescription drugs. In 2010, this number had risen to over 5000, and it is still increasingly increasing (NABP Internet report, 2011; MarkMonitor, 2011). According to Gallagher and Colaizzi (2000), on its website, the US Food and Drug Administration (FDA) advertised 'Buying Medicine using the Internet'. The authors suggested that policy legislation, as well as individual health awareness, should be enhanced. In Saudi Arabia, however, such information about online medicine purchase is not available. The Saudi Food and Drug Authority's (SFDA) website disseminates very limited information about the kingdom's laws on the selling of drugs or pharmaceuticals via the Internet (SFDA website). According to Orizio et al. (2011), in 2011, a systematic analysis of previous studies on online pharmacy practice and adoption revealed that it is growing rapidly with only partial control and regulations. It is, therefore, very important to understand how these services work so that effective legislation can be enacted to track and regulate the online purchase of medicine and, at the same time, reduce the abuse levels of drug prescriptions.

At that time, the WHO encountered several issues of counterfeit medicine, which posed a public health hazard (WHO, 2010). The Internet facilitated access to drugs. The prescriptions were abused by users. Medicine was bought online, which helped in hiding the users' identities. Therefore, applications of healthcare delivery needed a secure system. In the health sector, the term 'E-pharmacy system' is related to IT (Al-Shibli & Al-Jaradi, 2017). Such applications can allow customers (patients)

to perform various functions like establishing immediate contact securely and quickly with the pharmacy.

1.2.4 Saudi Society and Acceptance of Technology

In the past 50 years, Saudi Arabia has been transformed from a lonely wilderness to a modern KSA, which represents a rarity of technological expertise and traditional social conservatism. Without a conflict of interest, such a mixture cannot be accomplished. The use of the Web (Gallagher & Searle, 1985; Sait, Al-Tawil & Hussain, 2004) is a clear example of this disagreement. In 2011, records have showed that only 44 % of the population were using the Internet (Communications and Information Technology Commission 2011), whereas a study conducted with Internet World Stats (2008) c alculated growth in Internet use of 75.8 % during 2007-2008. The reason that ICT infrastructure continues to improve is one of the reasons for this relatively low use (Abanumy, Al-Badi & Mayhew 2005).

However, this issue does not focus on this study, since the acceptance and use of e-government may also be related to other socio-cultural issues that affect Internet acceptance (Weerakkody, 2008). Loch, Straub, and Kamel (2003) declared the essence of this issue to be that technology innovation is based on its innovator's cultural convictions and values, which, if adopted as they stand, are at odds with the host environment culture. Several researchers have said that innovators frequently ignore the history of the hosting community (Khalil & Elkordy, 2001; Straub et al., 2003). The low Internet acceptance rate in the Arab world was alleged to be due to cultural inconsistencies with that invention (Loch et al., 2003). Straub et al. (2003) revealed that Arabs have a strong affinity for their cultural beliefs and values to accept technologies introduced into the Arab world.

The rejection is not directed at technology, but at the society in it, a system that contrasts with Arab culture and values. Governments and organizations in the Arab world are reluctant to accept technology; as an Arab country, the KSA has a wide variety of features, such as language, culture, and religion, with other Arab states (Al-Yahya, 2009). Hill, Loch, Straub, and El-Sheshai (1998) stated that millions of dollars are spent on technology transfer by Arab countries and organisations. Weerakkody (2008) noted that the socio-cultural attributes of adherents affect Internet acceptance in the KSA. The use and adoption of e-services like e-government and e-commerce platforms are influenced by these factors.

