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THE ADOPTION OF SMARTPHONE IN RURAL AREA AT PERAK

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The thesis submitted in partial fulfillment of the requirements for the degree of  
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## **DECLARATION OF ORIGINAL WORK**

“I declare that this report is my original work and all references have been cited adequately as required by the University.”

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## DEDICATION

Firstly, thousands of appreciation to my loving parents, my sister and my friends who has helped me to complete the survey for this research either energy or money. For all the hardship, patience, love and support on my everyday expenses. This accomplishment would not be possible without them.

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## ABSTRACT

Nowadays, in era technology communications an important including mobile phone once the technology which can enhance relations between each other. Besides, it one of medium communications tool whether old people or young people and suitable for everyone. A mobile phone such as mobile phone can make calls and SMS only and mobile phone have added function to surf the internet or called a smartphone, which two mobile phone that people in rural area a preferred using it. So, not all of them using a mobile phone that can surf the internet but still have them using the old type of mobile phone. It influences by age or other factors that they still use the old type of mobile phone and acceptance a new thing. The research aim factor influences the adoption of a smartphone in a rural area. This is because an acceptance of technology such as mobile phone in city faster than a rural area especially smartphone because based on acceptance of a person. In this research also to see the factor most influence the adoption of a smartphone such as demographic factor, individual factor, social influence, facilitating conditions, technology service and socio-economic. The study comprised 206 respondents who live in rural area and used random sampling since the population in a rural area a larger and not limited to people to use a mobile phone only. Socio-economic factors that most influence the use of smartphones in rural areas and demographic factor are not significant to the adoption of smartphones.

## ABSTRAK

*Pada masa kini, dalam era teknologi komunikasi adalah penting telefon bimbit apabila teknologi yang boleh menghubungkan antara satu sama lain tidak kira orang-orang tua atau orang muda dan sesuai untuk semua orang. Telefon mudah alih seperti telefon bimbit boleh membuat panggilan dan SMS sahaja dan telefon bimbit telah menambah fungsi untuk melayari internet atau dipanggil telefon pintar, di antara dua telefon mudah alih ini yang mana penduduk di kawasan luar bandar yang lebih suka menggunakannya. Jadi, tidak semua daripada mereka menggunakan telefon mudah alih yang boleh melayari internet tetapi masih mempunyai daripada mereka menggunakan telefon bimbit jenis lama. Ia juga dipengaruhi oleh factor-faktor lain yang mereka masih menggunakan telefon bimbit jenis lama dan penerimaan satu perkara yang baru. Matlamat penyelidikan ini ialah mengkaji faktor yang mempengaruhi penggunaan telefon pintar di kawasan luar bandar. Hal ini kerana penerimaan teknologi seperti telefon bimbit di bandar lebih cepat daripada di luar bandar terutama telefon pintar kerana berdasarkan penerimaan seseorang. Dalam kajian ini juga untuk melihat faktor yang paling mempengaruhi penggunaan telefon pintar seperti faktor demografi, faktor individu, pengaruh sosial, keadaan memudahkan, perkhidmatan teknologi dan sosio-ekonomi. Kajian ini terdiri daripada 206 responden yang tinggal di kawasan luar bandar dan yang dipilih secara rawak kerana penduduk di kawasan luar bandar yang lebih besar dan tidak terhad kepada orang ramai untuk menggunakan telefon bimbit sahaja. Sosio-ekonomi faktor yang paling mempengaruhi penggunaan telefon pintar di kawasan luar bandar dan faktor demografi kurang menjadi pilihan kepada penggunaan telefon pintar.*

