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Perceptions of Smartphone Use in Information Search by Rural Communities in Sarawak

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Abstract

People living in the interior or rural areas are synonymous with poor living. Although there is development being done for this area, it is still unable to attract the people of this area from the valley of scarcity. The government has taken steps to bridge the digital divide in Malaysia, but the rural community is still facing low-speed internet network problems and the local community with low education levels will face limited digital literacy experience and far from technology. This study aims to evaluate the perceived usefulness and perceived ease to use of smartphones in the search for information and their relationship to the actual use of smartphones in the search for information by rural communities. This study uses quantitative methods using questionnaire to obtain the data. The survey respondents involved 254 people from the Lubok Antu Sarawak district. The results show that there is a significant relationship between the perceived usefulness and the perceived easy-to-use of smartphones in the search for information with the actual use of smartphones in the search for information by the rural community. It is hoped that this study will help the government understand the digital divide that exists between urban and rural areas. At the same time, this study proposes that more training on smartphone use be provided to the community and authorities on the rise of internet networks in the study area.

Keywords: Perceptions, Smartphone, Use in Information Search, Rural Communities, Sarawak

Introduction

The level of convenience and quality of life in the community such as water, roads, supplies, and so on is lacking. According to Salleh and Mansur (2020), rural areas are less developed than urban areas. This has left rural areas behind in the modernization provided by the

government. Considering these shortcomings, the authorities are responsible for developing rural areas in terms of technology by upgrading the Internet network locally and for the state of Sarawak in particular. According to former the Prime Minister of Malaysia, Datuk Seri Ismail Sabri Yaakob said the federal government allocated RM4.09 billion involving the construction of 823 new towers, upgrading 3,012 fiber transmitting and construction stations at 73,588 premises throughout Sarawak under the National Digital Braking Plan (JENDELA) Phase I (Sarawak, 2020). Furthermore, Information and Communication Technology (ICT) is particularly important in rural areas as it can enhance local development. This is because the use of ICT will enhance the development of rural areas as each transaction or access can be done at the fingertips (Pitchan, 2017). In addition, access to Internet facilities is considered an important requirement of the community to remain digitally connected, especially when the pandemic hits (Kementeriaan Komunikasi & Multimedia Malaysia, 2021). So, distance and boundaries will not prevent people from keeping in touch with each other.

The study was conducted in a rural area of Lubok Antu District, one of the districts within the Sri Aman Division, Sarawak. Although the area has Internet networks, the community is still facing low-speed internet network problems. According to Ramdas & Rassiah (2021), rural people often face weak Internet access, and this makes it difficult to use internet facilities in rural areas. This problem creates difficulties in connecting with others and many things are affected. Therefore, residents prefer to use regular cell phones. Such phones will help them communicate more easily with others at a time. Nowadays, it is demanding the use of digital tools especially smartphones in the past. Chief Minister of Sarawak, Datuk Patinggi Abang Johari Tun Openg in his speech is very concerned with digital technology and intends to bring Sarawak towards the digital economy (Suara Sarawak, 2020). One of his efforts was through the use of the *Sarawak Pay* app which made it easier for people to buy cashless and equipped with billing facilities and more. Besides, local communities with low education levels will face limited digital literacy experiences and are far from technology. These groups need the help and support of the Government and Non-Governmental Organizations to raise awareness of the importance of technology and to help them understand technology and skills to use technologies such as smartphones. This is because they also need the support of the people around them (Kamarudin & Omar, 2021). In addition, the use of technology in these interior areas will assist the government's efforts to develop the area as an effort to bridge the existing digital divide. Therefore, this study aims to evaluate the perceived usefulness and perceived ease to use of smartphones in the search for information and their relationship to the actual use of smartphones in the search for information by rural communities.

Literature Review

Rural Communities

According to the definition by the Bahasa & Pustaka (2017), society is a group of people living together in one place with the same culture and way of life. Meanwhile, rural areas are a place far from urban areas (Bahasa & Pustaka, 2017). In short, the rural community is a resident of areas far from modernity. The people in this area are lacking in all aspects including economic, social, and technological aspects. This has left rural areas behind in the modernization provided by the government. This creates a digital divide between urban and rural areas. Therefore, the government is responsible for developing rural areas in the technological aspect by upgrading the internet network in rural areas, especially in Sarawak. One of the development policies that the government wants to strengthen is to improve the rural community's access to ICT and new technologies and improve farming practices.

