

## **A Proposed Model for Measuring Instant Messenger Applications Adoption Among Indonesians and Malaysians**

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**Abstract:** In Indonesia, the percentage of application downloaded is the second highest in South East Asia after Philippines but the usage duration is the lowest (40 min) among these countries. In Malaysia, the percentage of application downloaded is the lowest among these countries but the usage frequency is the highest (66 min). It is important to increase the usage of the application especially in Indonesia which is considered still low compare to Malaysia. The increase of application usage can have many advantages such as increasing the telecommunication traffic and invite the advertisement. In order to increase the usage, factors that influence the behavioral intention and usage behavior of the application is important to determine. The objective of this research is to identify factors that affect the behavioral intention and usage behaviour toward instant messenger application among Indonesians and Malaysians. Literature review of articles from international journals and interview and focus group discussion with 98 customers in Indonesia and 36 customers in Malaysia was done in this study. Our findings suggest that there are 2 new variables that should be added to the original UTAUT2 model, namely: interoperability and mobile friendliness. Thus, this study proposed performance expectancy, effort expectancy, social influence, facilitating condition, hedonic motivation, price value, mobile friendliness and interoperability as independent variables which will influence the behavioural intention and usage behavior of indonesians and malaysians toward instant messenger applications. Age and gender are proposed as moderating variables.

**Key words:** IMA, adoption, services based on technology, UTAUT 2, Indonesia

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### **INTRODUCTION**

The number of internet users in Indonesia has increased approximately 13% from 2012 until 2013. With total of 71.9 million users, internet penetration in Indonesia reaches 28% of total population (Haryoto, 2015). Most of users in Indonesia use smartphone as device to connect themselves to Internet. Smartphone usage in Indonesia is averagely 189 min/day. Some activities done by users with their smartphone are chatting (2.1 min), browsing (1.9 min), multimedia (1.1 min), game (1.1 min), social network (1.1 min) and Apps store (0.2 min). Chatting is the most frequently activities among smartphone users, due to the increasing of new IMAs available for smart phone such as WhatsApp, Black Berry Messenger (BBM), line, kakaotalk and wechat. Those applications has replaced the function of Short Messages Service (SMS) to some smart phone users. Total messages sent through instant messenger successfully get beyond total messages sent through SMS. Furthermore, report from Flurry Analytics shows that the users of this application increases dramatically in 2013 which reaches 115% compared with previous years.

A survey by Mobile Marketing Association (MMA) and vserv.mobi to 3,000 mobile web and application user in 6 South East Asia countries: Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam reveals that the frequency of mobile content downloaded in Indonesia, especially for application categories is the second highest among others. Indonesia is the only country which has the number of downloaded application consistently above average of South East Asia, the other countries tend to fluctuate. The second highest number of application downloaded is not in line with the usage which is Indonesia become the lowest among other South East Asia countries. This condition is not good for business, since application developers and companies usually get benefit from usage fee of the applications. The more the application is used the benefit the application developers and companies be. It is important to motivate customers to use the downloaded application in their activities. Identifying factors affecting the behavior intention and use behavior of customers toward Instant Messenger Applications (IMA) is needed in order to motivate them to use the application.

### Problem statements, research questions and objectives:

Based on the illustrations in the background, problem statements which are analyzed in this research are: the percentage of application downloaded by smartphone users in Indonesia is the second highest in South East Asia after Philippines with IMA as the most frequently downloaded application in 2013. But this fact is contradictive with total usage of that application by smartphone user in Indonesia as shown above only 40 min/day. In Malaysia, the percentage of downloaded application is the lowest among comparing countries but the usage duration is the highest (66 min) among other countries. It is important to increase the usage of the application especially in Indonesia which is considered still low compare to Malaysia. In order to increase the usage, factors that influence the behavioural intention and use behaviour of people to use the application is important to identify. So far, the adoption and use behavior factors of IMA are not yet well researched in Indonesia and Malaysia.

This study aim to answer the following questions: based on literature review result what is the proposed model that should be used to measure the behavioral intention and use behavior of consumers in Indonesia and Malaysia toward using IMA? Based on interview and focus group discussion result what is the proposed model that should be used to measure the behavioral intention and use behavior of consumers in Indonesia and Malaysia toward using IMA?

