The Use of Messaging Applications among University Students: A Case at Universiti Kebangsaan Malaysia

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Abstract

Since the introduction of smart phones in 1995 by IBM, more and more applications for communication have been created as the medium to transmit messages and fulfill various needs of Android/iOS users. Most of messaging applications are free of charge and user-friendly as they support the functions of sending or receiving various types of file. This paper reports on a case study on the use of the most trending and active user messaging apps worldwide, e.g. WhatsApp, Facebook Messenger, and WeChat. WhatsApp, among university students at Universiti Kebangsaan Malaysia (UKM). Data for this study were gathered through the questionnaire distributed to sixty respondents. Findings of this study reveal that majority of the respondents use WhatsApp the most to send and receive messages. Most of them agree that they utilize messaging apps for chatting and discussing group assignments. A large portion of the students agrees that they use slang or abbreviation in messaging apps. 50% of the respondents agree that they received false news or fraud message in messaging apps. Most of the respondents agree that they carry out some research on Google to recognize false news. Most of the respondents agree that they feel negative emotion when waiting for a reply in a very long time. Real time chatting and sending message at no cost are the main reasons for choosing messaging apps. Receiving false news and redundant messages are the major drawbacks of messaging apps perceived by the respondents. In general, most of the respondents agree that the technology of messaging apps bring more advantages than disadvantages to general users**.**

Index Terms: Messaging applications; WeChat; WhatsApp; Facebook Messenger; University students

I. INTRODUCTION

Since the first smart phone, known as Simon Personal Communicator, was created by IBM in 1995, the industry of mobile messaging apps has extensively accelerated with new designs, diverse specialties and benefits to attract users [1]. Many messaging apps offer features such as video calls, emoticon stickers, group chats, audio messages and images exchanges. The low-cost, free chat and social messaging apps have become the essential needs of human communication and that most people rely on these apps as their main means of communication especially in regards to text messaging. The Digital News Report 2017 disclosed that most internet users (a total of 51%) in Malaysia utilize the world's largest messaging applications, WhatsApp, to share information and stories. The report also stated that other popular social media in Malaysia includes Facebook, with a total of 58% users while YouTube (26 %) and 13% respectively for WeChat and Instagram.

The most employed messaging apps worldwide, WhatsApp was founded in 2009 by the former workers of Yahoo!. WhatsApp was substituted from a free to paid service to avoid from growing too fast, mainly because the primary cost was sending verification texts to users. In December 2009, the ability to send photos was added to

WhatsApp for the iPhone. By early 2011, WhatsApp was one of the top 20 apps in Apple's U.S. App Store.

Similar to WhatsApp, other popular messaging apps include China's WeChat and QQ Messenger, Viber, Line, Snapchat, Korea's KakaoTalk, Google Hangouts, Blackberry Messenger, and Vietnam's Zalo [2]. Slack focuses on messaging and file sharing for work teams. Some social networking services offer messaging services as a component of their overall platform, such as Facebook's Facebook Messenger, along with Instagram and Twitter's direct messaging functions.

Communicating with others is essential in our daily life, thus, owning a smart phone with messaging function has becoming our necessity. A fast internet service, availability of internet regardless of time and space and the unlimited accessibility to internet content are the most indispensable characteristics and functions of internet that general users look for [3] [4]. We can share information with one or many people simultaneously with modern technology nowadays. Nevertheless, it is contended that less control over the use of messaging apps could bring a harmful impact to human life. Researchers have found some negative impacts on youth which adversely affect their behavior, routine lives and education. It was reported that messaging apps reduce many students' learning time as well as limiting their communicative abilities. This is because of their frequent use of grammatically incorrect sentences and 'short-

form' words or acronyms such as "lol" (laugh out loud), "tc" (take care), "pls (please)" and "dm, pm" (direct message, private massage") when writing their messages. Moreover, chatting apps have been found to be highly addictive and difficult to control. Some of these apps users have given up on their real world interest as they constantly chat and share ideas regardless of the duration of times. It seems that their happiness or sadness depends on replying and receiving messages from other users.[14]

In line with the above-mentioned scenario, a case study was carried out to investigate the use of messaging apps amongst tertiary students and the effects of this technology to their life. For the purpose of this study, sixty students from Universiti Kebangsaan Malaysia (UKM) were selected as respondents. Data were collected through a questionnaire which was created using a Google Form and distributed to the respondents. The students' background, gender and their faculty are not taken into account as these factors will not affect the result of the research. The internet is also employed to search additional information that are related to this research.