Information and Communication Technology (ICT)

ICT is now an important element of human life. It is a modern technology that will facilitate all matters of transmission and receipt of information. It is an Internet-based, electronic device and other devices that can store or disseminate data and information, a medium of communication for all. Kariki et al (2017) mention the ICT emerged as one of the mediums to deliver a wide variety of types of information for different purposes in various aspects of human life such as economic, political, social, cultural, and national security defence. Over time, ICT has been refurbished and turned to the needs of consumers who now rely on technology to compete with the world for an advanced living. Users want software, hardware, and computer skills that match their computer lab requirements (Abd Rahman et al., 2017). At the same time, users want an easy-to-use device to make things easier, but they can perform functions like a computer for work, learning, and others are not affected. Therefore, with the change of time, devices such as smartphones are very useful to society as they can be carried anywhere and access all information with their fingertips only.

Use of Smartphones in Rural Areas

In this modern age, the use of smartphones is increasing as technology is increasingly sophisticated. Plus, it's small and easy to carry. With a smartphone, everyone can quickly and easily accept, find, or explore everything that happens in the country. This will increase the level of community dependence on smartphones as technology is something that benefits people (Marpaung, 2018). There are a few purposes for the use of smartphones in this area including communication, entertainment, news, or current information in the country especially information on national health development and things provided to the people by the authorities and national policies. People use smartphones as a primary medium of communication. This message service application not only facilitates the sharing of information between users, but it is cost-effective because users only need internet lines to connect to phone calls and SMS that are charged (Shamsuddin, 2019). In addition, smartphones are also used for entertainment purposes such as social networks (Facebook, Instagram), watching videos like YouTube, and listening to music. When they have some space to rest, they will use it to entertain themselves with social media, music, and something relaxing. Based on Malaysia Gazette (2017), the internet usage increased to 80 percent in 2016, and this year 89.3 percent and Facebook social sites are the most popular. It is clear that many people take the time to browse Facebook when they have free time.

Besides, in the current situation, news, or current information in the country, especially information on national health development and things provided to the people by the authorities and national policies also some major search. The public is curious about COVID – 19, the situation of the country's economy, and others. Although television and radio are more widely used, smartphones are also used as they are an important medium for communication, easy to use, and fast. Social media users have increased by 8 percent since April 2019 to 3.81 billion by April 2020 (Nortajuddin, 2020). The Ministry of Health of Malaysia together with the Government relies heavily on technology as an intermediary to provide current information and news to the entire population. There are many health websites that provide a wealth of information and knowledge about health including the COVID19. Therefore, smartphones are very important for the learning process especially online (Ferri et al., 2020). However, in that case, the public must be careful not to be impressed by any news and fake information on the internet. At the same time, smartphones are used by the authorities to help people. According to Jasni et al (2020), one of the communication

strategies is through the WhatsApp application. This happened during the MCO when the government distributed some groceries to the longhouse communities. They communicate with the communities through the WhatsApp application in advance so that they are aware of it.

Digital Divide

Digital divide means gaps or widening among those who have the ability to gain from the point of digital ownership and digital use skills with those who do not have such ability (Ayob et al., 2021). Technology creates a difference in developing people's opportunities, thus creating a distance between those who have access to technology and those who do not have the opportunity. This is due to many situations as it is influenced by the level of development in a country. It can be a digital divide between urban and rural areas or rich people with poor people. It is because developments in technology require good software, and this will affect an individual's economy. It depends on one's economic ability. According to the Suruhanjaya Komunikasi and Multimedia Malaysia (2020), rural people using the internet make up 24.4 percent while urban residents use the internet 75.6 percent. This is due to some reasons including the lack of ICT equipment, and the lack of skills in using advanced technology, and there are some problems such as forgetting the password that will be causing them to not be able to access their smartphones. This digital divide will always remain because it does not only occur in rural areas, but it also exists among the people living in the suburbs due to factors such as rising internet subscriptions and the smartphone price market rising sharply especially during relatively poor economic conditions during this pandemic. Therefore, the government needs to implement a mechanism in addressing this level of the digital divide in more detail so that the sustainability of development in the digital world can be done (van Dijk, 2017; van Deursen & van Dijk, 2019;). Furthermore, when global issues such as pandemics hit, things changed because the use of digital technologies such as devices and mobile software was needed, especially when the Movement Control Order (MCO) (Sawal, 2020). Smartphones are no longer a requirement, but it is a necessity in human life. Although in rural communities it is a passion for learning new technologies, they cannot afford to ignore this need because it is the main weapon for living in the new millennium, especially among young people.