In line with the research questions, the objectives of this research are to find out the proposed model that should be used to measure the behavioral intention and use behavior of consumers in Indonesia and Malaysia toward using IMA based on literature review result. To find out the proposed model that should be used to measure the behavioral intention and use behavior of consumers in Indonesia and Malaysia toward using IMA based on interview and focus group discussion result.

**Literature review:** This study first review the literature regarding the technology adoption theories and models. This study found 12 theories and models that usually used in the study of adoption of technology or services based on technology. The following twelve theories or models of technology adoption are: the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB), the Technology Acceptance Model (TAM), Technology Acceptance Model 2 (TAM 2), the Motivational Model (MM), the Combined TAM-TPB

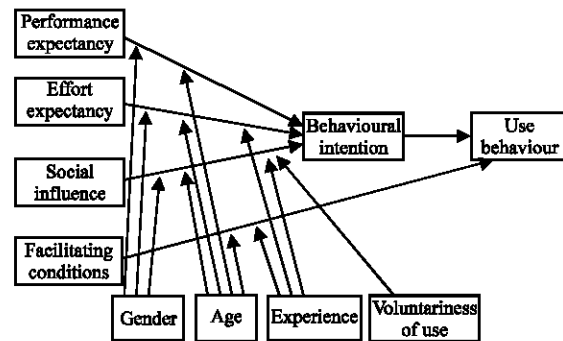


Fig. 1: UTAUT model by Venkatesh *et al.* (2003)

(C-TAM-TPB), the Model of Personal Computer Utilization (MPCU), Innovation Diffusion Theory (IDT), Social Cognitive Theory (SCT), Extended SCT, the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2).

UTAUT was initially developed by Venkatesh *et al.* (2003) through a review and consolidation of the constructs of the eight previously mentioned theories, namely TRA, TPB, TAM, MM, C-TAM-TPB, MPCU, IDT and SCT, employed to explain usage behaviour in the IT context (Venkatesh *et al.*, 2003; Wu *et al.*, 2008). The UTAUT posits that performance expectancy, effort expectancy and social influence are the three key constructs which directly influence behavioural intention and that facilitating conditions is a key construct which directly influences usage behaviour (Venkatesh *et al.*, 2003; Wu *et al.*, 2008). Besides these four key constructs, they propose that age, gender, voluntariness of use and experience moderate the influence of the four key constructs on behavioural intention and usage behaviour (Venkatesh *et al.*, 2003; Wu *et al.*, 2008). Figure 1 indicates the relationship among constructs in the UTAUT.

Empirical tests showed that the UTAUT model explains about 70% of the variance or adjusted  $R^2$  in the behavioural intention of consumers to use IT. This model has highest explanatory power; the other eight models can only explain between 17-53% of the adjusted  $R^2$  or variance in the behavioural intention of consumers to use IT (Venkatesh *et al.*, 2003; Wu *et al.*, 2008).

Development of UTAUT model to UTAUT 2 was to study and understand acceptance and use of technology in consumer context. Venkatesh *et al.* (2012) added three new constructs to UTAUT model such as hedonic motivation, price value and habit and also involve three moderating variable such as age, gender and experience. Study on the UTAUT2 show that UTAUT2 produced a

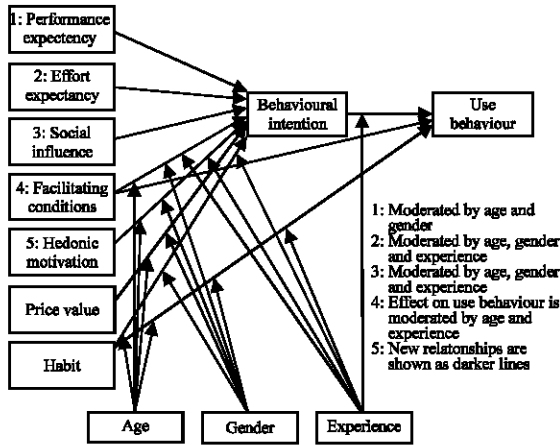


Fig. 2: UTAUT 2 model by Venkatesh *et al.* (2012)

substantial improvement in the variance explained on behavioural intention of UTAUT from 56-74% and technology use from 40-52% (Venkatesh *et al.*, 2012). Thus, so far it can be concluded that UTAUT2 model is considered to be the best model in predicting behavioural intention and use behaviour in technology adoption research. Figure 2 indicates the relationship among constructs in UTAUT2. The following is the explanation of each variable in the UTAUT2 model.

