

SMARTPHONES USAGE AMONG UNIVERSITY STUDENTS: NAJRAN UNIVERSITY CASE

Hejab M. Alfawareh, Shaidah Jusoh

College of Computer Science & Information Systems, Najran University (SAUDI ARABIA)

E-mails: shaidah.jusoh@gmail.com, alfawareh@gmail.com

DOI: 10.7813/2075-4124.2014/6-2/B.48

Received: 10 Oct, 2013

Accepted: 27 Feb, 2014

ABSTRACT

This paper presents a study on trends in smartphone usage among university students in Saudi Arabia. Students (N=324) from various academic levels and programs at Najran University, Saudi Arabia had participated in completing survey questionnaires. Of participants, 94.4% (n=305 /324) owned smartphones. Based on this data, the trends are evaluated, by categorizing usage into 2 types; normal usage and usage for learning. Results indicate that majority of students in Saudi Arabia used smartphones as a regular mobile phone, as a computer with an internet connection, and as a digital camera. To study, the trends in smartphone usage for learning, questions related to learning activities such as login to academic portal, use Blackboard, download class materials, taking and recording lecture notes using smartphones, were asked. Research results indicate that 91.69% of students have used smartphones to login to their academic portal. However, results also indicate that 60.89% of participants never used smartphones for Blackboard, 66.01% students never used smartphones as a mean for taking notes in a classroom and 66.89% participants never used smartphones to record class lectures. A better percentage is shown for downloading class materials, where 54.49% of the participants used smartphones for downloading class materials. Research findings indicate nearly every student owned a smartphone and used for normal usage. However, the findings also suggest that university students in Saudi Arabia did not fully utilized smartphones for learning purposes.

Keywords: smartphones usage, smartphones for learning, smartphones for social networks

1. INTRODUCTION

Smartphone is one the most ubiquitous, dynamic and sophisticated trends in communication. Smartphone is a mobile phone running a complete operating system in a manner similar to a traditional computer, which offer advanced computing abilities and connectivity options. These features enable new kinds of mobile services that in turn shape the usage habits of smartphone users.

Smartphones were released in year 2000. It was first manufactured by Ericsson and the model was called R380. Actually, this was the first time when this type of gadgets, a merging between a cell phone and computer functionality, was called a "smartphone". With the help of mobile users, a smartphone has become a very desirable device. Nowadays, smartphones have been used to replace desktop or mobile computers. All activities which can be performed on normal computers such as sharing information, sending and receiving emails, chatting, opening and editing documents, paying for products, browsing and shopping can be done using smartphones; a small device which can be kept inside a pocket of a trouser or a shirt. Some smartphones have sophisticated applications such as a camera which can work as a scanner. As smartphones provide more and more applications for an increasingly a wider range of usage situations, they have become an increasingly integrated part of people's everyday life.

Smartphone has been adopted by mobile users in many countries around the world. According to Google's latest study, Australia, the United Kingdom (UK), Sweden, Norway, Saudi Arabia and the United Arab Emirates (UAE) all boast smartphone adoption rates above 50%. The popularity of smartphone is very encouraging. Research has shown that in 2011, 83% of US adults had a cell phone of some kind, and that 42% of them owned smartphone. That translates into 35% of all adults. According to research released by comScore that 4 in every 5 smartphone users, which represents 85.9 million U.S. users, accessed retail content on their device (1).

Mobile consumers in the Middle East are also using their smartphones to engage with online and offline advertisements. For example, more than ¾ of smartphone users in Egypt have performed a mobile search after seeing an ad such as a TV commercial offline. Although, only half look at the first page of search results on their phones, more than 90% of smartphone users in Egypt, Saudi Arabia and UAE notice mobile advertising when they are surfing the mobile web. Our Mobile Planet (2) conducted a survey to understand mobile consumer in Saudi Arabia. A total of 500 Saudi Arabian online adults (18-64 years of age) were interviewed. Respondents

were asked a variety of questions around device usage, mobile search, video, social, web and commerce behavior and mobile advertising. Although Google had made an effort to make a survey on 500 online smartphone users, but the research is quite general without focusing on a specific niche. Studies of trends in smartphone usage among consumers especially college students have been conducted in many regions. Different regions have shown different study results and findings. And to the best of our knowledge very few studies were conducted in Saudi Arabia, yet none of the studies focuses on trends in smartphone usage among university students.