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## CHAPTER 1

### INTRODUCTION

#### 1.1 Background of the study

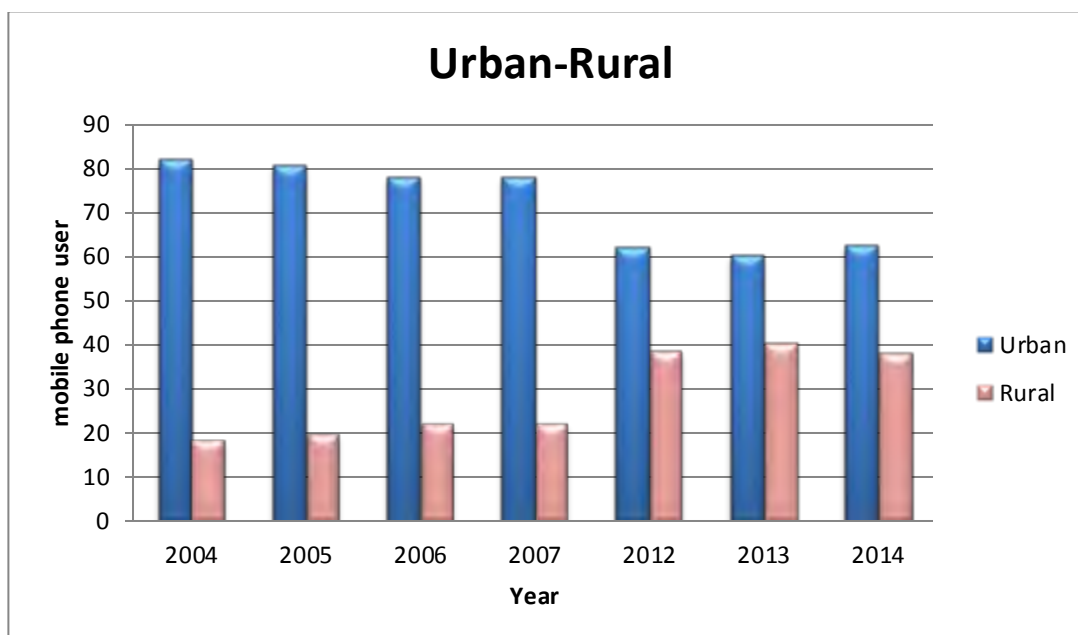
Mobile phone is a one important communication tool and has been adopted and reach the critical mass in Malaysia. Malaysian a using the mobile phone rather than the fixed line telephone as a way to keep in touch with their family, friends and colleagues. The mobile phone has shown its power for collective activities as well as on individual life. (Addo, 2013)

Before the mobile technology growing rapidly, communication used a fixed line for the communication that is connected at home and other premises. After several years the communication improved from the fixed line to mobile phone. The people be doing a communication not only at home but everywhere ubiquitously. The telecommunication starts with voice call and it improves to write a short message service (SMS).

Nowadays, the technologies being expanded widely especially in mobile communication. According to Kalba (2008), the mobile communication now is used globally the used of telecommunication developed from the traditional mobile communication to a smartphone (Ha, Kang, & Ha, 2015). According to Malaysian Communications and Multimedia Commission (MCMC), 2015, survey, Selangor has the largest mobile phone user and followed by Johor, WP Kuala Lumpur, Sabah, and Perak. It also found that it is a different in using a mobile phone between a rural area and urban cities about and the gap of mobile phone user in urban cities and rural



areas are narrowed as illustrated in Figure 1.1, that comparing the usage between urban-rural.



Source: MCMC, 2006,2007,2014

Figure 1.1: Distribution of mobile phone user by urban-rural

From Figure 1.1, shows the gap by using the mobile phone which is the urban easy to adopt a new technology such as be affected by an occupation and government policies also. In a rural area, the adoption a slow, maybe because they are not authenticated to advance technology. From 2012 until 2014, the gap between rural and urban getting closer and have enhancement. The aimed of the research is to study the adoption of Smartphone in a rural area where acceptance of mobile phone in a rural area is lower compared with urban cities.

The gap between the urban and rural area in usage the mobile phone is narrowed. So, in this research will investigate the relationship of factors influence and adoption of smartphone in the rural area. The adoption is affected by population, such as the people are staying in the rural area but working in the nearby town. In addition, the researchers are wondering about the most factor influence adoption of smartphone in rural areas an usage of mobile phone.

## 1.2 Problem Statement

Usage of the mobile phone in rural population still far compared with urban population, such as the technology a not easily to adapt by people in rural area. It's because the communities in there have a differentiated ages, knowledge, occupation that has influenced the adoption of the mobile phone. In addition, with a variety of ages as a group of children, adolescents, adults and the elderly, resulting in some of them difficult to accept new technology. For example, teenagers who easily adapt to new technology, but the ones their parents had a hard time and are difficult to adapt to new technologies such as mobile phones. The rural population is loyal users because they will use the same technology and difficult to change with different technology or where introduced a new technology.

