Factors Influencing Passengers' Attitude and Adoption Intention of Mobile Taxi Booking Application

William Eng Yong Keong
School of Business, Sunway University Malaysia, Subang Jaya,
47500 Selangor, Malaysia

Abstract: Mobile apps have been applied to financial services, airline booking services, shopping and the revolutionary service on taxis ordering. This result service level can be improved in terms of shorter time for passengers to have their orderings confirmed by the taxi driver. The Mobile Taxi Ordering (MTO) apps enable passenger to view taxi availability based on their current location. Further, passengers able to review their drivers and see driver review before confirming a ride. However, taxi passengers' complaints about Malaysian taxi drivers regarding refused journeys and unmetered charges at popular taxi stands across Klang valley Malaysia are on the rise. There is a need to conduct a study on MTO adoption among passengers. Therefore, this research tries to fill the gaps on MTO adoption intention research by attempting to identify the factors which predict the rate of adoption intention of MTO in Malaysia. This study reviews the literature on MTO adoption and used a theoretical framework and had identified the critical five individual factors to capture a complete picture of MTO adoption intention. Using a survey method, data were collected from 368 sampled respondents from Klang valley area. Results showed that all five individual factors were found to play important role in the adoption intention of MTO apps. The result contributes to a deeper understanding of the individual factors that promote the use of MTO in the Malaysian.

Key words: Mobile taxis booking apps, adoption intention, passengers attitude, unmetered charges, critical

INTRODUCTION

It is widely acknowledged that the emergence of smartphone technology providing extraordinary changes to virtually every aspect of societies worldwide. It is spreading at work and at home, in education, health care and entertainment and in many other areas. The major characteristics in the smartphone technologies such as mobility and broad reach have created five value-added attributes that break the barriers of geography and time. The five value-added attributes are ubiquity, convenience, instant connectivity, personalization and localization of product and services (Rainer *et al.*, 2013). With these value-added attributes of the smartphone technology, mobile applications (apps) is rapidly growing ever since Apple Inc. first introduced the iPhone in 2007. The mobile apps are an end-user software created for mobile device operating systems which extend the capabilities of the mobile device. The mobile apps typically operated by the four mobile operating system, including the Apple App Store, Google Play, Windows Phone Store and BlackBerry App World. The mobile apps usually either made available at a minimal fee or free of charge. To date, mobile apps have been applied to financial services, airline booking services, shopping and the revolutionary service on taxis ordering.

In a developing country such as Malaysia, rapid economic and land use growth increase the need for livable living and workplace. The increase of mobility demands has increase the pressure for public transportation service delivery. Primarily, taxis are positioned to provide a door-to-door service as a mode of choice for city center trips at Klang valley region. Further, the taxi industry supports others mobility requirements, including as a viable transport option outside rail and bus operational hours. There are 37,000 taxis, for a ratio of 4.8 taxis per 1000 people in Klang valley (MOTORME). The taxi service industry had generated over RM960 million at Klang valley in year 2013. However, the taxi service in capital region of Malaysia, Klang Valley has been ranked the third worst among major cities in the world according to TripAdvisor second annual cities survey. The Malaysian taxi industry's reputation, in particular, has long been plagued by inefficiencies. Passenger getting a taxi is not easy, passenger need to be concern on their safety, reach their destination on time and negotiation on fares. According to the official report from Land Public Transport Commission (SPAD) it has been found that a log of passengers complaints toward Malaysian taxi drivers including reckless drivers, rude drivers/lack of customer service, lack of knowledge on destinations/roads, overcharging, refusing to use meter,

"cherrypick" passengers, refuse to serve congested destinations and drivers pick up multiple passengers. The majority of the Malaysian taxis do not operate with radio circuits and unable to be dispatched to telephone booking easily from passenger.

Not with standing, it is believed that Mobile Taxis Ordering (MTO) apps has the potential to solve the taxi issues on passenger. MTO apps is a smartphone based taxi ordering service in which connects between passengers, taxi dispatch center and taxi drivers using the application's proprietary global positioning system and enables users to order a taxi by using smartphone. This result service level can be improved in terms of shorter time for passengers to have their bookings confirmed by the taxi driver. The chances of getting a taxi can be enhanced due to the speed and accuracy of the systems. MTO apps enable passenger to view taxi availability based on their current location. Further, passengers able to review their drivers and see driver review before confirming a ride.