The purpose of this exploratory study is to verify trends in smartphones usage among university students in Saudi Arabia, by categorizing into 2 types of usage: normal usage and usage for learning. This paper is organized as follows; Section 2 presents previous work, Section 3 presents methods, and Section 4 discusses about data analysis and results. Research findings are discussed in Section 5. This study is concluded in Section 6.

2. PREVIOUS STUDY

Research reports (3-7) on consumers of smartphones have revealed that nearly every students at a college level own smartphones. Although most of students own smartphones not for learning and teaching purpose, but indirectly smartphones can be directed to useful and beneficial purposes. Mobile technology such as a smartphone has a potential to transform a traditional classroom to a "mobile classroom" where it offers teachers and students to access to the teaching and learning materials remotely at anywhere and anytime. Kim and co-researchers (3) have conducted a study on adopting smartphone as learning technology at Seoul National University, Korea. Their study focused on the use of smartphones applications for learning among Education and Engineering students. Their findings revealed that generally each students had 80 applications on their smartphones. 16% of the applications were used for some kind of learning.

A study on the usage of smartphones among medical students in the United Kingdom was reported in (5). In this research, an online survey of medical students was undertaken within one United Kingdom healthcare region. Participants were asked if they own a smartphone and if they used apps on their smartphone to support their education. Their study found a high level of smartphone ownership and participants endorsed the development of more applications to support medical students. Uys and co-researchers (6) conducted a survey on smartphone usage at a South African University. The focus of their survey was to assess the usage of smartphone applications for social networking applications (SNS). Findings of their research have revealed that students spent an average of five hours per day on their smartphones, interacting with others via SNS, and remain online for about 16 hours per day.

The usage of smartphones among Malaysian students was reported in (7). The literature has claimed that university students in Malaysia had adopted smartphones as a necessity for learning at higher learning institutions. Students used smartphones for sharing notes between classmates, recording lectures, as well as taking pictures of assignments for future reference and sharing exam results on a Facebook through their smartphones.

Researchers (8) has conducted a study to investigate to which degree college students practice smartphone security. A survey of security-related practices was administered to students in business classes at a regional public university. Their results study indicated that students to be lax in their smartphone security with men more willing to engage in risky behaviors than women. There were no differences in behaviors based upon maturity level or use of smartphones for financial transactions. Researchers also conducted a study to investigate a social impact of smartphone to the social relation and psychological well-being (9). The study was conducted across several universities near the metropolitan areas in Korea. A total of 339 respondents participated in the survey, and data from 279 students were used for analysis (97 men and 182 women). All of the participants owned and used smartphones regularly. To examine the relationships between smartphone use and well-being, the study began by identifying the needs of a college student that are satisfied by a smartphone. Motives of smartphone use were determined by asking respondents how well each of the statements corresponded to their own motive of smartphone use (1 = not at all; 5 = exactly). The findings have shown a significant relation between supportive relationships and smartphone use for psychological well-being. Their findings also suggest that a smartphone can serve as a platform through which students can socialize with others, thus contributing to improving emotional and psychological.

The study of influencing factors on the adoption of smartphone was reported in (10). The study examined the factors that influence the adoption behavior of smartphone early adopters by looking at smartphone adoption behavior of college students. Their focus is on the effect of normative peer influence on a college student's smartphone adoption. They also examined the influence of other factors such as self-innovativeness, self-efficacy, the decision maker's attitudes towards a product, financial burden of using the product, familial influence, and other demographic factors (e.g., age and gender). College students' adoption behavior was studied based on random utility theory. The discrete choice models were used. Their findings showed that friends, financial burden and other family member are important influences on the adoption of smartphone among the college students.

