

# The Implication of Mobile Phone Charging Stations: A Perspective of Consumer Experience

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## Abstract

Smartphone and mobile phone usage is gradually increasing in Saudi Arabia. This is happened because of the viability, availability and affordability of the modern technological gadgets and smartphones. In spite of its usefulness and ostentatious characteristics it has some limitations in its usage extensively and for a longer period of time. The thing limits its utility of any mobile phone is the battery. The purpose of the study was to investigate the consumers' usage of mobile phone charging stations and the time and money they spent during the mobile phone charging. A total number of 860 consumers and three distant shopping malls were included for the data gather and analysis of the data. The findings of the study exhibited that in the due course of waiting, the mobile charging stations provide more consumers for the whole retailers and the consumer can stay longer at the store and when they stay longer, ultimately they will spend more and they will be able to connect and stay in touch with the store.

## Key Words:

*Mobile phones; Mobile Phone Charging Stations; Consumers; Shopping Malls*

## 1. Introduction

Over the last few years there has been an increase and growing interest in the usage of mobile phones. Mobiles phones are become an important part of the human life and they play a pivotal role in life. Mobile phones are ubiquitous and hand held devices and research has proven them to a useful asset of daily lives (R. M. I. Khan, Radzuan, Shahbaz, Ibrahim, & Mustafa, 2018; Shahbaz, Khan, Khan, & Mustafa, 2016). They attained a special position even in the educational institutions. Many students, teachers, educationists and researchers are using the mobile phones for the enhancement of the learners learning capacity in order to facilitate and foster the learning process (R. M. I. Khan, Radzuan, Alkhunaizan, Mustafa, & Khan, 2019; Shahbaz & Khan, 2017). The mobiles phones are equipped with many interesting and fascinating features including audio and video calling, sending messages, use of internet, shopping n maps and many more. The usage of mobile phones greatly relies on the many factors that may hinder the utility of its usage and benefits (R. M. I. Khan, Radzuan, Shahbaz, & Ibrahim, 2018). The mobile phone manufacturing

companies are taking the keen concern to limit the hurdles in the effective integration and utilization of all the features.

Once contemplated a lavish entity reachable to pick out a few, smartphones are now the easily available and important element of the most of the people around the globe (Alkhunaizan, 2019; McCool & Monks, 2017). Viswanathan and Sreekumar (2019) assert that the mobile phones are supporting the voice communication without wire and they contain the digital advancements which are easy to manage and use around the clock. Presently most of the population of the world is essentially depending and relying on the modern and up-to-date smartphones (Srivastava, 2005). The progression of the hand held technology has evolved the way of living, shopping, traveling communicating, learning working and even the treatment in the hospitals (Oduor et al., 2016; Parasuraman, Sam, Yee, Chuon, & Ren, 2017; Taj, Sulan, Sipra, & Ahmad, 2016; Thomas & Muñoz, 2016; Underwood, 2014; Wan, Dastane, Satar, Safie, & Ma'Arif, 2019). The swift expansion in the field technological advancement has changed the life of lay man to scientist and philosopher. The use of the technological advancement is prevalent and more than 1.6 trillion digital interfaces were observed in 2012. This asserts that the use of digital communication and digital technology is persistent in the world and the technological devices are everywhere. Digital PCS, laptops and mobile phones are the key elements of the today's society and almost most of the population in the world owns a mobile phone.

Smartphone and mobile phone usage is gradually increasing in Saudi Arabia. This is happened because of the viability, availability and affordability of the modern technological gadgets and smartphones. The number of the people who are using the smartphone has reached to 19.4 million in the year 2019 and the numbers are increasing (GASTAT, 2018). This asserts that above 98% of the population in the kingdom owns a mobile phone or a smartphone (Alkhunaizan, 2019; Allmnakrah & Evers, 2019; M. S. Khan & Salam, 2019; R. M. I. Khan et al., 2019). The average usage of the internet in the Saudi Arabia is ranges between five to six hours in a day (Allmnakrah & Evers, 2019; R. M. I. Khan et al., 2019; Shahbaz et al., 2016; Taj et al., 2016). It is obvious that

the use of internet is thorough the smartphone by using different applications and now people are using quick response codes (QR) in their mobile phones to pay at the markets, petrol stations, medical stores and other utility bills. Research has indicated disparities in the usage of mobile phone and internet activities (Alshahrani, 2016; Baabdullah, Alalwan, Rana, Dwivedi, & Weerakkody, 2017). These variances in the usage vary and students and young people tend to be more addicted of the internet and

mobile phone usage. Presently the human being is addicted to internet and mobile phones and it is pondered to a vital problem in the society (Hao et al., 2019; Kuss et al., 2018; Liu et al., 2018). The adults, particularly teenager are allocating more time on internet and mobile phones in recent years. The following figure displays the usage and predication of mobile phone in the Saudi Arabia from 2017 to 2023.