**Performance expectancy:** According to Venkatesh *et al.* (2003), performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain in job performance. Performance expectancy is the strongest predictor of Behavioral Intention (Venkatesh *et al.*, 2003). Indrawati (2012, 2014) also found that performance expectancy which combined usefulness, compatibility and relative advantage from TAM and IDT is the factor that significant influence to behavioral intention. Venkatesh *et al.* (2003) indicate that influence of performance expectancy to behavioral intention varied on gender and age where the result showed more significant effect on younger men.

**Effort expectancy:** According to Venkatesh *et al.* (2003), effort expectancy is defined as the degree of ease associated with the use of the system. The research results by Venkatesh *et al.* (2003) show that effort expectancy has positive effect to behavioral intention. The effect of positive expectancy to behavioral intention moderated by gender and age which is more significant on older women and this effect decrease with increasing of experience. Indrawati (2014) found that effort expectancy has positive influenced on Indonesian consumer's behavioral intention to use website.

**Social influence:** According to Venkatesh *et al.* (2003), social influence is defined as the degree to which an individual perceives that important others believe he or she should use the new system. Social influence is direct determinant of behavioral intention with the most significant effect on older women and using technology as mandatory with a little experience. Social influence has been found to have a positive affect on the behavioral influence of Indonesian respondents toward website in Indonesia (Indrawati, 2014) and smart metering in Indonesia in 2016.

**Facilitating conditions:** According to Venkatesh *et al.* (2003), facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of system. In UTAUT 2 model, Venkatesh *et al.* (2012) adds the direct effect of facilitating conditions to behavioral intention. Facilitating conditions have an effect to behavioral intention which is moderated by gender and age. Indrawati and Primasari, Indrawati and Tohir indicated that FCs positively affect behavioral intention of respondents toward smart metering.

**Hedonic motivation:** According to Brown and Venkatesh hedonic motivation is defined as the fun or pleasure derived from using a technology and it has been shown to play an important role in determining technology acceptance and use. Venkatesh *et al.* (2012) stated that hedonic motivation is a critical determinant factor of behavioral intention in non-organizational context. Indrawati found that hedonic motivation has a positive effect to consumer's behavioral intention to use TV streaming services in Indonesia.

**Price value:** According to Venkatesh *et al.* (2012), one of the important differences between use of technology in consumer and organizational context is consumer usually bear the monetary cost of such use whereas employees do not. Cost and price structure may have significant effect on use of technology by consumer. Price is an important factor because consumer must spent money to purchase device and service. Price value is positive when the benefits of using a technology are perceived to be greater than the monetary cost and such price value has a positive impact on intention.

**Habit:** According to Limayem *et al.* (2007) habit has been defined as the extent to which people tend to perform behaviors automatically because of learning. There are three primary antecedents to habit development which

seem to be valid across the board; frequent repetition of the behavior in question, the extent of satisfaction with the outcomes of the behavior and relatively stable contexts.

**Behavioral intention:** According to Ajzen (1991), intentions are assumed to capture the motivational factors that influence a behavior; they are indications of how hard people are willing to try of how much of an effort they are planning to exert in order to perform the behavior. Behavioral intention in UTAUT model is a predictor of use behavior.

**Use behavior:** According Wu use behavior measure frequency of actual use of technology by user. Venkatesh *et al.* (2012) stated that use behavior measured by frequency of using mobile internet.

## MATERIALS AND METHODS

To achieve the objectives as stated in part 2.0, this research did 2 kinds of activities, namely literature reviews and interview as well as focus group discussion. This research had done literature review of published articles which are mainly from international journal to fine out the most fit model to predict behavioral intention of customers toward IMA.

The interview and focus group discussion with customers in Indonesia and Malaysia were done to find out the customers perception regarding the factors considered when the customers will use the IMA. Totally, there are 98 customers in Indonesia and 36 customers in Malaysia were involved as respondents. The technique used in choosing respondents was purposive sampling along with snowball sampling. Snowball sampling allows the researcher to generate a larger sample by asking participants to identify their colleagues (Foster, 2004). A guided interview format used to ensure that the information obtained would be related to the objectives on the study. Open-ended questions were prepared and were given to the respondents. The interviewers adjusted the sequence of the questions given and added questions based on the responses of the respondents (Zhang and Wildenmuth, 2009). To enhance confidence of the information, this study also applied investigator triangulation, the use of more than one data collectors, namely using peer interviewers (Bashir *et al.*, 2008; Golafshani, 2003). During the interview there are two interviewers who make research notes and put the codes on every meaningful statement of interviewees. The interviewers check the interpretation against the interviewees and peer interviewer to reduce bias of a single interviewer and for confirmation.