3. METHODS

The survey questionnaires were distributed to 324 undergraduates students at Najran University. The questionnaire was constructed by researchers of this study and reviewed by an expert panel for content validity and reliability. Questions were derived from previous literatures. The survey questionnaire consists of 3 parts. The first part consists of questions related to demographic data such as gender, age group, program and level of

studies, and a question whether she/he owns a smartphone. The second part consists of questions which focus on regular usage of smartphones. These include types of usage, place where smartphones are always used and if smartphones are used for social networks. The third part consists of questions related to how smartphones are used for learning. Multiples choice and multiple selection questions are employed.

Selected participants enroll in various programs studies, including computer science, information systems, Islamic law studies, nursing and business administration. No honorarium was offered. The survey was conducted in a classroom and monitored by a teaching faculty of a program. Survey data was entered into Survey Monkey manually for an analysis purpose

4. DATA ANALYSIS AND RESULTS

Of the students surveyed 54.1% (n=175/324) are females and 45.99% (n=149/324) are males students (see Table 1). Table 2 indicates the majority of students are in the age of 19-22 years old, a normal range for undergraduate students.

Table 1. Percentage of female and male students

Answer Options	Response Percent
Female	54.0%
Male	45.99%

Table 2. Percentage of respondents according to age group

Answer Options	Response Percent
15-18 years	2.5%
19-21 years	62.2%
22-25 years	33.1%
26-30 years	2.2%

Participants were asked whether they own smartphones. 94.14% (n=305/324) of participants answered yes, indicating they owned smartphones with the most popular model being Samsung Galaxy, 58.88% (n=179/324) followed with iPhone, 27.96% (n=85/324). Based on this data survey, the trend in smartphone usage is evaluated. Majority of students have used smartphone for 3-5 years (See Fig. 1). The trends in smartphone usage is evaluated based on 2 categories, normal usage and usage for learning. The following research questions were used:

- R1: How university students use smartphones regularly?
- R2: What are the most common places for using smartphones ?
- R3: How smartphones are being used in common places?.
- R4: Do university students use smartphones for social network?
- R5: How smartphones are used to support learning?

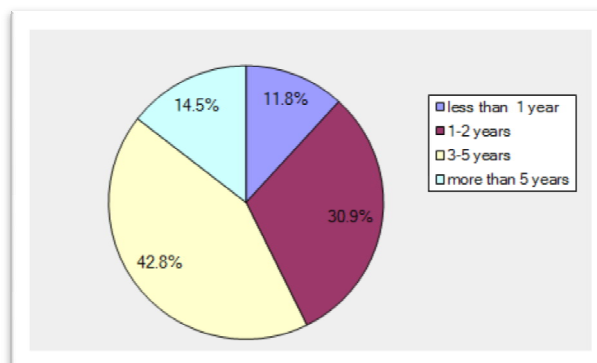


Fig. 1. Percentage frequency students owned smartphones according to year of usage

To answer R1, participants were asked to make a multiple selection (Table 3) for types of usage which were presented in the related question. These include making a phone call, checking email, checking website pages, sending text messages, reading documents, taking pictures, browsing Internet, downloading software, listening to the music, taking video, watching TV, watching movies, use as an alarm clock and use as a watch. Table 3 shows that making a phone call, checking website pages, browsing Internet and taking pictures and downloading software are among the top types of usage. Results also indicate that only 42.9% of participants used smartphones to read documents such as PDF, Word and others. Watching TV on smartphones has the least score.