The implementation of e-commerce and e-banking programs in the Kingdom of Saudi Arabia has previously been fraught with difficulties according to (Sait, et al., 2004; Al-Somali, Gholami & Clegg, 2009). Based on a study by Sait et al. (2004), in which they investigated several influencing factors on the adoption of e-commerce and acceptance in Saudi Arabia, suggested that there are several factors, including Internet insecurity, issues of privacy, lacking education on using the computer and the Internet, in addition to the absence of the Internet services' awareness and exposure. These factors affected not only the important e-commerce adoption but also the key pharmaceutical acceptance. Research has shown that the levels of adoption of Internet and Web infrastructure in KSA are still ineffective based on the above-mentioned studies. However, recent years witnessed extensive use of e-banking technologies as more Saudis have adopted the emerging technology along with new generations assisting older generations in learning and using the online technology (Al-Dosari et al., 2017)

1.3 Problem Statement

Despite the fact that Saudi Arabia is the largest emerging market in the region as well as the largest in the Arab world (Adel, 2020), existing literature and according to the results of previous empirical studies, it was proven analytically that the level of adoption of the online pharmacy in Saudi Arabia is unsatisfactory as not many consumers are fully aware of this concept and, therefore, they do not practice purchasing medicine from online pharmacies.

The present international arena races towards a digital prima lux, coupling with the rise of the digital economy and the possibility of a digital divide risk. Thus, the Kingdom of Saudi Arabia recognizes the importance of building foundations on the basis of development and the efforts were undertaken by the government of the Kingdom of Saudi Arabia to harness the potential power of electronic commerce, in order to increase the chances of the Kingdom to be among the global forefront of developed economies and societies (UNCTAD, 2019). Consequently, the Kingdom's own ambitious Vision 2030 can be fulfil and be part of 2030 Sustainable development Goals Agenda.

Electronic commerce is regarded as an indispensable tool that tackle global challenges relating to economy and society, which will be aggravated if not addressed. Therefore, providing support for the online pharmacy and practices of online marketing that are interested and adopted by increasing number of consumers in Saudi Arabia is highly imperative. To achieve this, ecosystem within which e-commerce in the kingdom exists, namely the E-Commerce Council, the E-Commerce Strategy, the National Digital Transformation Strategy and Kingdom's Vision 2030 were constituted. It aims to organize and develop the sector and keep abreast of

developments, methods, and modern systems for buying and selling via electronic channels (UNCTAD, 2019). These encourages home business owners and small and medium-sized companies to promote their products and use modern methods and technologies in marketing them.

Notwithstanding the rapid advancements in mobile telecommunication technologies in the Kingdom, these challenges have significantly changed customers' shopping and purchasing behaviour (Amar, 2015).

A drug or herb used to maintain health and manage health issue," have used online pharmacy systems. Many researchers showed that an estimate of 2.7% of the Saudi consumers' practices purchasing medicine via e-pharmacies in the kingdom, with an estimation of approximately 52.7%, who are willing to do so (Abanmy, 2017; Alshahrani, Stewart, & MacLure, 2019). This percentage (2.7%) of users is grossly inadequate. Due to the fact that growth in technology has brought many new innovations approaches which changes patterns in customers' needs and organizations business. Thus, innovative approaches and patterns of technology have started to invade and replace the traditional approaches of business. Traditional organizations are accepting modern technology to advance their businesses and satisfy customer's needs. However, the failure of traditional organizations and associations to recognize the effect of modern technology on business could lead to extinction of such industries. It is apparent today that an appreciable number of youth buyers are falling back on web-based shopping (Krbová et al., 2015). Therefore, for pharmaceutical companies to survive and grow their business, they need to accept and use the modern technology.

In developing nations, especially in the East Asia region, there is a relatively higher level of online pharmacy acceptance due to consumer demand and need to be compared to Saudi Arabia (Mahmoud, Alswaida, Alshammari, Khan, Alrasheedy, Hassali, & Aljadhey, 2014; Al-Shibli & Al-Jaradi, 2017). In contrast, online pharmacy sales in the developed nation have recorded about 30% of the pharmacy market shares in volume and value (Yin et al., 2016; Algahtani, 2020; Tawhari, Tawhari, Noshily, Mathkur, & Abutaleb, 2021).

