Users Experiences on Mobile Phone Charging Solutions

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Abstract

Mobile phone are now become an important for the daily lives of the human beings. With the rapid development of the digital technology, many new features and applications are being included in the modern mobile phones. Mobile phone dependence is associated with the technology addiction. Presently, the use of technology is persistent and there is compulsive use of smartphones all around the globe. To this end, the only thing that limits its proficiency is its battery usage. Mobile charging stations are one of the best available solutions of to get the mobile phone charged. The present study is an attempt to determine the need of the mobile charging stations. The study utilized the online survey method to attain the data the need of mobile charging stations. The data was gathered through online Google forms. The study involved 386 participants, and the data was collected by questionnaire. The finding exhibited that the most of the participants spent more time in the premise of shopping malls. A vast majority of the participants (n =62 %) remarked that they utilized their cell phone charging station as their battery was drained and they wanted to recharge it. The result of the study showed that the charging stations are imperative for the public places, particularly for the shopping Malls.

Key words:
Mobile charging stations, consumers behaviors, portable media

1. Introduction

Smartphones are the most convenient portable media devices and they have attained the consideration of the most of the population of the present day. They have also gathered the power of improving and supplanting the numerous functions of the daily life. Nowadays these are used for the pre-shopping activities, sports, games, social contact and many other activities beside the call and short message service function. Numerous researchers (Khan et al., 2019; Khan, Radzuan, Shahbaz, & Ibrahim, 2018; Khan, Radzuan, Shahbaz, Ibrahim, et al., 2018; Khandkar, 2009; Shahbaz et al., 2016; Shahbaz & Khan, 2017; Taj et al., 2016) have utilized its social media functions for the teaching and learning pursuits, particularly for English language teaching. Today, they are transmuting the in-store shopping behavior of the consumer. Smartphones are transforming the in-store shopping experience. Kang et al. (2015) assert that about 86% of the consumers utilize their smartphone during the shopping in the different store. They further remarked that 140 million shoppers shop in the US with smartphones. The use of mobile technology in the perception of mobile realm has exceeded the actual retailers.

The mobiles telephones are outfitted with many intriguing and captivating facilities including audio and video calling, sending messages, utilization of web, shopping and maps and many more. The use of cell phones significantly depends on the numerous elements that may obstruct the utility of its use and advantages (Chen et al., 2020) The cell phone manufactures are taking the diverse measure to constrain the obstacles in the viable reconciliation and its usage with its full potential. The importance of the mobile phone relies in the fact the about 61% people check their mobile phones after they wake up (Bhattacharya et al., 2019).

Alkhunaizan, (2019) indicated that the usage of mobilephones is crucial as it is now thought as an essential aspect of the majority of the people all over the world. The smartphones are providing the cordless mode of communication and they include the ICT innovations which can be managed easaily anytime of the day (Viswanathan & Sreekumar, 2019). At present, the majority of the people are using and have confidence in latest cellphones in most of the places in the world. (Chen et al., 2020; Srivastava, 2005; Umar et al., 2017). The invention of smartphone technology has revolutionized the lifestyles of the masses including, traveling, education, health and keeping in touch to the one another globally.(Elliott et al., 2017; Mohelska et al., 2018; Yang et al., 2019). This speedy innovation in the advancement of the technology has altered the life of a common man to that of a learned and a scientist. In the year 2012 the technolgogical usage was above 1.6 trillion with its manifestations. This concludes that the utilization of the digital technology and digital transmission is common in every filed of lives. Tsai et al. (2017) argued that modern Pcs, mobilephnes and laptops are the most important gadegts of the modern society and people are having atleast one cellular phone with them.

The use of mobile phones and smartphones is rapidly rising in the Saudi Arabia. It resulted due to the easy access and provision of the advanced small and smart technloglical machines. GASTAT, (2018) report indccates that the users of smartphones will reach to the number of 19.5 million in 2019. (Alkhunaizan, 2019; Allmnakrah & Evers, 2019; Khan & Salam, 2019; Khan et al., 2019). The approximate internet usage has reached from 5 to 6 hours a day in Saudi Arabia