Technology Acceptance Model (TAM)

In general, the theory is a concept that helps us understand an incident. In 1986, Jonathan H. Turner mention the theory is a process of developing ideas that will help explain how and why something happened. The Technology Acceptance Model Theory (TAM) was introduced by Fred Davis in 1986. This model is based on the theory of social psychology in general and the Theory of Reasoning (TRA) in particular (Fishbein & Azjen, 1975). Theory of Reasoning (TRA) is a theory that emphasizes that belief influences attitudes, which leads to intention and therefore creates behaviour. Davis (1986, 1989) introduced the structure in the original TAM in response to the use of (PU), easy-to-use response (PEOU), attitude, and behavioural intent to use. In other words, this theory shows that consumers accept and use technology in their daily lives and at the same time, it will affect the behavior of consumers. According to Almasri (2014), TAM is an acceptable model and has been used in many areas of information technology and information systems such as e-learning, World-Wide-Web, online auctions, introduction to Radio Frequency (RFID), e-portfolio systems, wireless LAN, E-government, E-commerce, internet banking, and mobile learning. Undeniably, ICT facilitates everyone's life

despite the distance. In recent years, everyone has accepted that ICT is important in enabling all work or things to go smoothly and well (Mugo, 2014). In areas such as Lubok Antu, the role of technology in smartphones facilitates people's lives in carrying out their work as farmers, government or private staff, and students. With this theory, technology in the country will surely thrive in line with technological advances in other countries. So far, the model has been good enough in the research of existing interests and technologies (Pamuji, 2020).

The Perceived Usefulness, Perceived Ease of Use of Smartphones, and Actual Use of Smartphones

Davis (1989) mention that TAM theory in the Figure 1 has two main things: perceived usefulness and perceived easy-to-use. Perceived usefulness is when consumers believe in and use technologies such as smartphones in their daily activities and consumers believe in technology and consider it to be easy to use without any problems. Mugo et al (2017), mention that the perceived usefulness is the ability for teachers to communicate online using a variety of platforms to comment online with students. It is clear that technology is able to help the community stay in touch even in rural areas far from modern. Meanwhile, the perceived easy-to-use reflects the technology as it does not require users to take time to learn to use it. This will make the community easier as the new release smartphone now has operating systems like Android. These two key pillars of TAM theory will also lead to a pattern of consumer attitudes toward technology. Mugo et al (2017) also mentions that consumer attitudes toward the use of technology are an important element in determining technology acceptance. Technology is accepted because it is easy to do many things but if it is difficult to understand especially older people who do not understand technology, so technologies like smartphones are not easily accepted. Instead, they prefer cell phones.

Originally, smartphones were used for communication purposes such as making calls and sending short messages to others but now smartphones have a lot of functions. According to Davies (2015), there are 81 percent of Americans with smartphones throughout the day and spend more time with electronic devices such as smartphones and laptops (8 hours 41 minutes) than sleep (8 hours 21 minutes) (David et al., 2018). The average use of smartphones is increasing as people of all ages use smartphones to find and collect information for educational, entertainment, news, and other – uses. Higher education students spend time with smartphones eight hours a day, female students spend 10 hours a day and 3 hours of it is on social media (David et al., 2018).

This shows that smartphones have become friends with the community. The concept of always being online can be stressful even though it allows us to respond to others at fast time even when we are (McDaniel 2015; David et al., 2018). Smartphones are useful in life, especially in the process of finding, collecting, and analyzing data or information, but their use is often controlled so that it is not a burden but a convenience to the public in this modern age because the excessive use of smartphones will have a negative impact on sleep Lanaj et al (2012), stressing (Vahedi et al.,2018; van & Mohr, 2020).