Another facet of online pharmacy is the treatment of privacy issues, which is characterized as a desirable condition regarding the possession of information about oneself by others. However, security concerns are additional to privacy concerns, and other ethical issues are involved with electronic commerce (Al-Arifi et al., 2015; Dhagarra, Goswami, & Kumar, 2020). Apart from security and privacy issues, many online pharmacies are unregistered, so purchasing medicines from the unregistered vendor is potentially unsafe and questionable (Al-Kibsi, Woetzel, Isherwood, Khan & Mischke, Noura, 2015; Vida, Merczel, Jáhn, & Fittler, 2020). This is risky because medication should only be taken under the supervision of a healthcare professional and registered healthcare educator (Al Hosni, Ali, & Ashrafi, 2010; Torres, Chibi, Middleton, Solomon, & Mashamba-Thompson, 2019). The online pharmacy nature is quite peculiar compared with other e-commerce transactions (Ahmed & Bahaziq, 2013; Seghezzi, Mangiaracina, Tumino, & Perego, 2020) because it is related to human safety issues; however, trust and perceived risk are fundamental influencing factors on the consumer's implementation and online medicine access (Sohail, 2013). Consumers have firm intentions to buy medicine online with higher safety and trust levels, and lower levels of risk involved (Abu Nadi, 2010; Hasan, Kairuz, & Thiruchelvam, 2020). Researchers like Mcleod and Pippin (2008) suggested that the

perceived risk is a mediating determinant in the association between behavioural intention and trust. Further examinations found that trust could be a focal factor in deteriorating the adoption processor and could be an encouraging factor. However, the trust value is compelling to compete in terms of the challenges and problems that could have emerged during the purchasing process. For instance, how could a customer be sure of getting the same medicine that is not expired and how can they ensure they have received the right instructions when taking medicine (Yin et al., 2016). This is a factor that needs to be considered. Therefore, our study proposes the use of both perceived risk and trust to examine the UTAUT-2 online pharmacy concept in Saudi Arabia. The theory (UTAUT-2) can be empirically validated using a questionnaire-based survey instrument to measure consumer responses on online pharmacy users in Saudi Arabia.

This study proposed use of the (UTAUT-2) theory is to increase the awareness level of unsafe medicine in Saudi Arabia, the trust and risk level associated with the adoption of internet pharmacy in Saudi Arabia (Al-Shibli & Al-Jaradi, 2017). The study also incorporated word-of-mouth as a moderator to anticipate the role of recommendations on the relation of behavioural intention and adoption of online pharmacy from other trustees in the implementation of online or internet pharmaceutical services in Saudi Arabia (Ramady, 2010). More particularly, the problem is associated with e-commerce practice in the kingdom, which occurs on a very limited scale due to poor infrastructure and capacities in the communication system, thereby affecting the users of e-pharmacies. KSA has a telecommunication network system, which is satisfactory, but they are still insufficient and unsatisfactory to commercial usage (Al-Arifi et al., 2015). The speed of data transmission is still below average and needs to be upgraded to be able to function effectively to meet

consumer satisfaction (Castronova, 2006). An additional challenge, which encounters the development of online pharmacy business resides in the internet's easy-to-access nature, which facilitates access to drugs and supports abuses of prescription by customers (patients) (Sait, Al-Tawil & Hussain, 2004). Online pharmacy medicine, which hides people's identities, is counterfeit (Khalil & Elkordy, 2001). Therefore, secured, robust systems and applications are essential (Al-Yahya, 2009). E-pharmacy system is associated with ICT tools employed in the country's health sector (Al-Shibli & Al-Jaradi, 2017). The use of these applications enables patients to carry out functions like creating instant contact with the pharmacy.