(Allmnakrah & Evers, 2019; Khan et al., 2019; Shahbaz et al., 2016; Taj et al., 2016). The usage of smarphone is being practiced on various locations including shopping maal, petrol stations, grocessary stores, utility bills, bank applications and at chemists. All this will need power in the battery. The usage of these applications drains the battery so fast. The present technological gadgets require more power and energy to consume as compared to the machines in available in yester years. This opens the way to install the charging stations in many locations of the public places. It is obvious from the many investigations that internet and mobile phone usage varies from person to person. (Alshahrani, 2016; Baabdullah et al., 2017). These disparities in the utilization differ among learners and the youth. It was seen that youth incline to be more habitual in the use of social media on cellular phones through internet. The cell phone , social media and internet addiction in the masses is regarded as the basic dilemma of the day to day society (Hao et al., 2019; Kuss et al., 2018; Liu et al., 2018). In particular, youth is employing considerably more time on mobile phones and internet recently. The figure below speaks of the usage and employment of the cellular phones in the Saudi Arabia from 2018 to 2023.
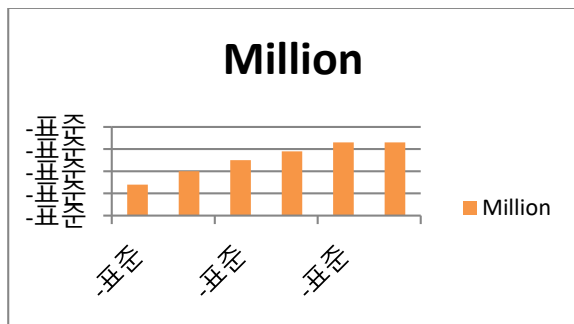

Fig. 1 The smartphone user data adopted from (GASTAT, 2018)

2. Nomophobia

Mobile phone dependence is associated with the technology addiction. Presently, the use of technology is persistent and there is compulsive use of smartphones all around the globe. The fact is that the mobile phones have become an important part of our daily lives and they have replaced the conventional modes of attraction. Yildirim and Correia (2015)assert that mobile phone propounds a developed technological mode of communication and social interaction. Thus, these are assuming the source of pleasure. The present use of mobile phone is a way of palm solution which assists the human being in many aspects of the daily lives. Technology has made the consumer so feebly that the user may be ta the receiving end if the mobile phone vanished.

People are suffering from the nomophobia that is most widely associated with the anxiety of leaving away from the phones. He further asserts that this is related with the chaos of the present digital society that may result in nervousness, anxiety and anguish that result in being out of the phone contact. A UK based study revealed in 2010 that about 54% of the smartphone users in UK leans towards anxious and concerned when they "run out of battery, lose the contact whit mobile phone or out the network coverage. The fear of battery drainage can portrayed in the following figure.
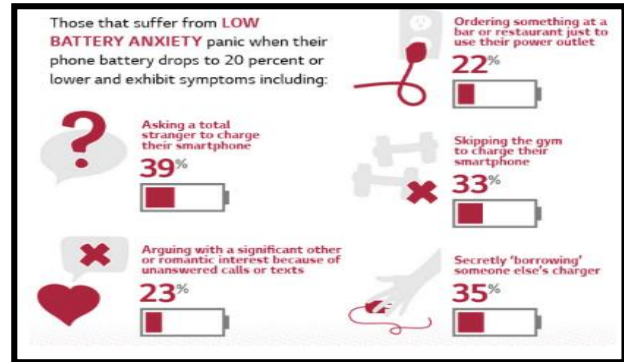

Fig. 2 Adopted from https://kwikboost.com/low-battery-anxiety/.

The use of smartphones is continuously expanding in Saudi Arabia. This is happened as a result of the suitability, accessibility and availability of the cutting edge technology contraptions and cell phones. The smartphone users are reached to 20 million in the year 2019 and the numbers are persistently expanding (GASTAT, 2019). This declares above 98% of the populace in the country possess a smart or a mobile phone (Alkhunaizan, 2019; Allmnakrah and Evers, 2019; M. S. Khan and Salam, 2019; R. M. I. Khan et al., 2019). Allmnakrah and Evers, (2019) assert that people between age 12 to 65 use five to six hours use smartphones on daily basis. Clearly the utilization of internet is careful the cell phone by utilizing various applications and now individuals are utilizing Quick Response Code (QR) in their cell phones to pay at the business sectors, oil stations, restorative stores and other service bills. Research has shown variations in the use of cell phone and social media (Alshahrani, 2016; Baabdullah, Alalwan, Rana, Dwivedi, and Weerakkody, 2017). These changes in the utilization shift and understudies and youngsters will in general be progressively dependent of the web and cell phone use. Directly the person is dependent on web and cell phones and it is considered to an essential issue in the general public (Hao et al., 2019; Kuss et al., 2018; Liu et al., 2018). The grown-ups, especially young person are assigning additional time on web and cell phones as of late. The accompanying figure shows the use and predication of cell phone in the Saudi Arabia from 2017 to 2023.

