

A Proposed Research Conceptual Framework in Measuring Technology Readiness and Customers' Experience towards Continuance Usage Intention of Grab Application

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Abstract—The emerging of e-hailing services such as Grab application gave many benefits to daily life of community nowadays, for instance providing better service, lower fares and convenience rides to customer. However, as a new technology of mobile application in transportation sector, Grab application also may had some failure and technical difficulties that may impact on customers' experience while using it. Limited studies on the adoption of Grab application based on technology readiness factors. Also, lack discussion on the overall customer experience towards the usage of Grab application. Since the Grab application penetrated the Malaysian market five years ago in 2014, there is still a room to improve the understanding on the adoption and customers' satisfaction of an application among customers, thus indirectly lead customer to continue use of the application. Therefore, this paper attempts to review and assess the Grab application using proposed structural relationship model of technology readiness factors (TR), customer experience model (CEM) and continuance usage of intention (CUI). All related constructs were presented in the proposed research conceptual framework where research hypotheses were developed. As a conclusion, the paper brought forward suggestions for future far.

Index Terms—Technology Readiness Factor, Customer Experience, Continuance Usage of Intention, E-Hailing, Grab Application

I. INTRODUCTION

The introduction of Grab application in Malaysia definitely gave a huge impact on the community's everyday lives specifically in providing better service, lower fares and convenient rides. Customers now are becoming smarter in making choices pertaining to transportation services by not only considering high quality but also emphasising on high proficient of the services [1]. Malaysian market embraced the Grab application five years ago, 2014. The acceptance of this

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application definitely needs to be studied based on the customer's opinions and experiences while using it. As the adoption of Grab application provided more benefits to users, it also may have some failure or technical problems that may impact to customers' experience. For example, in 2018, Grab received many complaints from users due to technical difficulties and service interruption that caused Grab application not functioning as expected [2]. Thus, their mobility and daily activities will be disturbed and give a bad impact on their experience while using Grab.

From the empirical perspectives, previous studies on e-hailing services were conducted on different perspectives which included adoption and antecedents [3-9], impact of e-hailing services [10-13], continued use intention of e-hailing [14-15], e-hailing and customers' satisfaction [1, 16-19] and also e-hailing services' experiences [20]. Most of studies also explored the adoption of e-hailing services based on Technology Acceptance Model [e.g. 5, 9, 21]. However, several studies also found that Technology Readiness Model could be a potential factors that influenced users to adopt a new technology through mobile application (e.g. 22-24). Therefore, this study attempt to investigate the adoption of e-hailing services in Malaysia especially on Grab services based on Technology Readiness Model. Other than that, there is still a room to explore the customers' experience including customers' satisfaction, word-of-mouth, and customers' emotion towards the mobile application itself and the continuance usage intention of Grab application after the initial adoption. This study aims to (1) identify the technology readiness measures based on the Technology Readiness Model (TRM), customer experience measures and continuance usage intention measures towards Grab application, and to (2) develop a research framework of the technology readiness, customer experience, and continuance usage intention measures relationship for Grab application in Malaysia.

II. THEORETICAL BACKGROUND AND RESEARCH HYPOTHESES

A. Technology Readiness Factors and Continuance Usage Intention

Technology readiness focuses on the general beliefs regarding the technology products and services rather than the actual perceived characteristics of specific technology products and services [25]. In further to investigate the factors

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that influence the adoption of technology and how they will influence customer experience, this study uses Technological Readiness Model (TRM) to explain the variables. This model was early proposed by Parasuraman [26] to measure people's readiness to adopt and accept a new technology. The technology readiness is comprised of four personality dimensions: optimism, innovativeness, discomfort, and insecurity. Roy and Moorthi [27] stressed that the first two of technology readiness factors are related to positive feelings which are optimism (a belief that technology will bring flexibility, control, benefits and efficiency) and innovativeness (experiments could be done with new technology). The other two technology readiness factors are related to negative feelings, which are discomfort (lacking control and confidence for using technology) and insecurity (a fear that technology based service, product or process may not work accurately and reliably). These technology readiness factors influence customers to adopt Grab application and directly lead them to continue used of the application.

Initial adoption of the mobile application does not promise continuity as customers could reconsider their early judgement or experience based on their initial experience [28-29]. Since the global population had understand and adopted new technologies, there is now important to give research attention on the changing from adoption to continued use. Continuance intention is rooted in the term of behavioural intention which is deemed as a dependent variable in the Theory of Reasoned Action, Theory of Planned Behaviour and Technology of Acceptance Model which discussed the antecedents of intentional and conscious behaviour such as subjective norms, attitude, perceived behavioural control, perceived usefulness and perceived ease of use. However, another theory such Expectation Confirmation Model focused on variables that affect continuance and retention because the practicality and accomplishment of an information system are influenced by continuous usage than a one-time usage [28, 30]. This model explained the continuance intention to use information system as to conform to customers' demands which act as a significant parameter affecting their continued used [15].