II. TYPES OF MESSAGING APPS

There are many types of messaging available in the apps market nowadays. The evolution of smart phone and messaging technology makes the function of messaging become universally available with no cost. Everyone around the world can be connected on the fingertip in just a second.

A. WhatsApp

WhatsApp originated from the acronym "what's up". It is free and easy to use with low internet data usage. WhatsApp is undoubtedly the most downloaded messenger apps utilized by almost 1.2 billion users monthly worldwide. This cross-platform and voice over IP (VoIP) application allows users to do text messages, voice calls, video calls, group chats and exchange images, audios and many more services [5]. In its attempt to make the apps more compatible for various occasions, WhatsApp has announced the creation of WhatsApp business, a platform for companies to provide services to their customers more efficiently. In regards to WhatsApp use among tertiary students, it is found that WhatsApp groups is highly favored to serve several purposes mainly for communicating, creating dialogue and sharing among their fellow students as well as building a learning platform. These bring about a pleasant environment and an in-depth acquaintance amongst the students, which have a positive influence upon the manner of conversation. Interestingly, the simple operation scheme offered by WhatsApp makes the program accessible to everyone from a variety ages and backgrounds. WhatsApp can be viewed as a social network that allows people to become accessibly informative and effective. [15]

Fig. 1: WhatsApp logo

B. Facebook Messenger

Facebook Messenger or Messenger, which was initially introduced as Facebook Chat, is a platform to chat, send or receive media, play games, video chat provided by Facebook. Integrated with Facebook's web-based Chat feature and built on the open-source., Messenger allow Facebook users to chat with friends both on mobile and on the main website [6]. After going through a massive revamping on its services in 2010, the apps then launched a standalone platform of messenger apps in August 2011. After several few years of being an app of its own, Facebook Messenger gross numbers of users have rapidly increased and reached 1.2 billion in April 2017. Despite recent serious security issues, the Facebook Messenger users still persist, in fact, the numbers are still growing.

Nonetheless, one of the drawbacks of Messenger is its capacity to protect users' privacy. Part of the terms and conditions when using Facebook Messenger includes recording audio at any time without permission and calling phone numbers without intervention. Individuals with profiles information on social networking websites is more risky for taking attitudes exist among men than women.[16] Once launch on Facebook Messengers, it's is free and less course structure, and the build is to a single API. But it is multiplying of the social aspect and organized with Facebook Share action.

Fig. 2: Facebook Messenger logo.

C. Skype

Recently teamed with Microsoft, Skype is an app that deploys VoIP service, enabling its users to make and receive free voice and video calls via online [7]. Skype is the first app that allows user to make calls online without extra charges. With more than 500 million users worldwide, Skype has upgraded its services by adding instant messaging and video calls for conferencing to let people communicates in a group simultaneously. Nowadays, most people would appreciate the opportunity to communicate in real-time with their peers using the technology to connect with and support each on their learning journey [17]. Skype is used as one of the tools of telehealth that functions as a therapy for depression. Patients who are undergoing depression are sometimes engaged in treatments via Skype from their primary care physician's office.[18]

Fig.3: Skype logo.

D. WeChat

WeChat is the most important social media or network (SNS) apps in China. Developed by Tencent and officially launched in 2011, WeChat has significantly gained an overwhelming support among China's population [19]. Apart from its main function as messenger apps, users also choose WeChat to play games and interact with each other in Facebook-like social network. WeChat is also known as the "super app" by many due to its multi-functional platform like Symbian, Windows phone, Android and iOS [6]. Other features that can be found in WeChat are QR code scanner, Shake, Drift Bottle, Bills Payment and more. It is a mobile software [20] that can send text messages, voice messages, images, videos and location sharing quickly through the internet and it can support simultaneously chatting among a group of people [8]. Because of its varied features, WeChat has becoming a number one social network apps especially in the occasions like meeting new friends and clicking people nearby [21].

Fig. 4: WeChat logo.

III. TRENDING MESSAGE APPS

Although most messaging apps are readily available and free of charge, users mostly choose them by the functions and user-friendly features. The table and figure below illustrate the most popular

global mobile messenger apps as of April 2018, based on the number of monthly active users.