3. Smartphone Charging Station Perspective

The invention of the innovative technology in the shape of smartphones has gained the importance spot in the various aspects of the daily life situations of the human beings. The development of the cell phone is curious right now and it has the key job in our everyday life. The market of the cell phone has developed impressively in the most recent decade (Alkhunaizan, 2019). Cell phone is a created perfect work of art of the contemporary innovation. Regardless of its handiness and showy qualities it has a few confinements in its utilization for extended hours in daily life. The battery life of a smartphones limits it usage and creates frustration among the different age groups(Goneos-Malka et al., 2016). For example the Samsung phone brand is in fact considered to use its battery for 24 hours approximately and this usage greatly depends on the sort of the application usage and use of the media. The use of the battery depends on the sort of the applications uses and web languishing.

The smartphone is an advanced digital invention of the present scientific age. Regardless of its helpfulness and ostentatious qualities it has certain drawback in its utilization for an extended time continuously. The drained out battery is the main cause of the its limitaions(Goneos-Malka et al., 2016; O'Bannon & Thomas, 2015). For example the battery of Samsung cellular phones is expected to continue the working for 25 hours normally. The battery charging life efficiency depends on the type of light and heavy application usage.

Arunachalam et al. (2019) assert that battery drainage is unavoidable in the cellular phones due to excessive calls, messaging and the utilization of social media apps, internet surfering. The utilization of cell phones depends on the life of the battery. In Saudi Arabia an immense number of the populace utilizes cell phones just as they use their cell phones for web browsing. The table below illustrates the use of different technological by using internet.

Table 1 Internet Access

Digital technology	Internet Access
Mobile Phones	95%
Tablets	81%
Laptops	87%
Desktops	79%

On account of the enthusiastic use of cell phone, the vast majority of the individuals have experienced the time where they have lost the availability of the fundamental elements of the cell phones including calls, GPS and social media contact because of the low battery situation.

This incredibly impacts the various parts of the life, for example if someone held the call or a businessperson face this issue and one can't locate a reasonable spot to get the chance of charging of mobile phone may confront a great deal of difficulties. Would it be still be enthusiastic and excited to stay on the premises or area without cell phone? This is a significant apprehension to be considered in the various shopping centers, medical clinics and even in the institutions for education. One of the best and convenient arrangements is portable charging stations, however power banks are likewise helpful right another option of the recharging solution but they also have the constraint of battery and henceforth the most productive and versatile arrangement is charging stations.

The smartphone charging industry is growing and it is crucial to overcome the problems of mobile phones charging. Presently the use of portable power bank is common for business and personal usage. The companies have introduced various charging stations at various areas in the including shopping malls, hospitals and even at the airports. The charging station is a fundamentally a box type table with the capacity of a certain number of cell phones with power supply in each box of recharging purposes only. This facility is persistent for various kinds of the cell phone brands. The figure below illustrates the gains of the cell phone charging stations. The accompanying figure shows the upsides of the cell phone charging stations.
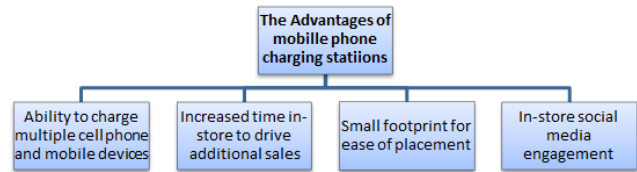
Smartphone charging stations industry is advancing in the Saudi Arabia and with the advancement of this, the charging station industry is in stating the charging station boxes with different numbers of locker capacity. They pick the various areas relying on the individuals visit to a certain place and the behavior of the people of the region. Likewise the researchers are also considering their consideration towards the ramifications of the versatile charging stations. Charging station is helpful and encourage the customers to spend more time in the malls (Wood, Jeremy, and Burton, 2015). Alkhuzan (2019) showed that the clients of the cell phone charging stations displayed the confidence of the availability of the charging stations. The present paper aims to identify the usage of charging station and this is governed by the following research question

1. What is the effect of mobile charging stations on the consumers' expenditure during the mobile charging station?
2. What is the need of a mobile charging station?