## RESULTS AND DISCUSSION

Im *et al.* (2007) reported that customers from different nations react differently to new, innovative technological products and services. As such, the present research focused on Indonesia and Malaysia thus the UTAUT2 model should be adjusted to fit the local context.

To suit UTAUT2 with the local context, this study used interview and focus group discussion to find the customer's perception on IMA as an application based on technology. Focus group discussion and interview are two qualitative research techniques that are commonly used to find the answer on how and what people think about an object(s). The qualitative method is used to know the opinion of the respondents interviewed regarding the factors that may influence their decision in using IMA.

The interview and focus group discussion involved 98 IMA users in 11 cities in Indonesia and 36 IMA users in 9 cities in Malaysia. Through this process, it was found that both Indonesian and Malaysian users considered all the variables of UTAUT2 model and 2 new variables, namely interoperability and mobile friendliness are important for their adoption.

**Interview result regarding performance expectancy:** Regarding performance expectancy factors, all of 98 Indonesian respondents agree that performance expectancy as an important factor influencing their behavior in adopting IMA. The following are statements from some Indonesians.

Respondent A said that "Beside it's really easy to communicate with people, it's cheaper and faster compared with normal messages. With IMA we can share information quickly not only the text but also picture, video, etc. As business woman, it is also good for marketing my product to other people through IMA in a busy day".

Respondent B said that "Mainly, I use the IMA for working purpose. As a sales person who spends a lot of time outside the office, IMA play important role in communicating with supporting staff at the office and keeping me update with all issue within the group/company".

Respondent C said that "It is more useful and friendly related with sending pictures, messages, etc., rather than SMS (Short Message Service). Not only its usefulness is the most important when using IMA but also its good/attractive application (background layer, cute emotions, etc)". Respondent E said that "it helps me communicate with other people in easy and fun way without needing extra cost" regarding performance

expectancy factors, all of 36 Malaysian respondents agree that performance expectancy as an important factor influencing their behavior in adopting IMA. The following are statements from some Malaysians.

Respondent AM said that “When I do not have any prepay but I have internet connection I will use WhatsApp to contact my friend. In this occasion, WhatsApp is useful because it is free”.

Respondent BM said that “I use two applications and divide it based on the function one for social communication and the others for working. Since, WhatsApp is easy and fast to deliver messages while telegram is faster at downloading files”.

Respondent CM said that “First, I can keep in touch with my friend and family. Second, I do not have to pay anything beside the internet so it is almost free. And the third, it is very efficient for voicecalling”. Respondent DM said that “I am still able to receive message even though the connection is slow it is good for group chatting and also easy to use”.

**Interview result regarding effort expectancy:** Regarding effort expectancy factors all of 98 Indonesian respondents agree that effort expectancy as an important factor influencing their behavior in adopting IMA. The following are statements from some Indonesians. Respondent A said that “It is easy to use. Even the small kids just like my little brother in the age of 7 can use it”.

Respondent B said that “Now a day, if we find difficulties and waste our time to use an application, the application will not be used anymore. So, for me IMA is simple and I have been already familiar using IMA starts with YM and Gtalk”.

Respondent C said that “Once it is easy to use, people who are not familiar with IMA willing to try to use it”. Respondent D said that “The features and menu that the IMA offers is really easy to use and it is fast at delivering message. Therefore, we can reach effective and efficient result”. Respondent E said that “When I look for an application, the first thing to consider is easiness to use. And IMA is easy to download and install in whatever devices I have”.

Regarding effort expectancy factors from 36 respondents there are 94% who have opinion that effort expectancy as an important factor influencing their behavior adoption of IMA. The following are statements from some Malaysians. Respondent AM said that “Group chat feature in WhatsApp make us easier to communicate with friends and it is faster at delivering the message”.

Respondent BM said that “WhatsApp is easier to use. Compared with line I find it very difficult. Sometimes I send the message but it does not reach to the other

person. Sometimes it also few hours delay to get the message through line”. Respondent CM said that “The use of WhatsApp is almost same as normal message. That is why I like to use it than another application”.