Table 1: Most popular messaging apps as of April 2018 [9]

Messaging apps	Monthly active users in millions
WhatsApp	1500
Facebook Messenger	1300
WeChat	1000
QQ Mobile	783
Skype	300
Viber	260
Snapchat	255
LINE	203
Telegram	200

Fig. 5: Most popular messaging apps as of April 2018 [9]

Table 1 and Figure 5 show significant differences between the monthly active users of different messaging apps [22]. WhatsApp obtains the highest number of monthly active users while Telegram gains the lowest monthly active users [23]. The difference of 1300 million users is very significant. Most of the users choose to use WhatsApp because the messages sent are encrypted and cannot be read by third parties during the transmission of messages. Facebook Messenger has the second most active user because there are many people using Facebook around the world and that they can chat with their friends easily [24].
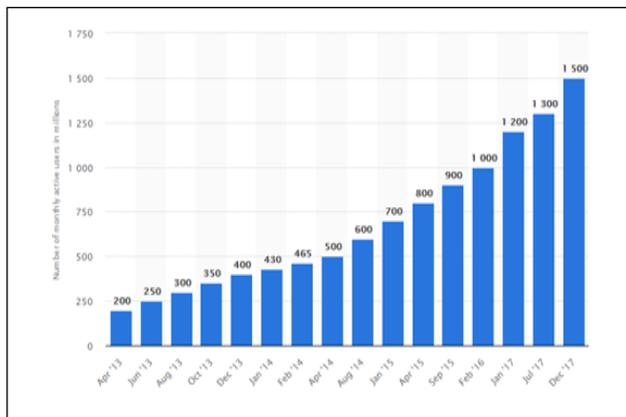

Fig. 6: Monthly active users of WhatsApp from 2013 to 2017 [10].

Figure 6 shows the monthly active users of WhatsApp from April 2013 to the end of 2017. By April 2013, the number of monthly active users is very low with only 200 million people. The number of users escalates as the popularity of WhatsApp increases. By the

year 2016, WhatsApp becomes completely free of charge with additional encryption feature. Hence, the active users continue to rise up to 1500 million people by the end of 2017.
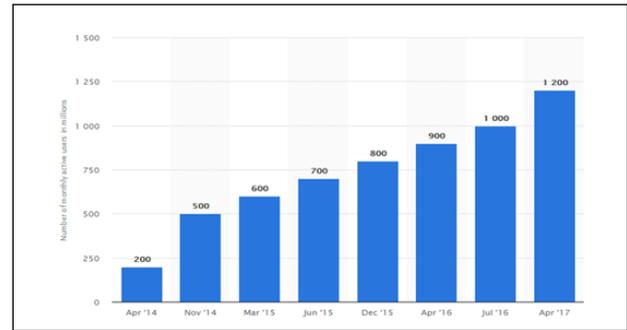

Fig. 7: Monthly active users of Facebook Messenger from 2014 to 2017 [11].

Figure 7 shows the monthly active users of Facebook Messenger from April 2014 to April 2017. This indicates the accelerating number of active users over years. In April 2014, Facebook Messenger has only 200 million users. The number steps up to 500 million users in November 2014. The highest number of active users, approximately 1200 million people, is found in April 2017. The gradual increase of users denotes the high preferences among teenagers and youth to create Facebook account and communicate with their friends via Facebook Messenger.

IV. DATA ANALYSIS

A case study was carried out to investigate the use of messaging apps amongst UKM students and the effects of this technology to their life. For this purpose, a set of questionnaire was created using Google Form and distributed to sixty respondents. Data gathered from the respondents were then tabulated and analyzed. These are presented below

Table 2: Number of user on different messaging apps.