Previous researchers confirmed that the adoption of a novel technology based on technology readiness factors ultimately influence continuance usage intention. For example, the study by Chen and Chen [31] and Chen, Jong, and Lai [32] found that both optimism and innovativeness significantly and positively influenced the continuance intention of using technology. In contrast, discomfort and insecurity did not significantly influence the continuance intention of using technology. Another study by Chen [33] and Alghamdi et al. [34] also highlighted that customers' technology readiness were key determinants of the continuous use of Internet banking. Besides, Lin, Shih, and Sher [35] established and investigated an integrated Technology Readiness and Acceptance Model (TRAM) which demonstrated that technology readiness is significantly related to behavioural intention in the e-service context. It can be assumed that technology readiness factors could become a key significant construct influencing the continuance usage intention of Grab application. Thus, it can be hypothesised that:

H1 There is a significant relationship between technology readiness and continuance usage intention of Grab application.

B. Technology Readiness and Customer Experience

Many studies revealed that acceptance of application based on technology readiness factors are dependent upon overall customer experience. Customer experience is defined as 'the internal and subjective response that customers have to any direct or indirect contact with a company' [36]. Some empirical research only measured customer satisfaction while evaluating the cognitive dimension of the customer experience [37]. Whereas, some others stated the importance of including customer emotions as a variable while evaluating customer experience (e.g. 38-41). Moreover, a previous work by Klaus and Maklan [42] measured customers' service experience through word-of-mouth. As mentioned above, this study described customer experience using Grab application in the form of customer satisfaction, customer emotion and word-of-mouth in order to provide an opportunity for long term competitive advantage to the Grab services.

Several studies also confirmed that technology readiness factors had a direct impact on customer satisfaction (e.g.43-48). However, optimism and innovativeness were positively related to satisfaction [43-44], while the other two factors, discomfort and insecurity result in customer dissatisfaction [43, 46]. In addition, some studies established the relationship between technology readiness factors and customer emotion.

The study by Ferreira, Rocha, and Silva [49] demonstrated that technology readiness influences customers' emotion in term of consumers' cognitive and affective evaluations of new technologies. However, the impact of technology readiness through affective assessments on high-tech innovations was greater than that of cognitive evaluations [49]. Moreover, Mick and Fournier [50] emphasised the relationship between technology and customers' emotion, indicating some inconsistent responses when they have encountered with the latest technologies. Some of customers showed their interest with the novelty of the technology, while some feared the inability to using the technology. Hence, the feeling and judgement of customers in adopting a novel technology involves the aspects of cognitive and affective nature [51-54].

Although there is a lack of studies on technology readiness and word-of-mouth, there are a few limited studies on the relationship between technology readiness and electronic word-of-mouth in the context of online environment [55, 56]. According to Chen [55], technology readiness was hypothesised to be the antecedent of both satisfaction and electronic word-of-mouth, which impact customers' dependability towards online shopping. Hence, based on their positive experience of using the technology, customers tend to increase their intention to communicate their opinion or review to the others through word-of-mouth.

Therefore, the technology readiness is based on multidimensional psychographic constructs where the positive and negative technology experiences are believed to improve the customers' experience towards continuance

usage intention of Grab application. Thus, it can be a hypothesised that:

H2 There is a significant relationship between technology readiness and customer experience with the usage of Grab application.

C. Customers' Experience and Continuance Usage Intention

Customers will continuously use a particular application if they have had a good experience using it. Likewise, customers are also driven to constantly use that application to improve their livelihood [28, 29]. In the context of this study, the overall customer experience towards continuance usage intention of Grab application is comprised of customer satisfaction, customer emotion and word-of-mouth. The Expectation Confirmation Model explained that the continuance usage intention of customers was influenced by their satisfaction of using the information system [15]. This is supported by Oliver [57] and Lee [58], which stressed that customers' satisfaction was an important driver that leading to the continuance intention of the information system. As for the Grab application, the customers' satisfaction with the application may develop their continuance intention to use it if they find it satisfactory. Previous literature also found customer satisfaction determines customers' attitudes and continuous behaviours [59-60].

According to McLean, Al-Nabhani, and Wilson [61], the positive customer experience in the form of positive customer emotion would lead to the frequent use of the mobile application. Hence, it can be suggested that differential customers' emotion including cognitive and effective assessment will act differently towards the continuance usage intention of Grab application.