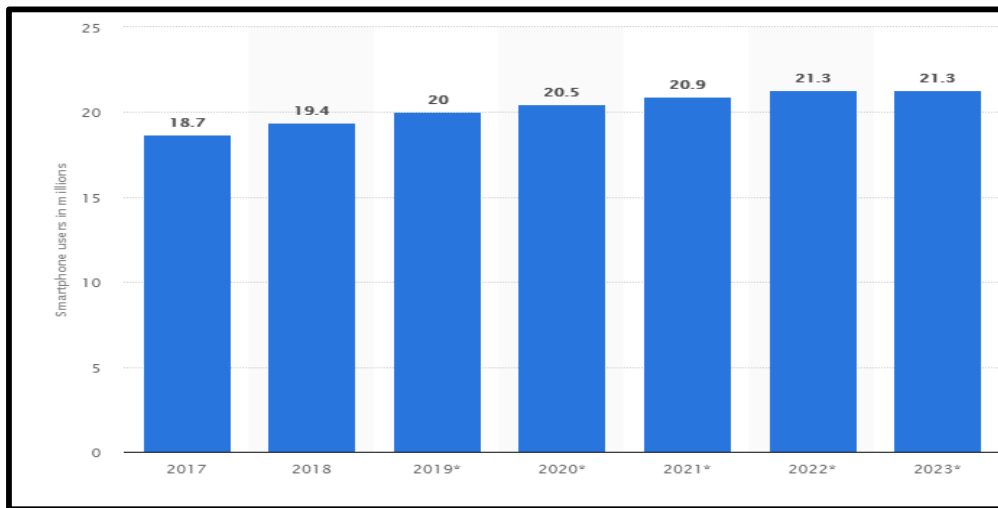


Fig. 1 the number of mobile phone users adopted from (GASTAT, 2018)

## 2. The need of Mobile Charging Stations

From the time of the invention of the mobile phone, attaining the up-to-date technology has attained the key place of the lifestyle of the human beings. The invention of the smartphone is peculiar in this respect and it has the key role and integral role in our day to day life. The market of the smartphone has evolved considerably in the last decade. Smartphone is a developed master piece of the contemporary technology. In spite of its usefulness and ostentatious characteristics it has some limitations in its usage extensively and for a longer period of time. The thing limits its utility of any mobile phone is the battery (Goneos-Malka, Strasheim, & Grobler, 2016; O'Bannon & Thomas, 2015). For instance the Samsung mobile phone series is technically deemed to be able to govern the function of a mobile phone for 25 hours in average. The usage of the battery relies on the type of the applications usages and internet suffering.

The low battery capacity is inevitable in the mobile phones because of the making calls, sending messages, using social media and other running or background applications, use of internet, all this need the power and aid from the battery (Arunachalam, Hong, Lee, & Ppallan, 2019; Chen & Zong, 2016; Srinivasa, Begum, Haseley,

Hempstead, & Challen, 2017). In other words, the use of smartphones relies on the life of the battery. In Saudi Arabia a huge number of the population use mobile phones as well as they use internet on the mobile phones. The following table portrays the use of internet on different digital technological gadgets available in the Saudi Arabia.

Table 1: the access and usage of internet through digital technology

| Use of digital technology | Internet Access Percentage |
|---------------------------|----------------------------|
| Mobile Phones             | 96%                        |
| Tablets                   | 80%                        |
| Laptops                   | 88%                        |
| Desktops                  | 85%                        |

Because of the passionate usage of smartphone, most of the people have been in the experience of the time where they have lost the connectivity of the basic functions of the smartphones including calls, GPS and chat because of the drainage of the mobile's battery. This greatly effects the different aspects of the life, for instance if a candidate held the call or a businessman face this problem and one cannot find a suitable place to recharge the battery may face a lot of challenges. Would it be still be eager and enthusiastic to remain on the premises or locality without smartphone? This is an important concern to be considered in the different malls, hospitals and even in educational institutions. One of the most effective and

handy solution is mobile charging stations, though power banks are also handy in this regards but they also contain the limited battery and hence the most fruitful solution is

the mobile charging stations. The following figure (retrieved from: [www.lockncharge.com/research](http://www.lockncharge.com/research)) displays the importance of the mobile charging stations.