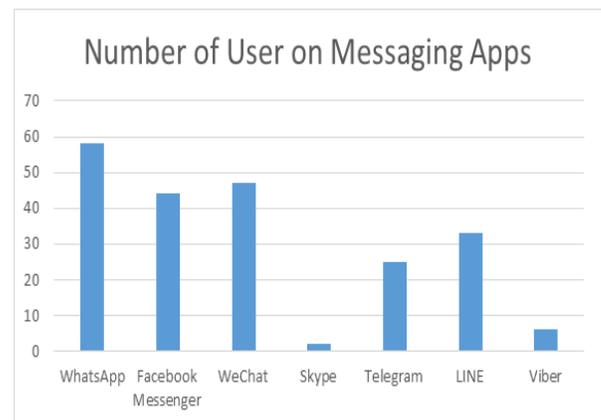| Messaging Apps	Number of user (people)
WhatsApp	58
Facebook Messenger	44
WeChat	47
Skype	2
Telegram	25
LINE	33
Viber	6

Fig. 8: Number of user on different messaging apps.

Table 2 and Figure 8 show the number of users of different messaging apps based on the 60 collated responses. WhatsApp gains the highest number of users, with a total of 58, while Skype has the lowest number, which is only 2 users. The second highest number of users is WeChat, with 47 people using it. According to the respondents, they choose WhatsApp because majority of their friends are using it and also due to its user-friendly features for group chatting.

Table 3: Messaging apps that users use the most frequent

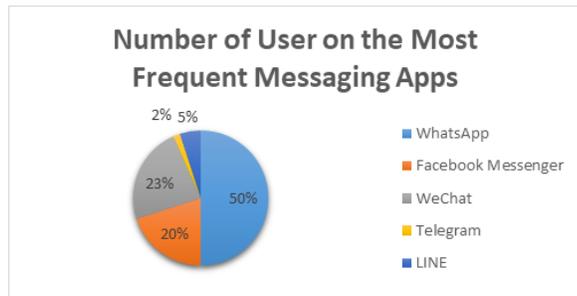| Messaging Apps	Number of user (people)
WhatsApp	30
Facebook Messenger	12
WeChat	14
Telegram	1
LINE	3

Fig. 9: Messaging apps that users use the most frequent

Table 3 and Figure 9 show the most frequently used messaging apps by the respondents. Similar to the above, WhatsApp is stated as the most frequently used apps among the respondents, which is 50% of the total respondents. This is followed by WeChat which obtained a total of 23% respondents. WhatsApp is the most frequently used messaging apps as stated by half of the respondents because it enables them to discuss and share information with their friends.

Table 4: The using frequency of messaging apps among respondents.

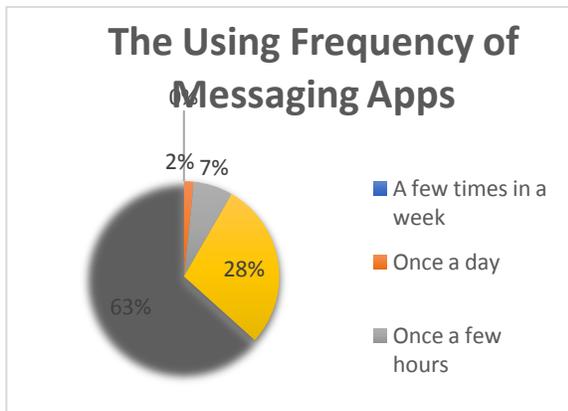| Using Frequency	Number of Respondent
A few times in a week	0
Once a day	1
Once a few hours	4
Once an hour	17
More than once in an hour	38

Fig. 10: The using frequency of messaging apps among respondents

Table 4 and Figure 10 show the using frequency of messaging apps among 60 respondents. It is clear that 38 people, 63% of the respondents, utilize messaging apps more than once in an hour

whilst 17 people or 28% of the respondents use messaging apps once an hour. This result proves that messaging apps play an important role in the respondents' daily life as they rely on the apps to communicate with their friends

Table 5: The purpose of using messaging apps

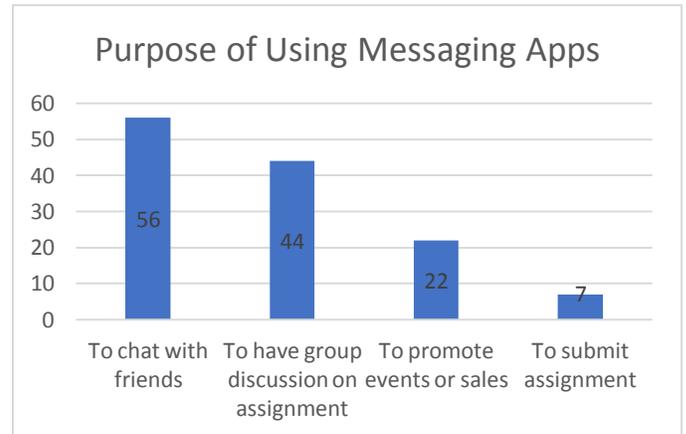| Purpose	Number of Respondent
To chat with friends	56
To have group discussion on assignment	44
To promote events or sales	22

Fig. 11: The purpose of using messaging apps.