Table 3. Percentage frequency of types of regular usage

Answer Options	Response Percent
Make a phone call	83.2%
Check email	49.8%
Check website pages	72.9%
Send text messages	65.0%
Read related documents in PDF, Word or others	42.9%
Taking pictures	75.2%
Browsing Internet	79.9%
Download software	74.9%
Listen to the music	65.3%
Take video	63.4%
Watch movie	48.8%
Watch TV	30.0%
Use as an alarm clock	66.0%
Use as a watch	67.7%

The study also indicates 94.7% students used their smartphones at home and 38.54% of students used smartphones at the university. In order to see who used smartphones more at the university, we have run a gender comparison analysis. Interestingly, the results indicate a huge gap between males and females (Fig. 2). Male students (84.48%) most likely to use their smartphones at the university, while females students most likely used smartphones at home. The results analysis successfully answer the research question (R2).

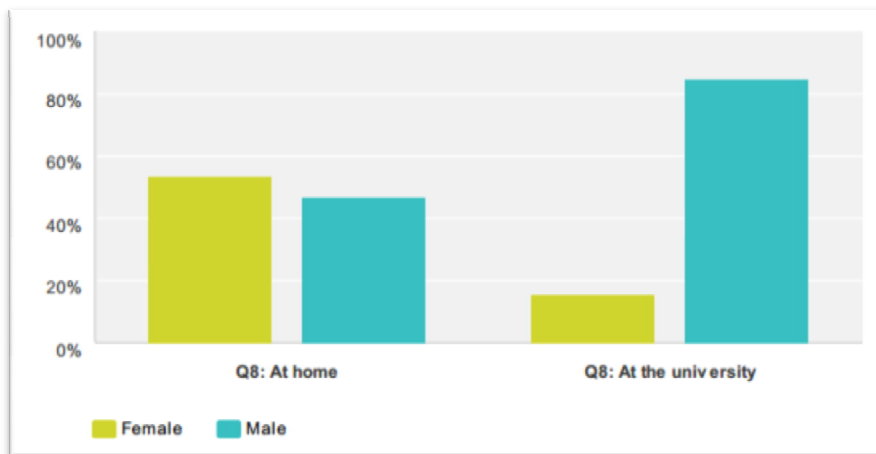


Fig. 2. Percentage frequency of female and male students of using smartphones at home and university

In order to study research question (R3), we made a comparison analysis between types of usage and most common places, such at home and at the university. Fig. 3 shows about 80% of students use their smartphones for making a phone call and browsing internet at home. While at the university about 80% of students use their smartphones for making a phone call, sending text messages, checking website pages, browsing internet an downloading software.