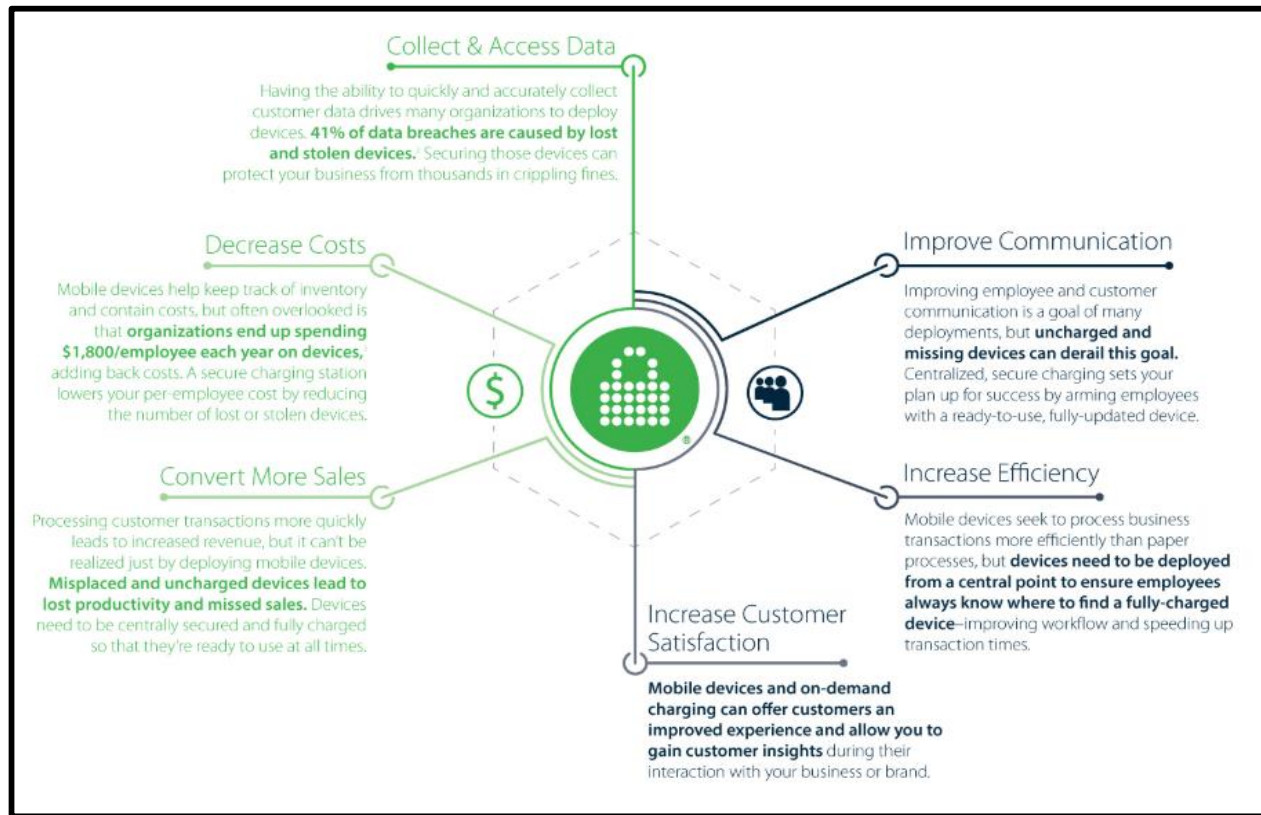
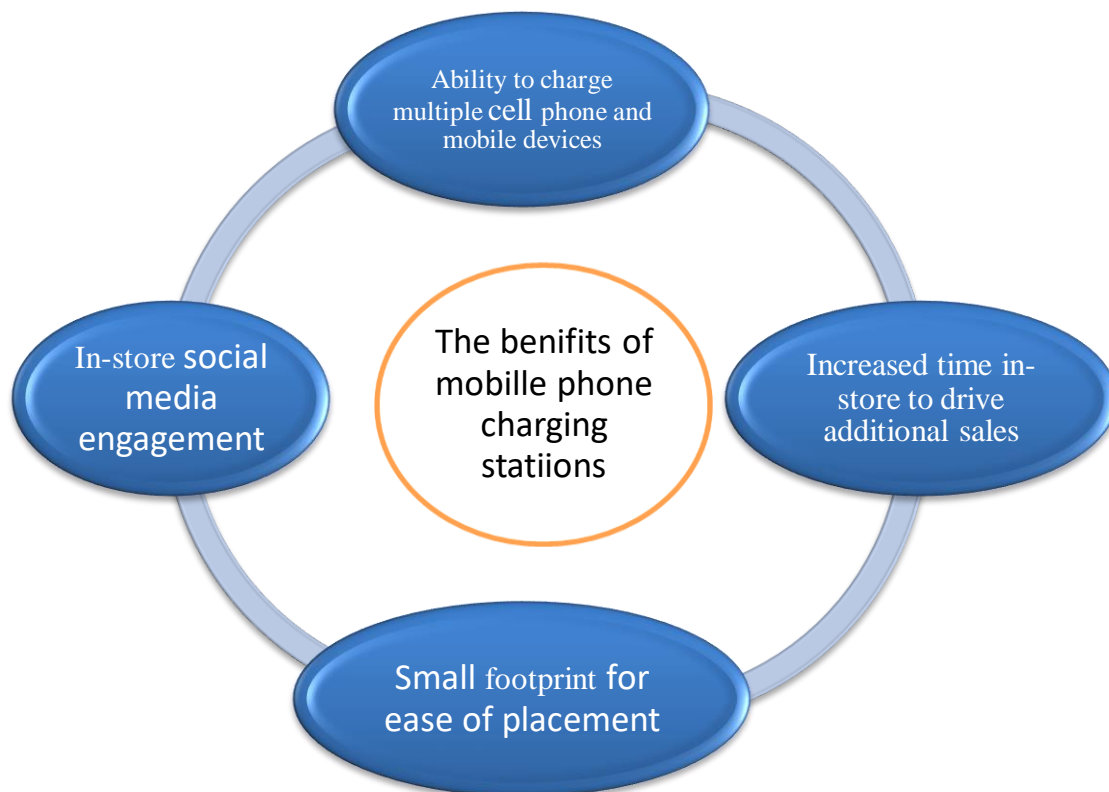