Table 5 and Figure 11 illustrate the purpose of using messaging apps among the respondents. Approximately 56 respondents mark that their main purpose of using messaging apps is to chat with their friends. Next, 44 respondents use messaging apps for group discussion to complete their assignments and 22 respondents use the apps to promote events or sales. It seems that messaging apps also play an important role in promoting and attracting audience for events. The least number of respondents, 7 of them, deploy messaging apps to submit assignment especially in tutorial classes that carry out small project.

Table 6: Respondents using slang or abbreviation in messaging apps

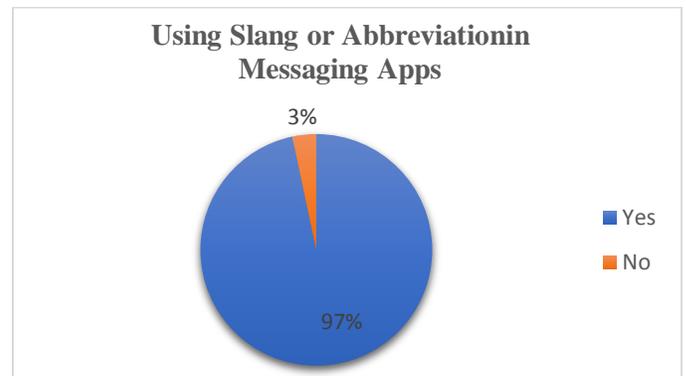| Using Slang in Messaging Apps	Number of Respondent
Yes	58
No	2

Fig. 12: Respondents using slang or abbreviation in messaging apps

Table 6 and Figure 12 shows the number of respondents using slang or abbreviation in messaging apps. 58 people or 97% of respondents agree that they apply slang or abbreviation in messaging apps. Only

2 people or 3% of the respondents do not use slang or abbreviation in messaging apps.

Table 7: Respondents who received false news or fraud message.

Received False News or Fraud Message	Number of Respondent
Yes	30
No	30

Fig. 13: Respondents who received false news or fraud message

Table 7 and Figure 13 illustrate the number of respondents who received false news or fraud message from unknown people. It is important to note that cases regarding to the spread of false news seem to increase over time. The results exemplify that 50% of the respondents received false news or fraud message from unknown people. Fraud messages are harmful as they can cause loss of money if someone falls into its trap

Table 8: Respondent that face negative emotion when waiting long for reply.

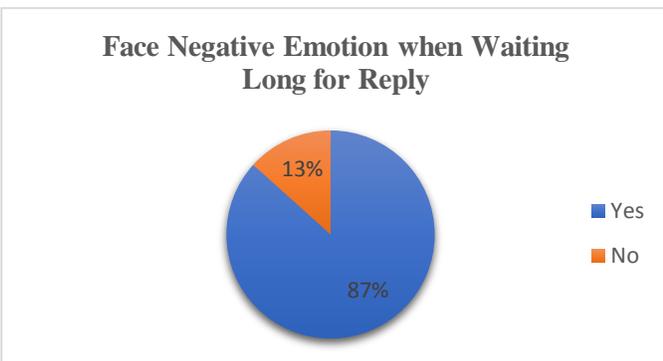| Negative Emotion when Waiting Long for Reply	Number of Respondent
Yes	52
No	8

Fig. 14: Respondent that face negative emotion when waiting long for reply.

Table 8 and Figure 14 show the number of respondents who encountered negative emotion while a long awaited reply or non-responded messages. 52 people, 87% of the respondents, stated that they faced negative emotion when they had to wait long for a reply to the messages that they had sent earlier or when there was no reply at all. There are only 8 people or 13% of the respondents who had never faced any negative emotions while waiting for reply

Table 9: Advantages of Messaging Apps.

