

# Current State of Internet Growth and Usage in Saudi Arabia and Its Ability to Support E-Commerce Development

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**Abstract**—It is widely recognized that the Internet has been rapidly growing and massively used in recent years. Previous studies have revealed that this is true for Internet users across the world. Likewise it is reported, lack of ICT infrastructures and is one of the main reason behind lack of spread of E-Commerce. The study attempted to understand the state of Internet growth and activities usage and its ability to support E-Commerce development. Little attention has been paid to testing particular questions in this study which proper investigation can help in understanding the prospects of the development and adoption of E-Commerce. The current study will attempt to confirm on whether similar growth and usage of the Internet is also happening in Saudi Arabia and whether this will help in establishing a platform of E-Commerce development. Quantitative data was gathered from 606 Saudis living in various parts of Saudi Arabia. Four questions related to the use of the Internet in Saudi Arabia are tested. The outcome shows that the findings are similar to those of other countries. In addition, individuals' readiness to use the Internet as their main shopping medium is approved by more than half of the sample used.

**Index Terms**—internet usage, E-commerce, Saudi Arabia, quantitative research

## I. INTRODUCTION

The Internet is one of the most significant innovations that influenced lifestyles. Business, education, healthcare, and environment have all gained from the development of the Internet when they changed to online usage and transactions.

The fast progress of the Internet has offered a novel host of chances in addition to threats [1]. To take advantage of the benefits of using the Internet, it is important that individuals, governments and companies understand the threats and benefits of going online. Trust in these new technologies will be paramount to their acceptance, adoption and success. In addition to trust, developing countries face more technical challenges such as the cost of telephone tariff and Internet, technical support and hardware [2]. The Arab work is facing similar challenges that slow the development of the

Internet and related applications [3]. It has been noted that the increasing access to Internet demonstrates the country's readiness for E-Commerce, and indeed this will require the support of the governments and businesses [4]. It was tested that the development of Internet environments influences Saudi customers to engage in E-Commerce and buy online [5]. Therefore, the purpose of this study is to examine the current state of Internet relative growth and usage in Saudi Arabia as the foundation of a research to develop a framework for the adoption and development of E-Commerce; The Internet being the backbone for the implementation of B2C E-Commerce.

Although, the results reported in this paper are based on a questionnaire survey of 606 Saudi citizens living across Saudi Arabia, the main issues that were tested are the following four questions:

- 'Where do you access the Internet?'
- 'Which medium do you use to access the Internet?'
- 'How often do you access the Internet?'
- 'When you access the Internet, how many hours a week do you use it for?'
- 'Are you ready to use the Internet as your main shopping medium?'

The remaining paper is organized as follows. In section 2 we provide a background review for this study in the form of a literature review, in section 3 the research methodology is described. The finding and analysis of the study are presented in section 4. Finally the study conclusions are given in section 5.

## II. LITERATURE REVIEW

### A. Background

Prior to the late 90s, access to the Internet in Saudi Arabia was limited [6]. Furthermore, according to TIAC [7], the technical difficulties associated with the use of Arabic on the Internet (and on computers more generally), tended to restrict Internet use to only those who could work in English. Using Communication and Internet Technologies (ICT), the total number of Internet users had increased to 6.4 million, representing about 26% of Saudi citizens by the end of 2008, compared with only 200,000 in 2000 [8]. However, Saudi Arabia has the

highest percentage of mobile phone users in the world, with 95% of individuals having a mobile phone. As a result, mobile Internet penetration has grown to 54% with 70% mobile Internet usage rates [9]. In 2014, the total IT expenses are predicted to reach US\$ 5.7 billion; with each person's expenses reaching US\$ 200. These figures represent a 13% rise in two years, and account for over 50% of overall ICT investments throughout the Gulf Cooperation Council (GCC) countries [9].

However, currently Saudi Arabia, like the rest of the Middle East, and indeed the Arab World, has very little global market share of the income generated by E-Commerce. In this respect, it is the USA and Europe which are the biggest beneficiaries, sharing around 79% of the income generated worldwide, while the smallest share representing about 3% is occupied by Africa and the Middle East [10]. Worries about security, cultural and political focuses are the key issues that slow down the implementation of Internet transactions in the Arab World [3, 11].