In Riyadh, Saudi Arabia, another study on online pharmacy applications provided empirical results, which showed a lack of consumers' awareness and knowledge regarding online pharmacy. The results also showed that online pharmacy has not been a trend among Saudi people (Al-arifi, Al-dhawailie, & Alsultan, 2015). Researchers highlighted that technological advancements are underway, and they are growing to serve people worldwide (Al Hosni, Ali & Ashrafi, 2010). Al-Arifi et al. (2015) emphasized that online pharmacy is troubled and facing challenged due to Saudis perception based on "rogue" e-pharmacy (named e-drug shop), enabling customers to purchase medicine regardless of an effective prescription from a physician. These are illegal pharmacies by law and mostly accessed by drug abusers whose intentions are shady (Castronova, 2006). Due to this online "rogue" pharmacy, the trust of customers in online pharmacies decline which is preventing the adoption of genuine pharmaceutical companies in Saudi Arabia (Al-Shibli & Al-Jaradi, 2017).

Despite the fact that KSA lag in the e-commerce market share, reaching penetration levels of 2.7% and 5.9% respectively in 2020 – far behind mature e-commerce markets and the worldwide average of 18% (Martínez, Biggs, Brindley and

Cernikova, 2021). The region, however, has the fundamentals for e-commerce take-off and KSA is especially well-positioned to become the regional e-commerce powerhouse. That is, if certain factors are in place to support its success, specifically in the KSA context. Online pharmacy adoption is of course important, therefore, the factors that have made online retail a resounding success globally and can laid the groundwork for Saudi retailers to further expand online in the future.

Researches were conducted but not extensively conducted on e-pharmacy in Saudi Arabia, according to the available literature. For instance Ramady (2010), evaluate relationship of behavioural intention and adoption of online pharmacy from other trustees in the implementation of online pharmaceutical services in Saudi Arabia, lfahad, Albelali, Khurshid, Al-Arifi, Al-Dhawailie and Alsultam (2015) investigates, perception and knowledge to online pharmacy services among consumers in Riyadh and Syed, Shereen, Morehan, Rasha and Sara (2016), assessed awareness and acceptability of online pharmacy services among internet users of Riyadh, Saudi Arabia. Similarly, Abanmy (2017) studied the extent of use of online pharmacies, in Saudi Arabia. Furthermore, Al-Shibli and Al-Jaradi (2017), conducted their research on the trust and risk level associated with the adoption of internet pharmacy in Saudi Arabia. Finally, Monira, Wesam, Noha, Nouf, Aliyah and Tariq (2021), Evaluate the frequency, consumers' motivation and perception of online medicinal, herbal, and health products purchase safety in Saudi Arabia.

However, there are paucity of data in literature on the factors influencing the adoption of online pharmacy in Saudi Arabia through the moderating role of word-of-mouth. Thus, to bridge the limitation experienced in literature, this research was focused to examine the influencing factors, which exert an impact on adopting e-pharmacy.

1.4 Research Questions

By considering the above aspects of the problem of the study, the aim is to identify the influencing factors that are responsible for adopting the e-pharmacy practice with the moderating role of spreading word-of-mouth among consumers in KSA. The research questions of this study are addressed depending on the study objectives. The relationship between the research questions, the research objectives, and the postulated hypotheses are illustrated in Table 1.1.

RQ. 1 To what extent do UTAUT-2 variables, including (effort and performance expectancy, social effects, hedonic motivation, facilitating conditions, the habit, the perceived risk, technology trust, and technology awareness), which affect the consumer's behavioural intention to adopt e-pharmacy in KSA?

RQ.2 To what extent is the consumer's behavioural intention influencing online pharmacy adoption in KSA?

RQ.3 How the moderating impact of spreading word-of-mouth influences the association between the consumer's behavioural intention with e-pharmacy adoption in KSA?