On the other hand, urban-rural a narrowed on a usage of mobile phone which is the rural area a getting late accept about a technology such as mobile phones. It is because the income plays an important role to get a mobile phone, besides the mobile phone before became expensive such as the income of communities in the rural area a not big as urban cities and most of them work as self-employed.

The location of rural areas a distant from cities, one of the factors that rural area is late getting or used a new technology. Besides, people in the rural area a less access and lower usage level of digital technology to compare with the urban area. This causes, acceptance of rural population a bit slow and they difficult to adapt the technology. Therefore, there are many factors influences the adoption which is demographic, socio-economic and so on. The research areas focus on adoption of smartphone in rural areas at Perak.

### **1.3 Research Questions**

1. What factor influences the adoption of smartphone in rural area?
2. What factor that most influence the adoption of smartphone in rural area ?
3. What a relationship between factor influences and the adoption of smartphone in rural area?

### **1.4 Research Objective**

1. To explore the factors influence the adoption of smartphone in rural area.
2. To identify factor most influence the adoption of smartphone in rural area.
3. To determine a relationship between factor influences and the adoption of smartphone in rural area.

### **1.5 Scope**

The study of this research will be conducted in rural areas at Perak. This research a focus on factors influences the adoption of Smartphone. Otherwise, this research not only focuses on factors influences the adoption but also focus on most factors influence the adoption of smartphone and user acceptance the smartphone.

This research will be conducted at Kerian, Perak. Those the place a rural area which is the employment of the population are farmers and self-employed. The average Kerian annual population growth rate is 1.4 per year and area of Kerian is a 921.47 km<sup>2</sup>. The coordinates of Kerian in latitude 4.8988, longitude 100.5015.

## **1.6 Limitations and Key Assumptions**

### **1.6.1 Limitation**

The researcher assumes difficult to get the cooperation of respondents. It's because the getting information of respondents is hard because of they were difficult to give cooperation for answer the questionnaire because the research a conducted in rural areas. The rural area that consist of a variety of ages and background of the occupation. For example, the people at work as a farmer, never or not familiar doing the questionnaire, but a difference to people at work in government sector such as easier to give a cooperation. It is more challenging for researchers to conduct the respondents and get cooperation from them.

### **1.6.2 Key Assumption**

In this research, the researcher assumes the respondent has adequate knowledge be a part of respondent and the researcher assumes the respondent has more experience in handling this topic when he or she can give a justifiable answer. The researcher assumes a giving the questionnaire to the right person as respondent that can give a right answer. Besides, the researcher assumes the respondents do not give right answer because they a hurry to answer the question and not read the question properly.

## **1.7 Significant of study**

This study aimed the technology adoption of smartphone in rural areas at Perak. This research also to study the factors influence the adoption of smartphone and user acceptance. In addition, to identify the user acceptance of smartphone. The significance of the study is classified into three components such as the significance of the organization, the significance of the academic research and the significance of the rural population.

Firstly, the findings from this research are useful for organizations such as Malaysia Communications and Multimedia Commission (MCMC). It is because this organization is a better in the future, such as do a program that the rural area gets same technology, especially in mobile technology to narrow the gap between urban and rural area. In this case the gap between urban-rural about using the smartphone a bigger today. In the finding of the study a serve as a departing point for furthers researchers.

Secondly, the significance of research to the academic research is researcher gain a more knowledge about the technology and adoption of smartphone in rural areas. In addition, this research will be useful for further research in the future about the adoption of smartphone. Besides, researchers can also expose a communication skill while contributes a questioner interview to the people in rural area.

Thirdly, the significance of research to the rural population. In a rural area is they knew that mobile technology an important such as smartphone. In other words, rural population with a different background a can easily get and usage of smartphone without conscious brand. Besides, the rural populations on there may gain knowledge of technology such as mobile technology and know how to use it.

## **1.8 Summary**

This chapter gives an overview of studies involving the factors influence the adoption of smartphone. Based on the description as described in this chapter, researchers easier to understand this study. The statement also investigated the factors influence the adoption of smartphone in rural areas and user acceptance of smartphone in rural areas. This study also aims to the rural population in a rural area with a different background to investigate the factors influence the adoption of smartphone in a rural area.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

Review this chapter was selected journal article and the other related sources used in this chapter. This chapter also discusses the adoption of smartphone in rural areas. Besides, the relationship between factor influences and the adoption of smartphone in rural areas. Thus, this chapter will review all the discussion from another researcher.