The usages of mobile smartphone are growing up at Malaysia. More feature phone users intend to change to smartphone in year 2014 or later. The dependency of smartphone MTO apps are very important to reach the conveniences by shorter waiting time, safety and others issues faced before. In spite of having these benefits towards its adoption, empirical research on MTO adoption intention by passengers has been very limited, furthermore, because of more complaints such as drivers not using their meters and overcharging passengers. There is a need to conduct a study on MTO adoption among passengers. Therefore, this research tries to fill the gaps on MTO adoption intention research by attempting to identify the factors which predict the rate of adoption intention of MTO in Malaysia.

Research objectives: This study aimed to identify the factors affecting passengers' attitude towards MTO apps adoption. More specifically, by adopting Technology Acceptance Model (TAM), the purpose of the study was to ascertain the effect of perceived usefulness, perceived ease of use, perceived self-efficacy, perceived creditability and perceived risk on passengers' attitude towards MTO apps adoption in Malaysia. Further, the relationship between passengers' attitude towards MTO apps adoption and their intention to adopt was also analyzed. This research provides information to taxi drivers in the industry about how passengers perceive MTO apps adoption and what are the factors affecting their intention to adopt MTO apps. By identifying factors affecting passengers' attitude towards MTO apps use, taxi drivers may improve passengers' service and relationship to attract more passengers and to best utilize MTO apps to enhance their competitive

position in the taxi service industry. Further, the findings of the study will help technology vendors to develop better marketing strategies and to gain competitive advantage.

Literature review: A review of literature on technology adoption and diffusion of innovation indicates that there is a rich stream of empirical and theoretical work has been conducted (Jeyaraj *et al.*, 2006). Past studies indicated that over the last 20 years, quite a rich but also diverse body of theoretical and empirical work has been conducted on the adoption and diffusion of innovations. Different theories have been formulated to examine the adoption and acceptance of new technologies in various industries. According to Fichman (1992), researchers usually consider two different aspects of adoption: the characteristics of a given technology and the consequences for adoption and diffusion process and the locus of adoption, i.e., adoption on an individual or an organizational level. Individual adoption studies typically deal with an individual's behavioral intention to adopt an innovation or actual adoption behavior. In the early 2010s, some of the popular areas studied were on adoption and/ or usage of different types of mobile apps such as mobile banking, mobile entertainment, mobile commerce and many others. In line with the objective of this research, the following sub-section discuss on one of the more popular models used on the study of individual innovation adoption, the Technology Acceptance Model (TAM) by Davis (1989).

Technology acceptance model: In this study of individual adoption on MTO apps, TAM is used because it is an important model to explain users' behavioral intentions in adopting computer technology after it was published in Management Science by Davis (1989). TAM was derived from the Theory of Reasoned Action (Ajzen, 1991) to explain and predict computer usage behavior. The TAM identifies various variables (Fig. 1) which influence users to accept or reject computer technology (Davis, 1989):

- Perceived Usefulness (PU) was defined as "the degree to which a person believes that using a particular system would enhance his or her job performance"
- Perceived ease of use (PEOU), in contrast, refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989)
- Actual System Usage is influenced by users' behavioral intention to use which is in turn influenced by users' attitude toward using
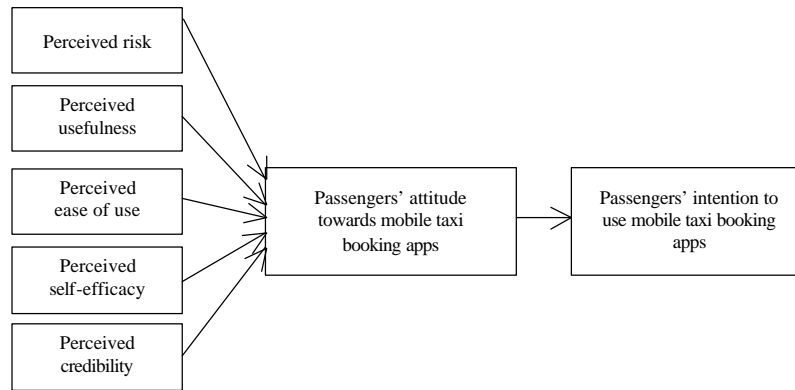- Attitude toward use is directly affected by PU and PEOU

Fig. 1: Research framework

- External variables may include users' demographic characteristics (e.g., education level) and technology characteristics (e.g., user satisfaction)

One can safely conclude by drawing upon prior theoretical and empirical evidences that the TAM has been widely applied for examining acceptance of any technology by various user groups (Kwon and Chidambaram, 2000; Cho and Agrusa, 2006; Pavlou, 2003).