Figure 2 the importance of mobile charging stations adopted from

### 3. Mobile Charging Stations

Smartphone charging manufacturing companies are emerging to meet the requirements of the charging of the mobile phones. The charging companies have evolved with both for the personal use as portable device and for business owners. The companies install numerous charging stations at different location in the big cities. Mobile charging station is a basically a box type table with small boxes whit a capacity of containing one mobile phone with power in let in each box to facilitate the user to recharge the mobile phones at different places. It offers its services to numerous mobile phone companies and different charging cables. The following figure displays the advantages of the mobile phone charging stations.



Mobile charging stations industry is evolving in the Saudi Arabia and with the development of the this, the companies are installing the mobile charging boxes with numbers of various charging lockers. They choose the different locations depending upon the people visit and consumer behavior. The researchers have also pondering their attention towards the implications of the mobile charging stations. Charging station are useful and the facilitate the consumers around the clock, the most widely used charging station are; charging stations for the cellphones ; car batters and for the pcs (Wood, Jeremy, & Burton, 2015). A more recent study conducted by the Alkhuzan (2019) exhibited that the users of the mobile phone charging stations exhibited the dependency on them. The extensive experimental study installed various mobile charging stations on 3 different locations in the kingdom. A considerable number of the people used the charging stations and average charging time ranged between 10 minutes to 20 minutes in three distant locations. The palace where the consumers used more time in charging their cell phones was university and the least one time was the shopping.

#### 4. Research Questions

The present study aims to answer the following research questions:

1. Why do consumers use mobile charging stations?
2. How much do the consumers spend during the mobile charging at the mobile charging stations?

#### 5. Methodology

The present study involved the survey method design to investigate the implications of the mobile charging stations. The survey method helps researcher to attain the extensive data of the people behavior and experiences. On the researcher visited different locations in order to select the targeted location of the charging stations depending upon the following factors:

- i) Location of the Mall
- ii) Location of the Charging station
- iii) Number of the people who visit the Mall

After meeting the required criteria the researcher selected the three malls. The data was gather by using a questionnaire. The questionnaire was developed by the researcher and sent to four different experts to seek their opinions on the questionnaire. The suggestions were taken into considerations and final version of the questionnaire was then transferred to Google forms. The Google forms are helpful to attain the quantitate data. Then the researcher sent the questionnaire by different modes of media including email, WhatsApp and twitter. The consumers were given 3 to 5 days to post their experience of using mobile charging station. A total numbers of 860 consumers responded to the questionnaire. 43% of the consumers were male and 57 % were consumers who used the mobile charging stations. The following table shows the distribution of the population:

Table 2: The distribution of the population

| Serial No | Gender | No of participants | Percentage |
|-----------|--------|--------------------|------------|
| 1         | Male   | 146                | 42.9%      |
| 2         | Female | 194                | 56.1%      |

The responses of the participants were transported to excel sheet and the percentage was calculated for the analyses of the data.