Theoretical Framework

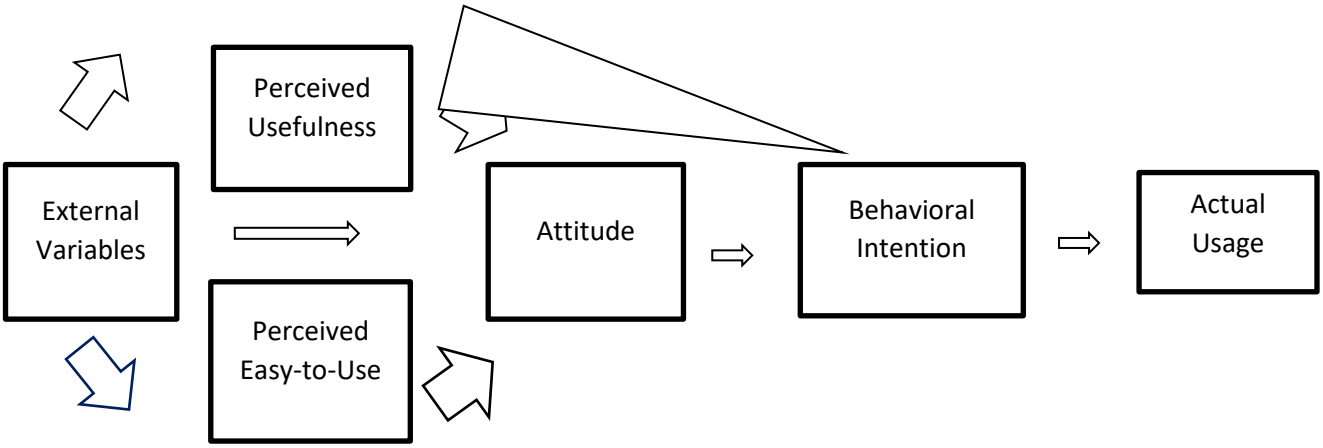

Figure 1: Theoretical Framework (TAM Model)

The theoretical framework in this study used TAM model as a theoretical framework. Based on this theory independence variable are perceived usefulness and perceived easy-to-use. Meanwhile, the dependent variables are actual usage.

Conceptual Framework Study

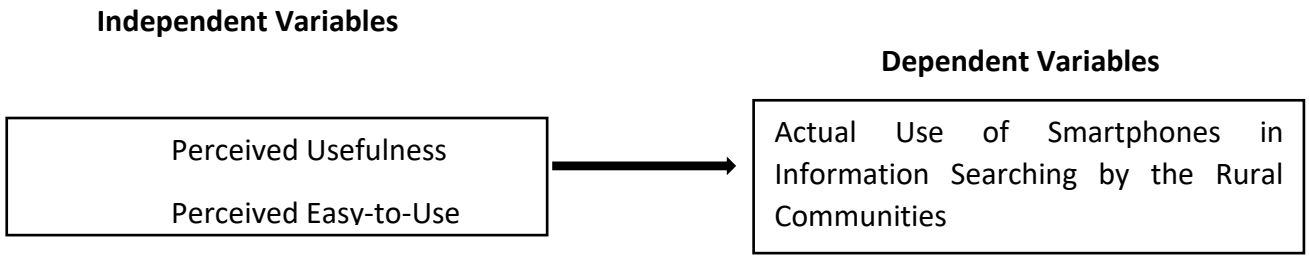

Figure 2: Conceptual Framework Study

Methodology

Research Design

This study conducted the quantitative method using the questionnaires to obtain the data. This study also uses a purposive sampling method. Purposive sampling is a sample selected based on population characteristics and study objectives. In this study, respondents will be selected based on two key features of the community aged 18 and above and with a smartphone.

Study Location

This study has been conducted in Lubok Antu, a district in the Sarawak interior. The selection of this location is because the district is still experiencing shortages and aspects of developers including technology. According to data released on the official Sarawak state government portal for population census data by 2020, the population of Sri Aman is 78,300 and the population of Lubok Antu is 33,100 and overall, there are 241 long houses in the area.

Population and Sample Size

This study involved a long-term community in the Lubok Antu District. There are two hundred and forty-one long houses registered under this district of which 33,100 people are in total. The sample for the study is selected among the communities from long houses that have Internet networks. The main characteristics of the respondents were that they were from a community of smartphones and aged 18 years old and above. Of all the long houses, there are only 37 long homes with stable Internet networks. Of the 37 long houses, only six long houses were selected because the area was easier to visit, and samples of this study taken from six long houses with stable Internet networks. Based on the Table 1, this study consists of 254 respondence.