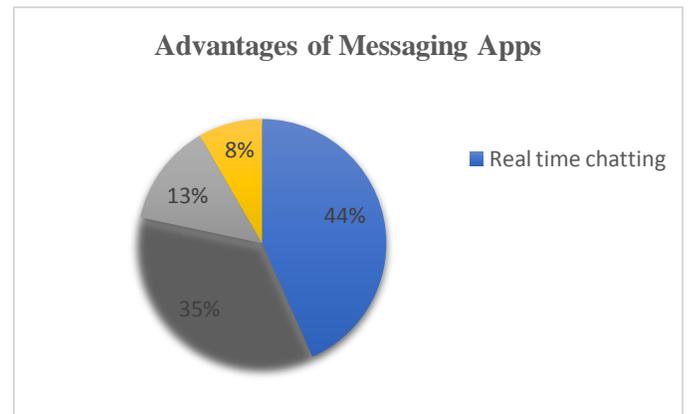| Advantages of Messaging Apps	Number of Respondent
Real time chatting	26
Send message at no cost	21
Can share pictures, videos and files rather than text message with your friend	8
To get information on events or promotions	5

Fig. 15: Advantages of messaging apps

Table 9 and Figure 15 show the advantages of messaging apps that ease the respondents' life. 26 respondents, with a total of 44%, note that the major advantage of messaging apps is their real time chatting. 21 respondents, 35%, agree that messaging apps provide the benefits of sending messages without any costs.

Table 10: Disadvantages of messaging apps.

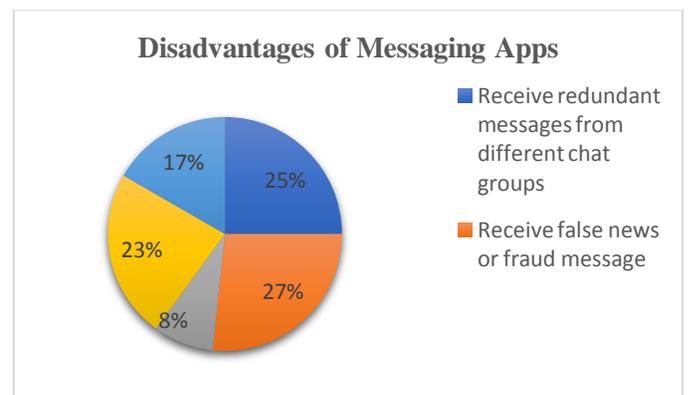| Disadvantages of Messaging Apps	Number of Respondent
Receive redundant messages from different chat groups	15
Receive false news or fraud message	16
Discussion or task given through messaging during your leisure time	5
Difficult to understand slang and abbreviation in chats	14
Difficult to explain something without talking face-to-face	10

Fig. 16: Disadvantages of Messaging Apps.

Table 10 and Figure 16 show the disadvantages of messaging apps as perceived by the respondents. Approximately 16 people or 27% respondents agree that the shortcomings of messaging apps concern the issues of receiving and spreading of false news or fraud messages. Furthermore, 15 people or 25% respondents agree that receiving redundant messages from different chat groups is annoying and that it affects them in so many ways.

Table 11: Messaging apps have more advantages than disadvantages

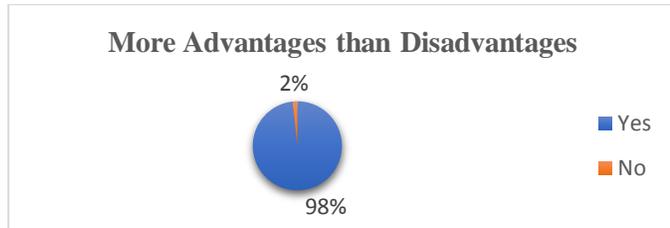| More Advantages than Disadvantages	Number of Respondent
Yes	59
No	1

Fig. 17: Messaging apps have more advantages than disadvantages

Table 11 and Figure 17 show that the respondents perceive that messaging apps have more advantages than disadvantages in their life. It is apparent that majority of them, 59 respondents or 98%, state that the technology that comes along with messaging apps bring more advantage than disadvantages for their life. Only 1 or 2% out of the total respondents disagree with the thought that messaging apps bring more advantages than disadvantages.