#### 2.2 History of Mobile Phone

The theory of mobile phones was discovered in AT&T's Bell labs in 1970's. In 1980's, with the first generation (1G) set up with commercial deployment of innovative mobile phone service cellular networks and in 1990's, the second generation (2G) happened when mobile operators deployed two the digital voice standards (Mohamad, Building, & Ismail, 2014). The mobile phone has a global story in the feel that it has been developed or delay by national politics as much as engineering challenges, illustrated by the dissimilar ways in which third generation (3G) licences were traded in the UK, France, Germany, Sweden and the USA. In the 1940s, UK is the first country to introduced of mobile service and the US set out functioning a „highway service“ which is a proposing a radiotelephone services

between New York and Boston in the year 1947 (H Lacohee, N Wakeford, & I Pearson, 2003).

However, in Malaysia a mobile phone service began with only one service provider in year 1980s, which then increased to seven by mid years 1990s due to government policies (Said, Adham, & Quoquab, 2013). Mobile phones first come out in Malaysia in year 1998 and the first generation of the mobile phone was established with basic features such as a voice call.

The first cellular network was prefaced by Telekom Malaysia in 1985, based on Nordic Mobile Telephone (NMT) 450. NMT is a first generation analog cell phone system. In the middle of 1990, Malaysia assumed the three different of 2G mobile network standards which two of them were European-based, namely Global System for Mobile Telecommunications (GSM900) and Personal Communications Networks (PCN1800). The other 2G mobile network is an American-based standard namely Time Division Multiple Access (TDMA). TDMA was technology used in digital cellular telephone (Osman, Talib, & Sanusi, 2012).

According to Malaysian Communications And Multimedia Commission (MCMC), 2015, the statistic expressed the mobile phone user in Malaysia from 2009 until 2014 by a percentage which is Selangor has the highest percentages of mobile phone user. Table 2.1 showed the statistic of mobile phone user in Malaysia by state.

Table 2.1: Percentage distribution of mobile phone user by usual state

State	2009	2010	2011	2012	2013	2014
Johor	12.6	11.2	11.7	11.6	11.5	12.7
Kedah	6.5	7.0	6.4	6.2	6.5	5.7
Kelantan	5.1	4.2	4.8	4.6	5.0	4.6
Melaka	3.3	3.0	3.9	3.2	2.3	3.2
Negeri Sembilan	4.1	4.5	4.5	4.0	4.2	3.8
Pahang	4.9	4.7	3.9	5.5	4.8	5.5
Perak	8.9	8.0	8.2	7.2	7.0	8.5
Perlis	1.0	0.7	0.8	0.9	0.7	0.6

Pulau Pinang	6.2	6.0	5.5	6.0	6.2	5.5
Selangor	19.0	21.2	20.4	22.8	22.1	20.9
Terengganu	3.3	3.4	3.7	3.8	3.7	4.1
Sabah	8.7	9.0	7.9	7.8	9.0	8.6
Sarawak	6.5	5.6	6.6	7.0	7.3	6.8
WP Kuala Lumpur	9.5	10.8	11.0	9.1	9.4	8.9
WP Putrajaya	0.1	0.2	0.4	0.2	0.2	0.4
WP Labuan	0.3	0.2	0.3	0.2	0.2	0.4

Source: MCMC, 2015

In 2014, the urban city has the highest of mobile phone user which is 62.3% and rural area a taped 37.7% only. According to Malaysian Communications and Multimedia Commission (MCMC), 2006, the urban-rural gap a narrowed, but difference of mobile phone user in urban-rural a far it. The statistic also showed the division of mobile phone user in urban cities and rural area. It is shown in Table 2.2.

Table 2.2: Percentage distribution of mobile phone user by rural-urban

Sector	Percentage share of hand phone subscriber base		
	2004	2005	2006
Urban	81.9	80.5	78.0
Rural	18.1	19.5	22.0

Source: MCMC, 2007

## 2.3 Technology Adoption

### 2.3.1 Key Term/ Definition

#### 2.3.1.1 Technology

According to Isman (2012), the technology is a clan intensity of part dissembles of technology a fleshly artefact such as machines, electronic well-ordered, metal goods, and keeping motility systems. Technology also can classify as