**Interview result regarding social influence:** Regarding social influence from 98 respondents there are 95% who have opinion that social influence as an important factor influencing their behavior adoption of IMA. The following are statements from some Indonesians.

Respondent A said that “My family and friends use that application because it is cheaper to use than normal message and normal call. Also, it is completed by stickers”. Respondent B said that “My family use IMA because it is fast to share information. I study in Bandung so I can send the picture of my transcript or give information about my study to my mother through IMA. While, my friends use it because it has become a trend and necessary in our society. So, both of them influence me to use IMA”.

Respondent C said that “I use Line because my father and my friends use that IMA. However, I also use BBM to communicate with my mother and friends who still use it. Since BBM has been used longer than line, somebody get use to that application and do not want to try another IMA”. Respondent D said that “IMA keeps and maintains our relationship remains close even though it is physically located on adjacent sites through intensive communication via IMA”.

Regarding social influence from 36 respondents there are 100% who have opinion that social influence as an important factor influencing their behavior adoption of IMA. The following are statements from some Malaysians. Respondent AM said that “Most of Malaysian use WhatsApp while I use line to communicate with my friend in Indonesia and I also use BBM to communicate with my family”.

Respondent BM said that “I use WhatsApp because lot of my friend and family in my society use WhatsApp”. Respondent CM said that “I think everybody has moved from normal message to IMA so that I use it”.

**Interview result regarding facilitating condition:** Regarding facilitating condition from 98 respondents there are 90% who have opinion that facilitating condition as an important factor influencing their behavior adoption of IMA. The following are statements from some Indonesians. Respondent A said that “since Medan is a big city, the connection is good. This is very important for using IMA. Now a days, many smartphones are compatible for using IMA and the price is quite affordable”. Respondent B said that “internet connection

can be found in many public places. Moreover, IMA has been available in many kind of devices. For example, blackberry, windows phone android and iOS”.

Respondent C said that “In Jakarta, the internet connection is good enough. We also can find Wi-Fi access easily around Jakarta area. Moreover, the devices such as smartphone or tablets are easy to find here”. Respondent D said that “I never find difficulty in connection. Moreover, the devices are available a lot with the variability of price start from Rp. 500.000 till Rp. 16.000.000”.

Regarding facilitating condition from 36 Malaysians respondents there are 94% who have opinion that facilitating condition as an important factor influencing their behavior adoption of IMA. The following are statements from some Malaysians.

Respondent AM said that “The connection is very good so fast. There is a lot of wifi everywhere. Even in some restaurant there will be free wifi for the customer. While the weakness is if I use voicecall sometimes it is not clear but it is still okay for me”. Respondent BM said that “I rarely use public Wi-Fi. I use my home Wifi and it is reliable”.

Respondent CM said that “The internet connection is okay. As it is not always slow and lot of internet connection everywhere. I also use wifi connection at home, it is about RM 80 a mon and it can be used by all of my family member. While I use data plan for my phone too it is about RM 5 a week”. Respondent DM said that “The connection in Malaysia depends on the package that we subscribe. When I use data plan which is only 100 MB the connection is slow, compared to 250 MB it will be faster”.

**Interview result regarding hedonic motivation:** Regarding hedonic motivation from 98 Indonesia respondents there are 95% who have opinion that hedonic motivation as an important factor influencing their behavior adoption of IMA. The following are statements from some Indonesians. Respondent A said that “The emoticon creates the use of IMA more fun. We can add expression to emphasis or to smoothen the words. Besides, IMA keep us connected with friends and family. We can create group chat, comment on the same picture, share valuable information and others even if in our busy days”. Respondent B said that “I am happy with IMA because it is economic, fast and its unique features help us to show our expression”. Respondent C said that “IMA make me possible to communicate to >1 person while SMS can’t do that. So, it is fun to communicate to all my familie’s member through group chat in IMA”. Regarding hedonic motivation from 36 Malaysians respondents there are

89% who have opinion that hedonic motivation as an important factor influencing their behavior adoption of IMA. The following are statements from some Malaysians. Respondent AM said that “I am happy using IMA because distance is not a problem as long as I still having communication with my friend in different places”.

Respondent BM said that “I enjoyed while I am using WhatsApp. I like the emoticons. It is more fun to use WhatsApp than SMS because I can send attachments such as photos and another things which is more interesting than SMS”.