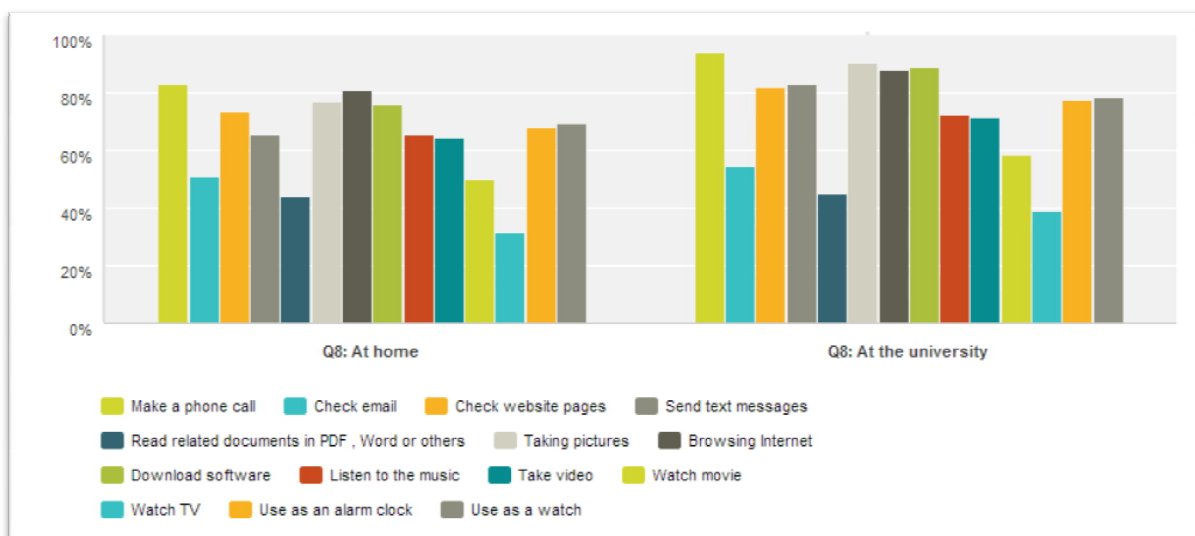


Fig. 3. Percentage frequency of use of types of usage at home and at the university

In the past couple of years, social networking sites such as Friendster, MySpace, and Facebook have become immensely popular among college students. Thus we would like to study (R4) to what extent students at Najran University used their smartphones for social networks. *Always*, *sometimes* and *never*, have been used as answer options. Fig. 4. shows that 60.27% of students always use and 31.65% sometimes use their smartphones for the social networks. This suggests that 91.92% of smartphone owners used smartphones for social networks communications.

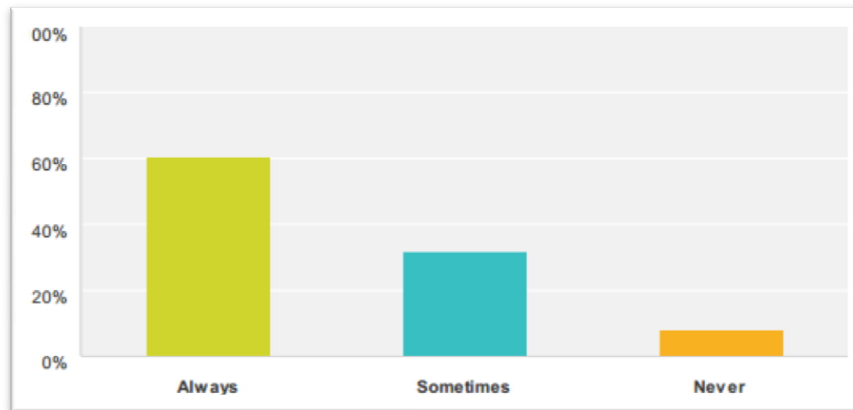


Fig. 4. Percentage frequency of students used smartphones as a means for social networks

This study also explores whether students use their smartphones to support learning (R5). Students were asked whether they log into their academic portal, use Blackboard, download class materials, take notes in a classroom and record class lecture using their smartphones. *Always*, *sometimes* and *never*, were used as answer options. Results indicate that students 91.70% used smartphones to log in their academic portal which is the most facility that students used to support learning. Results also indicate that 60.89% of students who owned smartphones never used Blackboard through smartphones. Furthermore, 66.01% students never used smartphones as a means for taking notes in a classroom and 66.89% participants never used smartphones to record class lectures. A better percentage is shown for downloading class materials, where 54.49% of the students used smartphones for downloading class materials.

Table 4. Percentage frequency for questions related to learning

Questions for Learning	Response Percent		
	Always	Sometimes	Never
How often do you use a smartphone to login to your academic portal ?	48.14%	43.56%	8.25%
How often do you use a smartphone for Blackboard ?	8.85%	30.16%	60.98%
How often do you use a smartphone for downloading class materials ?	12.96%	41.53%	45.51%
How often do you use a smartphone for taking notes in a classroom ?	9.57%	24.42%	66.01%
How of then do you use a smartphone for recording a class lecture ?	10.03%	23.08%	66.89%