Table 1
List of Long Homes with Stable Internet Networks

Number	Heads / Leadership	Area	Population		Suggested Size
			Families	Residents	Respondent
1	Ngilah Anak Ela	Bara, Lubok Antu	55	168	57
2	Sambon Ak Joseph Jampang	Nanga Kesit Ulu	26	125	43
3	Tindit Ak. Ran	Nanga Kesit, Lemanak	21	114	39
4	Edat Ak. Intan	Lubok Subong	21	80	27
5	Empaok Ak Brinau	Lubok Subong Ulu	35	201	69
6	Ngali Anak Lingoh	Wong Pandak	27	57	19
Total			**185**	**740**	**254**

Finding and Discussion

Demographic

Table 2 is a demographic distribution of the community involved as respondents of studies involving age, gender, marital status, level of education, and type of employment. Respondents of 254 people were adults 18 and older in the Lubok Antu Sarawak district. The results showed that 27.6% of respondents were 58 years old and above, 25.6% were between the ages of 18 and 27, followed by respondents aged 48 to 57 with a total of 19.7%, respondents aged 38 to 47 with 15.4% and 11.8% are 28 to 37 years old. The majority of respondents were men of 128 (50.4%) and women 126 (49.6%). As a result of this study, there was more than half the number of married respondents 153 (60.2%) while single-status respondents 77 (30.3%). In addition, for widows, each recorded a total of 12 respondents (4.7%). In addition, it was found that most respondents were from primary school education groups with a total of 98 people (38.6%), with secondary education of 83 people (32.7%), while 64-year-old respondents (25.2%) and the uneducated group were 9 (3.5%). For the job aspect, most respondents were farmers with a total of 83 people (32.7%) because agriculture was a major self-serving activity in the study area. In addition, respondents also own their own businesses, 70 respondents (27.6%). At the same time, respondents comprising the non-working group were 60 (23.6%). This group is largely made up of students and the elderly.

Subsequently, the respondents were made up of 28 government workers (11%) and respondents working in the private sector with 13 people (5.1%).

Table 2
Demographic Distribution (n=254)

Characteristics	Respondent	Number	Percent (%)
Age	18 – 27	65	25.6
	28 – 37	30	11.8
	38 – 47	39	15.4
	48 – 57	50	19.7
	58 ≥	70	**27.6**
Gender	Male	128	**50.4**
	Female	126	49.6
Martial Status	Single	77	30.3
	Married	153	**60.2**
	Single Father	12	4.7
	Single Mother	12	4.7
Education Level	Primary School	98	**38.4**
	Secondary School	83	32.7
	University / College	64	25.2
	Others	9	3.5
Types of Job	Not Working	60	23.6
	Business	70	27.6
	Government Worker	28	11.0
	Private Sector	13	5.1
	Farmer	83	**32.7**

Perceived Usefulness of Smartphone

The results show in the Table 3 that smartphones are useful as the main medium in the process of finding information for the public with a mean score (of M=4.60, SD=0.73). This is followed by an increase in the effectiveness of searching for information using smartphones (M=4.58, SD=0.80). In addition, improved performance, and skills to find information using smartphones (M=4.56, SD=0.81) and help increase productivity in the search for domestic and foreign information (M=4.42, SD=0.81), and using a smartphone speeds up the information search process (M=4.40, SP=0.80), and smartphones facilitate better information search.

Table 3
Perceived Usefulness

Statement	Mean	Standard Deviation
Smartphones will help improve my effectiveness in finding the information I need.	**4.58**	**0.80**
Smartphones will make it easier for me to find information better.	4.31	0.78
Smartphones will allow my information search process to go faster.	4.40	0.80
Smartphones will help me increase productivity in the search for information locally and abroad.	4.42	0.81
Smartphones will help me improve my performance and skills in finding information online.	4.56	0.81
Overall, smartphones are very useful as a key medium in the process of finding information to the public.	**4.60**	**0.73**

Note:1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

It is found that the public considers smartphones to be very useful in their lives and enhances the effectiveness of the information search process at one time (M=4.58, SD=0.80). According to a study conducted by the Malaysian Communications and Multimedia Commission in 2010 (referenced as SKMM, 2020), there has been a notable rise in the number of Internet users in two distinct regions. This growth can be attributed to the increasing usage of smartphones in people's daily lives. As smartphones become more prevalent, individuals in these regions are able to access the internet and utilize various online services more easily.

The development of technology within these regions holds significant importance as it empowers the local population to access information and communicate with others efficiently. With the help of smartphones and internet connectivity, people in these areas can stay connected, obtain valuable information, and engage in digital communication with others.

As a result, smartphones have become essential tools for individuals residing in these regions, as they enable a better quality of life by offering access to a wide range of resources and opportunities available on the internet. The increased connectivity provided by smartphones allows individuals to stay informed, engage in online services, and connect with others, ultimately contributing to their overall well-being and enhancing their daily experiences.