**Interview result regarding price value:** Regarding price value, from 98 Indonesians respondents there are 95% who have opinion that price value as an important factor influencing their behavior adoption of IMA. The following are statements from some Indonesians. Respondent A said that “Eventough IMA is very useful I do not want to pay. I will look for other application. I think my friends and family will also do the same thing”.

Respondent B said that “Free is the reason why I use that application but if someday it charges I will keep using it. As long as people use it too”. Respondent C said that “I will not use IMA If I have to pay. If I can find other IMA which is fulfill the mentioned factors above and free. I believe my family and friend will do the same thing”.

Regarding price value from 36 Malaysians respondents there are 94% who have opinion that price value as an important factor influencing their behavior adoption of IMA. The following are statements from some Malaysians. Respondent AM said that “free is one of the reason why I use WhatsApp. If someday the provider charges me and the price is still cheap why do not I pay for it. I also think that WhatsApp is cheaper than normal message and normal call. And if they want to make a charge they have to make some comparison”.

Respondent BM said that “free is the reason why I use IMA. If the provider charges me I will still use it as long as the price is not more than RM 5 untill RM 10 a year”. Respondent CM said that “Actually free is the reason why I use IMA but if someday the provider charges me then people still use it and it gives me lot of benefit I will still use it”.

**Interview result regarding habit:** Regarding habit, from 98 Indonesians respondents there are 95% who have opinion that habit as an important factor influencing their behavior adoption of IMA. The following are statements from some Indonesians. Respondent A said that “I have been using IMA for about 3 years so it is already become my habit, more over there are a lot of information are shared through this IMA”.

Respondent B said that "From the time of sun rises in the morning I always check my smartphone. Not only check message but also other information. So, use IMA has become new habit in my daily life" Respondent C said that "It has become my habit because I can not meet my family or friends everyday. So, IMA facilitate us to communicate".

Regarding habit, from 36 Malaysians respondents there are 78% who have opinion that habit as an important factor influencing their behavior adoption of IMA. The following are statements from some Malaysians. Respondent AM said that "It has become my habit since I send about 100 messages and I receive about 300 messages everyday".

Respondent BM said that "It has become my habit. I use it not only for communicating with my society but also for business purposes, for shopping online I use WhatsApp to communicate with the seller". Respondent CM said that "It has become my part of lifestyle".

**Interview result regarding interoperability:** Regarding interoperability from 98 Indonesians respondents there are 81% who have opinion that interoperability as an important factor influencing their behavior adoption of IMA. The following are statements from some Indonesians. Respondent A said that "Most of us still spend plenty of time at our computers so being able to message across PC and mobile platforms is a feature that has been overlooked all too often by service providers". Respondent B said that "sometimes I have to make complicated report for my job, using PC more easier than mobile phone. Like WhatsApp now can be operated in PC too. This makes my work more faster and easier. That is why I prefer if IMA can be used both in PC and mobile phone".

Respondent C said that "It would be easier for me to use IMA in any device according to the situation and working conditions". Respondent D said that "because it offer us the flexibility we can use it via mobile when we are in high mobility also we can use it more comfortable via PC/laptop when we are at the office. To download some files sent to IMA will also be easier using PC or laptop. It will allow us to have backup data, just in case the problem occurs to the application on one of the mobile phones or PC/laptop". Respondent E said that "It would be easy to maintain or keep working when the mobile phone battery gets low so just change to other devices and keep working". Regarding Interoperability from 36 Malaysians respondents there are 78% who have opinion that interoperability as an important factor influencing their behavior adoption of IMA. The following are statements from some Malaysians. Respondent AM said that "I like

to use facebook messenger because when I am doing my task on laptop and chatting at the same time I do not need to open my laptop and mobile phone at the same time. I can online it on my laptop". Respondent BM said that "If my mobile phone is not working I can use that application on my laptop".

**Interview result regarding mobile friendliness:**

Regarding mobile friendliness from 98 Indonesian respondents there are 98% who have opinion that mobile friendliness as an important factor influencing their behavior adoption of IMA. The following are statements from some Indonesians. Respondent A said that "Yes, I think it is important to have IMA which can deliver messages in any conditions of internet's bandwidth condition. Those application can compressed the traffic of data package especially when connection gets slow. Respondent B said that "Yes I consider IMA which does not need large data storage, if IMA need large data storage it will make the mobile phone slow to operate". Respondent C said that "I prefer the application that can send message in slow connection and need a bit of storage".