Further, there are also many studies which extended the TAM model with other constructs such as compatibility (Chen and Tan, 2004), self-efficacy (Luarn and Lin, 2005), perceived credibility (Luarn and Lin, 2005; Wang *et al.*, 2003), percieved privacy and risk (Thiesse, 2007), percieved security (Hossain and Prybutok, 2008) and percieved financial cost (Luarn and Lin, 2005). Therefore, the present study draws on TAM to identify factors affecting passengers' attitude towards MTO apps adoption.

Hypotheses development: Six hypotheses (Fig. 1) are developed based on the review of the literature on various studies done in other related technological innovation adoption, attitude towards behavior, behavioral intention and mobile apps by individual. Davis (1989)'s Technology Acceptance Model (TAM) was adopted to identify factors affecting passengers' attitude towards MTO apps adoption. In the MTO apps context, factors such as privacy and security issues may be more critical compared to other types of technologies. This may extend the original TAM model for use in explaining the passengers' acceptance of this technology. Therefore, perceived ease of use, perceived usefulness, self-efficacy, perceived creditability and perceived risk were used in this study.

Perceived ease of use and perceived usefulness: Adopting appropriate computer technology has become

a source of competitive advantage for organization including taxi service industry. There are two major variables perceive usefulness and perceive ease of use which influence users to accept or reject computer technology (Davis, 1989). Davis (1989) refer perceive usefulness as people tend to use or not use an application to the extent they believe it will help them perform their job better. Perceive ease of use refer as people tend not to adopt and not to use particular technology if the technology is too hard to operate, even though they believe that the technology is useful.

Perceived usefulness was considered a motivation to engage with use of particular Information System (IS) that is concerned with performance as a consequence of use. Whereas perceived ease of use was regarded as an antecedent of perceived usefulness (Davis *et al.*, 1992).

Past IS research literature indicates that perceived ease of use influences perceived usefulness and these components have effect on intention to use (Venkatesh and Morris, 2000; Agarwal and Prasad, 2000; Davis *et al.*, 1992; Jackson *et al.*, 1997). As such, H_1 and H_2 are proposed:

- H_1: there is a significantly positive relationship between passengers' attitude towards MTO apps adoption and their beliefs about its perceived ease of use
- H_2: there is a significantly positive relationship between passengers' attitude towards MTO apps technology adoption and their beliefs about its perceived usefulness

Perceived self-efficacy Self-efficacy refers to an individual's judgments about their capabilities to organize and execute the behaviors needed to successfully complete a given task (Bandura, 1986). It is concerned with judgments of what individual can do with

whatever skills individual possesses (Bandura, 1986). Self-efficacy affects what behaviors people choose to perform, the amount of effort they are ready to use and the amount of time they will persist to overcome obstacles (Bandura, 1986). In the context of IS, computer self-efficacy represents an individual's perception of his or her ability to use computers to accomplish a task such as data analysis, graphic design or even programming rather than reflecting simple component skills such as turn on computer (Compeau and Higgins, 1995). In the past study on mobile banking, perceived self-efficacy was defined as the judgment of one's ability to use mobile banking (Luarn and Lin, 2005). Further, past IS studies had examined perceived self-efficacy plays an important role in understanding individual response to information technology (Compeau and Higgins, 1995; Hassan, 2007). This study has focused on whether passengers had the required knowledge, skill or ability to use MTO apps as such perceived self-efficacy for MTO apps was defined as the judgment of one's ability to use MTO apps. Hence:

- H_3: there is a significantly positive relationship between passengers' attitude towards technology adoption and their self-efficacy about using it