5. DISCUSSION

Result analysis have indicated that 94.14% of students in Saudi Arabia can afford to own smartphones. Results show that smartphones have been used as a regular mobile phone for making a phone call and sending text messaging, as a traditional computer for applications which requires Internet connection such as checking website pages, browsing internet an downloading software. Smartphone also has been used as a digital camera as 75.2% and 63.4% of participants have used smartphones for taking pictures and videos. Smartphone has also become a means for social networking as 91.92% of participants have used smartphones for the purpose. The high percentage of using smartphone for the purpose of learning only shown for log into Academic Portal. Academic portal is a system developed by Najran University in which students can browse their academic status including class time table, grade, attendance so on. The findings suggest that almost all university students in Saudi Arabia can afford to own smartphones. Findings also suggest university students utilized smartphones as a regular mobile phone, as a computer with an internet connection and a digital camera. However, the findings also reveal that university students in Saudi Arabia have not fully utilized their smartphones for learning purposes.

6. CONCLUSION

This research has been conducted at Najran University revealed a current phenomenon of trends in smartphones usage among university students in Saudi Arabia. The findings of this research suggest; nearly every student at the university can afford to own a smartphone. The findings also suggest that students fully utilized smartphones as a regular mobile phones as well as a traditional computer and as a means to get connected to online social networks. Unfortunately the findings also suggest that the students lack of using smartphones as a means to support learning. The future study of this research shall investigate why students in Saudi Arabia were not utilizing smartphones for learning purpose.

ACKNOWLEDGMENT

This research is supported by Najran University, Saudi Arabia under research grant entitled " A Study of Smartphones Usage Among Najran University Community" with code No. (ID: NU/ESCI/13/64).

REFERENCES

1. L. Rao (19 September 2012). "comScore: 4 Out Of 5 Smartphone Owners Use Device To Shop; Amazon Is The Most Popular Mobile Retailer". *TechCrunch*. AOL Inc. retrieved 27 June 2013.
2. <http://think.withgoogle.com/mobileplanet/en/>, retrieved March 11, 2014
3. N. Park and H. Lee, (2012). Social Implications of Smartphone Use: Korean College Students' Smartphone Use and Psychological Well-Being. *CyberPsychology, Behavior & Social Networking*, 15(9), 491-497
4. J.L. Kim and J. Altmann, (2013). Adapting Smartphones as Learning Technology in a Korean University. *Journal of Integrated Design and Process Science*, 17(1), 5-16
5. K.B. Payne, H. Wharrad and K. Watts, K. (2012). Smartphone and medical related App use among medical students and junior doctors in the United Kingdom (UK): a regional survey. *BMC Med Inform Decis Mak*, 12, 1-11.
6. W. Uys, A. Mia, G.J.Jansen, H.V. Schyff, M.A. Josias, M. Khusu, M. Gierdien, N.A. Luekes, S. Faltein, T. Gihwala, T. Theunissen, Y. Samsodie, (2012) Smartphone Application Usage Amongst Students at a South African University, *IST-Africa 2012 Conference Proceedings*, 1-11
7. N.M. M. Mohtar, M. A. Hassan, M. S. Hassan and M. N. Osman, (2013), *IOSR Journal Of Humanities and Social Science (IOSR-JHSS)*, The Importance of Smartphone's Usage Among Malaysian Undergraduates, Volume 14, Issue 3, 12-118, 2013
8. H. Jones and L. R. Heinrichs, (2012), DO BUSINESS STUDENTS PRACTICE SMARTPHONE SECURITY?, *Journal of Computer Information Systems*, Vol. 53, 22-30.
9. N. Park and H. Lee (2012), Social Implications of Smartphone Use: Korean College Students' Smartphone Use and Psychological Well-Being, *CyberPsychology, Behavior & Social Networking*, vol. 15, pp. 491-497
10. S.Y. Lee, (2014). Examining the factors that influence early adopters' smartphone adoption: The case of college students. *Telemat. Inf.*, 31(2), 308-318.