### B. Internet and E-Commerce

The Internet is one of the significant actors in the implementation of many new innovations such as E-Business, E-Commerce, E-Marketing and M-Commerce. It is the main way of offering online services. Businesses that seek to use the Internet in the marketplace in the developing world might be facing vital difficulties, more than those in the developed countries. One of the significant effects of the Internet on business is E-Commerce [12]. E-Commerce is seen as a revolution in the business world as it added new features to the whole process of trade guarantying smart, more rapid services in related segments of information [13]. E-Commerce offers services that enable customers to purchase, sell, and pay via the World Wide Web (WWW). Customers are allowed to buy from markets around the world without seeing the goods or trying the services. To implement E-Commerce, it is important that companies adopt the new technologies like the Internet. Lack of telecommunication infrastructures is often cited as the main reason behind the limitation of the Internet in developing countries [2]. One of the key threats that face the spread of E-Commerce is the lack of Internet access [2]. This is true in the Arab world [3]. E-Commerce requires an appropriate and a full development plan to fulfil its potential and the availability of an adequate ICT infrastructure is essential for the implementation of such a plan [14]. A large number of Arab countries need to fully embrace and develop the Internet to get its full benefits and advantages [3]. The situation is similar in many developing countries where ICT infrastructures are not well developed, hence slowing the development of E-Commerce [15].

B2C E-Commerce deals with customers buying goods from businesses. It has been known that B2C in developed countries has a high level of growth [15]. Different changes of shopper's behaviour by ICT infrastructure growth, it was found that the main influences of the development of E-Commerce are the rising value of 'Internet users, online spending and

adoption of new technologies' [14]. These results can be similar to implement E-Commerce in developing countries like Saudi Arabia.

There is currently a wide gap in the use and development of the Internet between the Arab World and the developed world and the gap is widening. Large numbers of businesses are quite hesitant in adopting online shopping because of the high cost of Internet use. It is hard for countries in the Arab world to achieve the same levels of Internet development in general and E-Commerce in particular as that of the developed countries. E-Commerce can be implemented in this rapid and wider digital economic growth and investigates the E-Commerce implementation in different countries, especially in developing countries to increase the awareness of B2C EC in Saudi Arabia. In Saudi Arabia the E-Commerce infrastructure is not forthcoming because of the monopoly of Internet service providers [15]. However, people in Saudi Arabia can drive forward the use of E-Commerce but the correct infrastructure is required [15]. In respect of the large proportion of young people in Saudi Arabia's population, it can be seen that they use mobile and Internet communication more as social media tools [9]. Hence, there is already a record of implementation and use of Business-to-Customer (B2C) E-Commerce within Saudi Arabia, it is being shown that about 39% of adult Internet users purchase goods and makes payments for services online via E-Commerce facilities [16]. Table I shows the Internet growth and population in Saudi Arabia [17].

TABLE I. INTERNET GROWTH AND POPULATION STATISTICS' IN SAUDI ARABIA

N	Internet in Saudi Arabia				
	Year	Users	Population	%	Usage Source
1	2000	200,000	21,624,422	0.9 %	ITU
2	2003	1,500,000	21,771,609	6.9 %	ITU
3	2005	2,540,000	23,595,634	10.8 %	C+I+A
4	2007	4,700,000	24,069,943	19.5 %	ITU
6	2009	7,761,800	28,686,633	27.1 %	ITU
7	2010	9,800,000	25,731,776	38.1 %	ITU
8	2012	13,000,000	26,534,504	49.0%	IWS

### III. RESEARCH METHODOLOGY

This study conducted a survey method to examine Saudis attitudes towards the Internet usage activities in Saudi Arabia. This method is one of the methods that give primary data. It is information that is collected directly by the researcher through working in the field. What is important about primary data is that it can throw new light on a topic and add to existing published knowledge, or even help to create a new stream of literature. This method enabled to achieve an experiential investigation of phenomenon in its real life environment

of a big young population where they have the ability to use the Internet. In this section of the research, a pilot study was conducted by questionnaires and it was validated. The questionnaire was designed in English and then translated into the Arabic Language. The data was collected over a period of 12 weeks in Saudi Arabia, A drop and collect technique was used. Descriptive analysis of frequency and percentages were performed via the SPSS software. The results reported in this paper are part of a larger study which is trying to improve the understanding of the advantages of the Internet in Saudi Arabia for the development of a framework for the development of E-Commerce.

#### IV. FINDINGS AND ANALYSIS

##### A. Sample Demographic Information

Saudi citizens' gender information is given in Table II. Out of the 606 respondents, 213 are males; representing (35.1%) of the sample and 393 females (64.9%).