4. Methodology

The study utilized the online survey method to attain the data the need of mobile charging stations. This method is

applicable as it helps researcher to gain the diverse data of the subject perception and behavior. The data were attained through a questionnaire. The questionnaire was modified by the previous study (in press). Online Google forms were used to seek the consumer behavior on the charging station. Different modes of social media were involved in the delivery of the questionnaire. The respondents were given a week to post their responses. 386 people participated the process of data collection where 224 were male respondents and 162 respondents were female.

5. Results and findings

Table 2 illustrates the consumers' use of charging stations and the reasons of the utilization of the charging stations.

Table 2: The effect of mobile charging on consumer expenditure

Serial Number	Expenditure	Charging station 1	Charging station 2	Charging station 3
1	Nothing	16%	19%	29%
2	1 to 19SR	39 %	38%	27%
3	20 to 49	27%	14%	118
4	50 to 99	15 %	20%	21%
5	100 to 200	7%	9%	12%
6	Average expenditure (SAR)	6.7	6.1	6.3

Table 2 presents the comparison of the expenditure during the consumer stay at the shopping mall while recharging their cell phones by using charging stations. It is obvious from the table that the people use 6.7 SAR in Mall 1, 6.1 SAR in Mall 2 and 6.3 SAR in Mall 3 during their stay at the shopping mall. This asserts that if the people spend more time in premises of shopping mall they tend to spend more. The following table presents the data on the reasons of the usage of charging stations.

Table 3 why did people use charging stations

1	The battery of the my mobile phone ran out of charging	62
2	My battery was close to low and wanted to recharge before the mobiles shuts off	26.1
3	Other	10.9

Table 3 displays the data on the motive so the consumers for recharging their cell phones at the distant location using charging stations. A huge numbers of the participants (n= 62%) replied that the reason of the usage of the charging station was battery drainage and (n=26.1 %) asserted that the battery was about to run out of charging. Whereas only 10.9 % of the consumers claimed that they had other reasons to use the charging stations. Moreover, when the consumer was asked what will they do if they feel that their mobile phone battery is going to die. About 65% of the consumers

replied that they will straightforwardly leave the mall and look for the charging solution.

6. Discussion

The study explored the consumer behavior hat is associated with the three different charging stations in the Saudi Arabia. The aim of the study is to examine the consumer behavior on the usage of charging stations and how much they spent during their wait while recharging their mobile phones. The advantages of the charging stations of the cell phones to ability to keep the consumers' cell phone charged and this resulted in the higher gather in gathering more people near malls. The finding exhibited that the most of the participants spent more time in the premise of shopping malls. A vast majority of the participants (n =62 %) remarked that they utilized their cell phone charging station as their battery was drained and they wanted to recharge it. Whereas the comparatively less number of participants (n= 26.1 %) used to charge stations as their cell phones was about to off. The data showed that consumers who visited to the shopping mall and stayed there for longer time during the wait to recharge their cell phone have spent more money. This asserts that if there are more charging stations near the premises of the malls, this can attract more customers and the charging station industry can facilitate well. The viability of the charging station is no only required in the premises of the mall, but it is also imperative for the other intuitions.

Cell phones charging services are the kind of modern technology and communitarian retail innovation. The establishment of the charging station in a store can support the store or brand with the fast and the wide number of visitors to the store. The findings of the present attempt are useful for the researchers, proprietor of the shopping centers and business corporations to expand the offer of their items and thus they will have the option to acquire benefits by introducing cell phone charging stations. The key concept behind the charging stations of the mobile phones is to keep the person's cell phone charged and this brought about the higher number of the consumers. The advantages of charging station is to keep your clients' telephone charged which can develop the possibilities of the attraction of the people. This will result in generating and improving the revenue of the digital industry. Including a charging station not just assuages the stress of a mobile phone battery running low, but it attracts more clients and keeps them there longer.

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