Respondent D said that "Sometimes we are in an area that don't have fast connection of internet but we still need to connect with other people easily. So I think it will be great if the IMA can still deliver message even though the internet connection is slow". Regarding mobile friendliness from 36 Malaysians respondents there are 90% who have opinion that mobile friendliness as an important factor influencing their behavior adoption of IMA. The following are statements from Malaysians on mobile friendliness as an important factor influencing behavior adoption of IMA.

Respondent AM said that "I prefer to use WhatsApp because when I receive some photo in group I can choose whether I want to save it later or now, meanwhile in Wechat if I open the photo it is automatically saved to my phone and it decrease my storage". Respondent BM said that "WhatsApp is still working even though the connection is slow. That is why I often use it in Malaysia". Respondent CM said that "I often use WhatsApp because eventhough the connection is slow I still can receive or send a message (Fig. 3).

**Interview result regarding behavioural intention:**

Regarding behavioural intention all Indonesians respondents agree that behavioural intention is an important factor influencing their behavior adoption of IMA. The following are statements from some Indonesians. Respondent A said that "I find it helpful to finish my office task and fun to use. It easier to communicate with others and it does not need too much space in mobile phone". Respondent B said that "I will use it in the future because it is free, simple and useful".

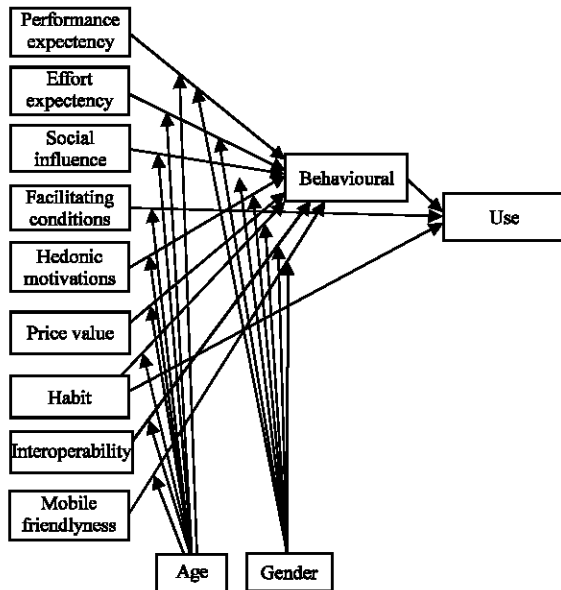


Fig. 3: Proposed model for predicting consumer behaviour toward instant messenger application adoption

Table 1: Summary of interview result

Variables	The percentage of respondents who agree with the existence of variable in the model	
	Indonesian respondents (%)	Malaysian respondents (%)
Performance expectancy	100	100
Effort expectancy	100	94
Social influence	95	100
Facilitating condition	90	94
Hedonic motivation	95	89
Price value	95	94
Habit	95	78
Interoperability	81	78
Mobile friendliness	99	94
Behavioural intention	100	100

Respondent C said that “Communication through IMA is a necessity for me so I’ll continue using it”. Regarding behavioural intention all Malaysians respondents agree that behavioural intention is an important factor influencing their behavior adoption of IMA. The following are statements from some Malaysians. Respondent AM said that “I will use IMA in the future more often. I think people who already work in the office are more often communicating through IMA than those who are not working yet”. Respondent BM said that “If I find better application than WhatsApp I will move to the easier one”. Respondent CM said that “If WhatsApp charges us with reasonable and affordable price and the benefit of WhatsApp for me is high enough, I will still use it”. The summary of interview result can be seen at Table 1.

## CONCLUSION

Based on literature review and interview as well as focus group discussion, the proposed conceptual model for predicting consumer behaviour toward IMA adoption in Indonesia and Malaysia is presented in Fig. 3. The proposed model consists of nine constructs and three moderators. The nine constructs are performance expectancy, effort expectancy, social influence, facilitating conditions, price value, hedonic motivation, habit, mobile friendliness and interoperability. The two moderators are age and gender. Mobile friendliness is described as condition of the application that can be operated even when the connection is slow and it only need little data storage. Interoperability is described as condition of the application that can be operated in mobile phone as well as PC or laptop.

The next process that will be done by the writers are composing the measurement tool in this case is a set of questionnaire and test it through pilot test. Once the measurement tool is valid and reliable it will be used to collect main data to test if the proposed model can be applied to predict the behaviour intention and usage behaviour of IMA users in Indonesia and Malaysia.

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