Perceived Easy-to-Use of Smartphone

The results show in the Table 4 the smartphones are easy to use (M=4.60, SD=0.76). In addition, the skills in using smartphones increased (M=4.53, SD=0.77). Followed by the smartphone facilitates the (M=4.50, SD=0.80). In addition, interactions with clear and easy-to-understand phones (M=4.31, SD=0.79) and smartphones are flexible (M=4.26, SP=0.81) and smartphones make it easy to find information (M 4.2, SD=0.85).

Table 4
Perceived Easy-to-Use Smartphone

Statement	Mean	Standard Deviation
I find it easier to do what I want to do when using a smartphone.	4.50	0.80
I find that smartphones are flexible enough to interact when used to access a variety of information online.	4.26	0.81
My interactions with smartphones are clear and understandable especially when I look for the information I need.	4.31	0.79
Learning to use a smartphone is easy for me in finding the information I need at a time.	4.24	0.85
I become easy to use with my smartphone when looking for information	**4.53**	**0.77**
Overall, I found that smartphones are easy to use.	**4.60**	**0.76**

Note:1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

The development of technology implemented in rural areas will facilitate the affairs of the community involving ICT and this development will help increase the public's courage to use technology devices (Pitchan et al., 2021). Park and Chen (2007) seeks human motivation that influences the use of smartphones among medical doctors and nurses and investigates the perception of smartphone users who are considered to be under the self-efficacy technology acceptance model (TAM) and the nature of innovation that leads to the use of smartphones.

Actual Use of Smartphone

The results show in the Table 5 the smartphones are used for multimedia purposes (M= 4.49, SD=0.91). Additionally, smartphones are used for the purpose of accessing various applications (M=4.27, SD=0.89). Following, smartphones are used to open (M=3.65, SD=1.12) and smartphones are useful for accessing important information only (M=2.45, SD=1.36).

It is noted that smartphones are used to access a wide range of information, especially entertainment or multimedia information and other information, and a variety of applications that are useful to the community. In previous studies, the use of smartphones for entertainment was higher than the purpose of schooling. Social media sites have become half of the young people's lives (Sannusi et al., 2019).

Table 5
Actual Use of Smartphone

Statement	Mean	Standard Deviation
I use my smartphone only to access and find important information	3.45	1.36
I use my smartphone to access social media which serves as an information search medium and opens an email.	3.65	1.12
I use my smartphone to access various applications to find useful information.	4.27	0.89
I use my smartphone for multimedia purposes to find information such as pictures, music, or videos needed for entertainment.	4.49	0.91

Note:1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Based on the Table 6 shows the relationship and relationship between the perceived usefulness of smartphones and the perceived easy-to-use of smartphones with dependent variables, the actual use of smartphones in the search for information.

Table 6
Relationship between the perceived usefulness of smartphones and the perceived easy-to-use of smartphones with dependent variables

Independent Variables	r	p
Perceived of Usefulness	0.603	0.001*
Perceived Easy-to-Use	0.548	0.001*

* Significant at level 0.01

The correlation results between the actual use of the smartphone in the search for information with the perceived usefulness of smartphone use (r=0.063) show a value of R-value significant at 0.01 (2-tailed) with a value (p =<.001). The results show that all values of collusion are positive. In addition, the collusion between the actual use of smartphones in the search for information with the easy-to-use response of smartphones (r=0.548) and significance at values (p<0.001). Obviously here shows that the relationship that exists is strong.

Based on the TAM theory used in this study, the benefits of smartphones in people's lives are to help them perform daily activities quickly despite the limitations and distances. Through this, technology has proven to facilitate users in line with the goals and requirements of individuals when accessing the internet.

Conclusion

This study was conducted to explore the use of smartphones in the search for information by rural communities in the Lubok Antu district of Sarawak. The results show that the use of smartphones in the process of searching for information by rural communities in various aspects including the perceived usefulness of smartphones, the perceived easy-to-use of smartphones, and the actual use of smartphones. From the analysis, smartphones have

helped the public as a medium to find information quickly, especially in today's modern-day situations, especially accessing entertainment and government information. Clearly, technology through devices such as smartphones plays a major role in human life. The correlation values obtained also show a significant relationship between the perceived usefulness of smartphones and the perceived easy-to-use of smartphones with the actual use of smartphones in the search for information by rural communities in Sarawak. Therefore, all parties must work together to create sustainable development of technology in rural areas.

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