1.5 Research Objectives

The study aims at investigating the influencing factors that affect the consumer's behavioural intention like (effort and performance expectancy, social effects, hedonic motivation, facilitating conditions, the habit, the perceived risk, technology trust, and technology awareness), along with the impact of behavioural intention on e-pharmacy adoption in KSA. The present study focuses on exploring word-of-mouth as it has a moderating role in the given relationship between

behavioural intention and online pharmacy adoption in KSA. These are the objectives of the current study as follows:

RO. 1 To investigate the effect of UTAUT-2 variables, including effort and performance expectancy, social effects, hedonic motivation, facilitating conditions, the habit, the perceived risk, technology trust, and technology awareness), which affect the consumer's behavioural intention to adopt e-pharmacy in KSA.

RO. 2 To investigate the effect of behavioural intention on online pharmacy adoption in KSA.

RO. 3 To investigate the moderating impact of spreading word-of-mouth influences the association between the consumer's behavioural intention with e-pharmacy adoption in KSA.

1.6 Research Scope

Technology, no matter how sophisticated and superior it can be, is said to be ineffective if not used. Psychological research was conducted extensively on the formation process of behavioural intention leading to human behaviour (Ajzen, 1985). Technology Acceptance Model (TAM) explained the use of technology in business settings (Davis, 1986). However, the present literature reviews suggest that the TAM (Davis, 1986, 1993) did not adequately assess the acceptance and adoption of health care areas using ICT (eHealth) (Holden and Karsh, 2010). This could be attributed to the fact that technological acceptance models have been rarely tested in the health care domains.

Patient (customer) which has also been emphasized as target by researchers is ignored by technology acceptance research in health care settings (Holden and Karsh, 2010; Beekens, 2011). This is uncalled for, since the factors as perceived to affect the technology acceptance of the patient may well be differently perceived from professionals (Punakivi, 2019). This research therefore focuses on the role of word-of-mouth as a moderator in influencing the adoption of online pharmacy in Saudi Arabia, leading to the research questions (refer to research questions in Chapter 1).

Furthermore, there are many similarities between online Pharmacy and e-business, it could be assumed that the need for trust and the concern for privacy are at least similar and highly significant since information exchanged is highly personal, and health is likely to matter more to people than commercial activities. According to Corbitt et al. (2003) efforts have been made to examine the privacy and security, trust and site attributes in e-commerce participation and adoption. However, online eHealth users are worried about the privacy of their personal data (personal information, health records and credit cards). These bring much more concerns for people to engage in eHealth transactions due to privacy issues. Sensitivity of such information could related to the undesirable usage by third parties (Fung & Paynter, 2006).

Online pharmacy is not yet popular in Saudi Arabia and limited research was found on the adoption of e-pharmacy from the user's that accounts for behavioural intention, word-of-mouth as it has a moderating role in the given relationship between behavioural intention and online pharmacy adoption in KSA and technology acceptance factors together.

The research aims and objectives (Chapter 1) followed by Figure 2.3 that outlines the overall research process that was adopted to reach the aim and objectives of the thesis as details were given in Research Methodology section (Chapter 3).

The main focus of this research is on the role of word-of-mouth as a moderator in influencing the adoption of online pharmacy in Saudi Arabia. The research will more likely exemplify the diminutions of WOM in its relation with UTUAT2 model. This research also focuses on the impact of WOM as moderator on behavioural intention to adopt e-pharmacy in KSA.

The scope of this research evolves around the factors affecting technology acceptance of e-pharmacy. These factors include both technology acceptance factors (performance expectancy, effort expectancy, social influence, facilitating condition, habit, and hedonic motivation) adopted from the UTAUT-2 with little modification and how they affects the acceptance and uptake of e-pharmacy activities. Relating these issues through using appropriate research methods and data analysis leads to an understanding of the impact of WOM as moderator on the acceptance of ePharmacy activities particularly in Saudi Arabia, as the vehicle of this research study.

Furthermore, this study is based on the individual as a unit of analysis because the problem statement addresses issues related to the moderating effect of WOM on customer's behavioural intentions to adopt pharmacy in Saudi Arabia, on whom the data were collected using random sampling technique