TABLE II. GENDER DISTRIBUTION

N	Gender		
	Items	Frequency	Percent
1	Males	213	35.1
2	Females	393	64.9
3	Total	606	100.0

Table III shows the age distribution of the sample. The age group from 25-34 years old was the largest with 244 respondents (40.3%). The second largest group is the 18-24 group (29.70%) and the third is the 35-44 group (24.42%), the age group greater than 55 years old was the smallest, containing only two respondents (3%).

TABLE III. AGE DISTRIBUTION

N	Age	
	Items	Percent
1	18-24	29.70
2	25.34	40.3
3	35-44	24.42
4	45-54	5.28
5	>55	.33
6	Total	100.0

Table IV summarizes the level of instruction of the participants. The nearly half of the respondents are educated, it can be observed that people holding a Bachelor degree were the highest with a frequency of 301 (49.7%). Second level is under diploma (22.11%), third level is diploma (16.01%), the higher level of education is (10.23%) and the smallest is other (1.98%).

TABLE IV. LEVEL OF INSTRUCTION OF PARTICIPANTS

N	Instruction	
	Items	Percent
1	Under Diploma	22.11
2	Diploma	16.01
3	Bachelor	49.67
4	Master and PhD	10.23
6	Other	1.98
7	Total	100

Table V summarizes the occupation distribution of the participants. The largest group is employed (60.23%). The second is students (26.57%), and the other rest around between 4 and 5 %.

TABLE V. OCCUPATION

N	Occupation	
	Items	Percent
1	Students	26.57
2	Employee	60.23
3	Retired	2.81
4	Housewife and Husband	4.29
6	Other	4.95
7	Total	100

Table VI shows the respondents came from all over the five regions in Saudi Arabia, but representation from the middle region was highest, reaching 46.4%. This was followed by the north with 19.64% of the research population, then the south being represented by 13.2%, the west with 12.21%, and finally the east with only 8.91%.

TABLE VI. REGIONS DISTRIBUTION

N	Region	
	Items	Percent
1	Middle	46.04
2	East	8.91
3	West	12.21
4	North	19.64
5	South	13.20
6	Total	100.0

Table VII shows the responses to the question "When did you start using the Internet?" The results show that approximately one quarter (24.9%) of the sample began to use the Internet between 1998 and 2001. However, the highest group (31.2%) began to use the Internet immediately after that period, between 2002 and 2005, and this was followed by another group representing 29%

of the sample that began Internet use between 2006 and 2009. A further 14.9% of the sample did not start using the Internet until 2010. These figures indicate that the Internet has been established in Saudi Arabia since 1998 and that its popularity grew relatively quickly.

TABLE VII. WHEN DID YOU START USING THE INTERNET?

N	Start date of using the Internet		
	Items	Frequency	Percent
1	1998-2001	151	24.9
2	2002-2005	189	31.2
3	2006-2009	176	29.0
4	2010-Now	90	14.9
5	Total	606	100.0

Regarding the pattern of Internet usage, Table VIII shows that 61.9% of participants used the Internet at home, and 23.6% accessed it from home and work. Only 3.5% of respondents used the services of an Internet café. These percentages may well reveal that the population prefers to conduct personal online research through the use of home-based Wi-Fi, which offer them greater privacy.

TABLE VIII. WHERE DO YOU ACCESS THE INTERNET?

N	Access the Internet		
	Items	Frequency	Percent
1	Home	375	61.9
2	Work	21	3.5
3	Internet café	8	1.3
4	Other	17	2.8
5	Home and work	143	23.6
6	Home and Internet café	4	.7
7	Home, work and Internet café	30	5.0
8	Home, work, Internet café and other	8	1.3
9	Total	606	100.0

TABLE IX. WHICH MEDIUM DO YOU USE TO ACCESS THE INTERNET?

N	Medium use to access the Internet		
	Items	Frequency	Percent
1	PC	150	24.8
2	Tablet	28	4.6
3	Smart phone	93	15.3
4	All	181	29.9
5	PC and smart phone	118	19.5
6	Tablet and smart phone	32	5.3
7	PC and Tablet	4	.7

N	Medium use to access the Internet		
	Items	Frequency	Percent
8	Total	606	100.0

The responses to Question 3 regarding the medium used to access the Internet, the results are summarised in Table IX. 29.9% reported using all media (PC, tablet, and smart phone), and 24.8% indicated using only a PC, thus implying that the improvement of ICT in Saudi Arabia is enabling the younger population to access the Internet in different ways.

Table X shows that the majority of respondents (68%) access the Internet more than once a day but it is not known what they do during this time (i.e. play games, communication, social media, work, online shopping). Only 4.1% indicated that they access the Internet as little as once or twice a month.