It is important to note that UKM students use messaging apps for many purposes. The main purpose is to chat with their friends. They hardly utilize the traditional SMS service nowadays because of the cost [12]. They chat with their friends mostly through voice or even video calls with the messaging apps on time [13]. In addition, they use the messaging apps for group discussion to complete their assignments. This is because UKM students are required to carry out extensive group projects. They might not have ample spare time to do face-by-face meeting, thus, by utilizing the messaging apps for discussion and file sharing would help to ease their burden.

Most respondents, a total of 97%, use slang or abbreviation when chatting via messaging apps. The use of slang when communicating with people is sometimes considered inappropriate because not everybody understands it. Half of the respondents also agree that they have encountered several occasions of receiving false news or fraud messages from unknown people. However, there are many methods to identify false news and prevent people from falling into traps. Majority of the respondents agree that they will carry out some research on Google to find out whether it is a fake news or not. They also added that by reading through the received messages carefully they can identify and prevent fraud messages. Many of the respondents agree that waiting for a reply for a long time will affect their emotion.

There are many advantages of the messaging apps that ease the students' daily life. Most respondents agree that messaging apps provide real time chatting with no cost. Conversely, most of them state that the shortcomings of messaging apps are their lack of control over the false news or fraud messages received and spread among users. They also agree that messaging apps allow redundant messages from different chat groups. Lastly, 98.3% respondents agree that the technology offered by messaging apps will bring more advantages than disadvantages to everyone from all walks of life

V. CONCLUSION

Messaging apps are one of the essential apps in any smart phones. Everyone uses smart phones and messaging apps for diverse purposes such as in communication, education or business. Messaging apps deliver messages from one end of the earth to the other end in just a matter of second. Moreover, this service is free on most of the messaging apps. There are many types of messaging

apps available now, e.g. WhatsApp, Facebook Messenger, Skype and WeChat. By the end of 2017, WhatsApp is reported to be the most popular messaging apps which has the most active users each month. The nature of WhatsApp, which has simple and user-friendly interface, is the main reason why many people are using it all around the world. Facebook Messenger is the second most popular messaging apps in the world.

Based on the findings presented above, it can be concluded that messaging apps play a significant role in the university students' life because they can connected with everyone else all the time. WhatsApp is proven to be the most popular messaging apps utilized by majority UKM students. In fact, it is the most frequently used messaging apps deployed by the students. Many of them use the messaging apps more than once in an hour time, thus, this indicates that they send and receive message quite regularly. Generally, it can be concluded that messaging is a more popular means of communication among university students as compared to making phone-calls. The students are responsible on their own use of smartphones especially in regards to chatting.

Acknowledgement

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Appendices

1. Which is/are the messaging apps you are using currently? (Can choose more than one)
a. WhatsApp
b. Facebook Messenger
c. WeChat
d. Skype
e. Telegram
f. LINE
g. Viber
h. Other: _____

2. Which is the apps that you use the most frequent? (Choose based on your answer in Q1)
a. WhatsApp
b. Facebook Messenger
c. WeChat
d. Skype
e. Telegram
f. LINE
g. Viber
h. Other: _____

3. How frequent are you using messaging apps?
a. A few times in a week
b. Once a day
c. Once a few hours
d. Once an hour
e. More than once in an hour

4. What is the purpose for you to use the apps? (Can choose more than one)
a. To chat with friends
b. To have group discussion on assignment
c. To promote events or sales
d. To submit assignment
e. Other: ___

5. Are you using slang or abbreviation in messaging apps?
a. Yes
b. No

6. Do you ever received false news or fraud message from unknown people?
a. Yes
b. No

7. How do you recognize false news and fraud message?
a. Read through the content carefully
b. Do some research through Google
c. Validating the source
d. Validating the author
e. Asking some advice from friends

8. Do you feel negative emotion if the person you send a message takes a very long time to reply or never reply you?
a. Yes
b. No

9. What is the advantage of messaging apps that ease your life?
a. Real time chatting
b. Send message at no cost
c. Can share pictures, videos and files rather than text message with your friend
d. To get information on events or promotions

10. What is the disadvantage of messaging apps that affect your life?
a. Receive redundant messages from different chat groups
b. Receive false news or fraud message
c. Discussion or task given through messaging during your leisure time
d. Difficult to understand slang and abbreviation in chats
e. Difficult to explain something without talking face-to-face

11. Do you agree that the technology of messaging apps bring more advantages than disadvantages for your daily life?
a. Yes
b. No