## 6. Results and Findings

The result of the present study are presented and illustrated by presenting them into the table in three distant headings. These titles are emerged from the responses of the questionnaires. Table 3 displays the consumers' use of charging stations and the reasons of the utilization of the charging stations.

Table 3: Reasons for using Mobile Phone Charging stations

| Reason for using Mobile Charging stations |  |      |
|---|--|------|
| 1   | I had already run out of battery and needed to recharge my phone               | 65   |
| 2   | I was close to running of battery and wanted to recharge it before running out | 27.9 |
| 3   | other  | 7.1  |

Table 3 illustrates the reason for using mobile phone charging stations form three distant locations. Majority of the respondents (n= 65%) asserted that they used mobile charging stations because their battery ran out and they needed to recharge their phone. Only 27.9 % exhibited that they were close to running out of the battery. And 7.1 % used the charging stations for the other reason.

Table 4: Money Spent during the Mobile phone charging by using Mobile phone charging stations

| Serial Number | Money is SAR spent during the Mobile Charging | Mall 1 | Mall 2 | Mall 3 |
|---------------|---|--------|--------|--------|
| 1             | Nothing                                       | 17%    | 22%    | 34%    |
| 2             | 1to 20 SR                                     | 37 %   | 41%    | 26%    |
| 3             | 20 to 50                                      | 24%    | 13%    | 17%    |
| 4             | 50 to 100                                     | 13 %   | 16%    | 14%    |
| 5             | 50 to 200                                     | 9%     | 7%     | 9%     |
| 6             | Average money spent (SAR)                     | 6.9    | 6.2    | 6.4    |

Table 5 displays the comparison of the amount spent during the waiting time of the mobile phone charging stations. The average amounts per minute spent during the wait time were 6.9 Saudi Riyal in Mall 1 and 6.2 in the Mall 2 and 6.4 Saudi Riyals in Mall three. This show that in each mall consumers who use mobile charging stations have spent above 6 Riyals. The following table displays who used the facility of the mobile charging stations.

Table 5: Mobile Charging Users

| User of Mobile Charging Station |                |
|---------------------------------|----------------|
| Employees of the Mall           | Shoppers/other |
| 27.1 %                          | 72.9 %         |

## 7. Discussion and Implications

The study explored the implications and associations of the mobile phone charge stations at the three distant locations in the Saudi Arabia. The results of the study showed that a vast majority of the consumer have gained the benefits of the mobile charging stations. The purpose of the study was to explore that how much consumer spent during the mobile phone charging stations and why they use the mobile charging stations. The result exhibited that the availability of the mobile phone charging station can facilitate the consumers and hence they have no worries of the battery drainage during the shopping. Majority of the respondents (n= 68.87%) asserted that they used mobile charging stations because their battery ran out and they needed to recharge their phone. Only (n= 19.81%) exhibited that they were close to running out of the battery. Another import concern of the present study was to measure the consumers' frequency of the visit to the shopping mall. 12 % of the consumer visit the shopping mall more than once in a week and 13 % visit to the mall once a month. A considerable higher numbers of the people visit mall once a week. Only 4 % of the consumer visit mall once I two weeks. The table also depicts the amount of the money spent during the mobile phone charging at the charring stations installed in the locality of the shopping mall. It is vital form the table that a huge number of the people(n=40%) spend 201 to 500 Saudi Riyals during the waiting time of the mobile phone charging and 11 % spent from 50 to 100 Saudi Riyal. This asserts that everyone has spent around 1.3 USD during their waiting time.

Mobile phone charging facilities are the sort of cutting edge, collaborative retail technology. The installation of the charging station in a store can help the store or brand with the rapid and wide number of visitor to the store. The results of the study are very helpful for the owner of the shopping malls and business corporates to increase the sale of their products and hence they will be able to gain more profits by installing mobile phone charging stations.

## 8. Limitation and Recommendations

The study used the survey method with a questionnaire, the future study is essential to include the qualitative part of the data in order to seek the better understand of the consumers behavior on the mobile phone charging stations. Moreover, the study involved only three shopping malls, it would be more operative to include some more shopping malls.

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