TABLE X. HOW OFTEN DO YOU ACCESS THE INTERNET?

N	Often access the Internet		
	Items	Frequency	Percent
1	Once or twice a month	25	4.1
2	Three to four times a week	78	12.9
3	Once everyday	86	14.2
4	More than once a day	417	68.8
5	Total	606	100.0

Table XI shows that in terms of the amount of time spent using the Internet each week, the category which attracted the highest proportion of respondents was that of more than 1 hour and less than 55 hours (showing 37.3%), whereas only 13.2% used the Internet for over 20 hours a week.

TABLE XI. HOW MANY HOURS A WEEK DO YOU USE THE INTERNET?

N	Hours of using the Internet per a week		
	Items	Frequency	Percent
1	Less than 1 hour	68	11.2
2	More than 1 hour and less than 5 hours	226	37.3
3	More than 5 hours and less than 10 hours	132	21.8
4	More than 10 hours and less 20 hours	100	16.5
5	Over 20 hours	80	13.2
6	Total	606	100.0

In respect of their readiness to use the Internet as their main shopping medium, a small majority of respondents (52.5%) believed that they were ready, whilst 47.5% considered that they were not. These responses are shown in Table XII.

TABLE XII. ARE YOU READY TO USE THE INTERNET AS YOUR MAIN SHOPPING MEDIUM?

N	Main shopping medium		
	Items	Frequency	Percent
1	Yes	318	52.5
2	No	288	47.5
3	Total	606	100.0

## V. DISCUSSION

The literature has outlined that Internet is the backbone of the development of E-Commerce. When populations engage in Internet usage, they have a better understanding of the issues and threats associated with it. A better education will make turn them into confident users that may then pave the way of E-Commerce adoption and engagement. This study has confirmed what other studies have shown in terms of Internet Usage growth in other countries to Saudi Arabia. There is a growth in Internet usage although this is slow and late compared to other countries. Indeed, the study has shown that 44% of the population has started using the Internet after 2006. A time when most people in the developed world are fully using the internet and E-Commerce well developed. This section of the population that started using the Internet late, may not be fully ready to engage in E-Commerce and may still be hesitant at providing for examples their personal details or payments details. Nevertheless, it is very encouraging to see that although the sample covered large parts of Saudi Arabia, 100% of the sample participants are Internet users.

The usage of the Internet mainly at home also shows that Internet has penetrated most Saudi households. Given the nature of the Saudi society and families, shopping is a family and friends activity. When established, this could be a positive point in the adoption of E-Commerce. Another aspect that this study has shown is the use of various media by Saudis. This means that there is not only scope for the development of E-Commerce but also for M-Commerce and the use of smart phones and tablets to engage in commercial and services transactions. There are already some studies that show that the Saudi population is already engaged in E-Commerce. A study commissioned by IMRG has shown that 39% of the Saudi Adult population is engaged in E-Commerce and make online payments.

The study has also shown that there is a moderate usage of Internet by Saudis with over 50% of the population uses the Internet between one to ten hours. Nearly 70% of the population using the Internet more than once a day.

## VI. CONCLUSION

This research contributes to the knowledge of Internet activities usage in Saudi Arabia and to have a better understanding of the Saudi society behavior towards the

Internet. Furthermore, to the direct question on whether the sample population is ready to use the Internet as their main shopping medium, over half of the population answered yes. However, as many studies have shown, acceptance by the populations alone may not be sufficient for the development of E-Commerce. Legislations and the support from the governments and financial institutions are also needed for the full implementation of E-Commerce.

The support of the government in Saudi Arabia [4] and the results obtained from this study confirms the readiness of Saudi Arabia to embrace E-Commerce. However, we agree that this study alone may not provide all the answers to the readiness of the Saudi society for the adoption of E-Commerce. Indeed, the work reported in this paper is only a part of a larger study conducted by the authors.

To confirm the early results of this study, the following investigations are also being conducted:

- Perception of the sample on the use and usefulness of E-Commerce looking at both the technological, cultural and societal variables.
- Similar study is also conducted for Saudis living abroad, in this case the UK [5]. This study investigate whether the environment influence the change in the habits and attitudes towards E-Commerce.
- A comparative study between the two samples is analyzed.
- Finally, a qualitative study about the perception of companies and organization of E-Commerce is conducted.
- The results of these studies are used to develop a framework for the development and implementation of E-Commerce in Saudi Arabia.

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