Besides, Klaus and Maklan [42] recommended the word-of-mouth to measure the overall customer experience. Weng et al. [15] further highlighted that several customers decided to continue using an application if it is also used and recommended by their friends. Prior studies also highlighted several consequences from a successful customer experience such as re-visit intention, loyalty and trust [62-63]. Thus, it can be understood that the customers with good experience using an application will be tempted to use it frequently. With that, the third hypothesis was designed:

H3 There is a significant relationship between customers' experience and continuance usage intention of Grab application.

D. The Mediating Effect of Customer Experience on the Relationship between Technology Readiness Factors and Continuance Usage Intention

This study also proposed to investigate the mechanism where customer experience mediates the relationship between technology readiness factors and continuance usage intention of Grab application. The mediator effects are particularly investigated to aid in an intervention strategy. A mediator variable is a variable that provides the reproductive mechanism where an independent variable is able to affect a dependent variable of interest [63]. Thus, a mediator is also considered as a third variable or construct which mediates the

other related variables [65-66]. By studying the mediator variables, this study will find a clearer relationship between technology readiness factors and continuance usage intention. The literature suggested that the adoption of any novel technology based on technology readiness factors ultimately influence continuance intention of using that technology. However, a mediating variable is required to measure the effects of technology readiness factors on the continuance intention. In short, customers' technology readiness influences overall customers' experience, which in turn influences continuance usage intention of Grab application. The relatedness is identified as the direct and indirect effects [65-66]. Thus, it can be a hypothesised that:

H4 There is a mediating effect of customer experience on the relationship between technology readiness factors and continuance usage intention of Grab application.

III. A PROPOSED RESEARCH CONCEPTUAL FRAMEWORK

Based on the literature review, many previous studies were explored technology readiness factors, customer experience and continuance usage intention of Grab application. The research aims at analyzing of the relationship between these three variables. This study developed a proposed research conceptual framework as presented in Fig. 1.

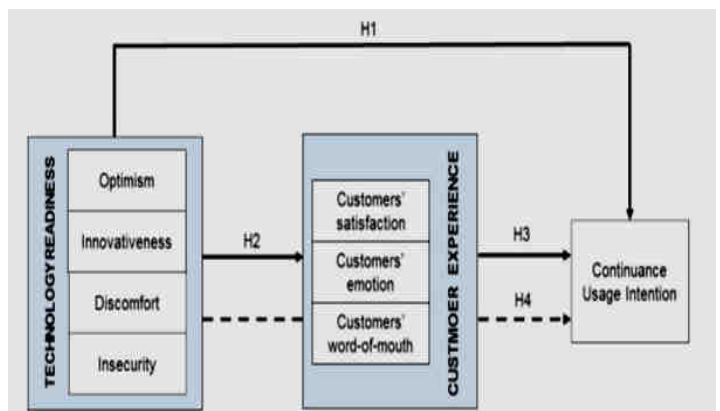


Fig. 1: Proposed Research Conceptual Framework.

IV. PROPOSED RESEARCH METHODS

This study will conduct quantitative research design and perform an online survey of the experience of Grab application users in Malaysia. The target population of this study is international and local customer in Malaysia, who use Grab application in order to fulfil their transportation needs. The sampling method to be used in this study is the convenience sampling technique which is a non-probability sampling method. This study will utilize the IBM SPSS statistics to analyze descriptive statistics such as means and frequencies. This study also will use the partial least square-structural equation modelling (PLE-SEM) using SmartPLS to evaluate measurement model and structural model.

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V. CONCLUSION

The Grab application has generated dramatic changes in the transportation services in Malaysia by providing more benefits to the community. However, there is still a lack of information on customers' experience including customers' satisfaction, word-of-mouth and customers' emotion towards the mobile application itself. Probably due to its recent introduction in Malaysia, the continuance usage intention of Grab application has received less attention in previous studies. This study will investigate on the technology readiness factors which may have a direct effect on the overall consumer experience measured by customers' satisfaction, customers' emotion, and customers' word-of-mouth that may influence the continuance usage intention of Grab application in Malaysia. A conceptual framework has been proposed to examine the relationships variables. Based on proposed framework and a previous study, research hypotheses are being developed. The next step of this study is to design a questionnaire, which will be used for pilot study data collection among Grab's users in Malaysia. The findings of this study can benefited to deliver a strong contribution to current academic knowledge related to the technology readiness model with the integration of customer experience model. This study also is hoped to establish a conceptual understanding of customer experience with the transportation service's mobile application.

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