Perceived credibility: Meyer defined the concept of credibility as "reasonable grounds for being believed" according to Webster's New Collegiate Dictionary . In the context of IS, Wang *et al.* (2003) and Luarn and Lin (2005) defined perceived credibility as the extent to which a person believes that the use of a technology will have no privacy and security threats. Privacy commissioners around the world are closely scrutinizing mobile apps for gathering too much personal information from unaware consumers including the MTO app. There are four common issues of privacy on mobile apps including accessing the user contacts on a smartphone (including the contact information that may come from corporate email that syncs to the phone), accessing the user's calendar information, collecting or determining the user's location and tracking his movements and passing along any or all of this information to ad networks or analytics companies. In the context of MTO app, a third party can gather personal information, the use of MTO app presents potential privacy and security threats which will affect passengers' intention to use MTO app. For instance, with the MTO app, the app opens with a map showing passenger current location with the corresponding address listed at the top. These issues will be affect the decision to download and use the MTO apps.

With MTO app, personal identification data are linked to mobile apps service provider, taxi mobile apps provider can build customer profiles and gather information about the characteristics of their passengers and their taxi usage behaviors. Since the information collected is potentially available to third parties, the collection of personal information by MTO apps provider not only increase passengers' concerns about personal privacy and security but also affects their intention to use MTO apps. Hence:

- H_4: there is a significantly positive relationship between passengers' attitude towards MTO apps adoption and their beliefs about its perceived credibility

Perceived risk: Perceived risk refers to consumer's level of uncertainty regarding the outcome of a purchase decision. When consumers' perception of risk for buying a product is high, their likelihood of purchasing that product will be low (Lim, 2003). Past IS literature show that perceived risk is an important factor for consumers' acceptance of a technology including electronic commerce, online shopping and online banking (Pavlou, 2003; Lim, 2003; Kim and Prabhakar, 2000). These studies indicated that there is a negative relationship between perceived risk and the technology. As discussed MTO apps has raised many privacy and security fears since the personal information collected for the use of MTO apps can be gathered by third parties. In addition, MTO apps is perceived that it would be used to track, identify and acquire passengers' personal information in many ways. To this end, passengers may fear that apps service provider and taxi driver will use MTO apps to gather information about their characteristics and usage behaviors. This may affect passengers risk perception about MTO apps and their intention to use it. Hence:

- H_5: there is a significantly negative relationship between passengers' attitude towards MTO apps adoption and their beliefs about its perceived risk

Attitude towards adoption and behavioral intention to adopt: In general, attitude has been conceived as a person's generalized evaluation of an object. Attitudes are pre-disposition to respond favorably or unfavorably to an object, person, event, institution or another discriminable aspect of the individual's world (Ajzen, 1991). Behavioral intention on the other hand, predicts behavior on the basis of individual's attitude toward the act and individual social-normative belief (Ajzen, 1991). Azjen (1991) stated that 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. As a general rule, the stronger the intention to engage in a behavior, the more likely should be its performance.

In the context of IS adoption literature, attitude and behavioral intention relationship were two of the main concepts in many theories including TAM. There is a growing number of research to suggest that attitude towards technology use have a strong link to behavioral intention and thereafter to actual behavior (Davis, 1989; Sumak *et al.*, 2011). In this study, passengers' attitudes toward MTO apps were analyzed. In this study, attitude towards MTO apps refers to the degree to which the apps decision makers/passengers has a favorable or unfavorable evaluation or appraisal of MTO apps adoption. Similarly, intention to adopt MTO apps refers to the technology decision makers'/passengers' willingness to adopt MTO apps in general. Hence:

- H_6: there is a significantly relationship between passengers' attitude towards MTO apps technology adoption and their intention to adopt it

MATERIALS AND METHODS

A questionnaire survey was conducted in Klang valley areas especially major shopping malls and major shopping districts regardless of their demographic and geographic factors. These locations are chosen to conduct survey due to the well-populated area and convenient to gathering data. The questionnaire was distributed to respondents who own a smartphone and have an experience and ability of using a mobile apps.

A convenience sampling was chosen as it can generate a large number of questionnaires more swiftly and economically. The larger number of respondents, the more accurate data generated. A quantitative questionnaires for this research were developed based on the related prior studies (Table 1). Multiple items for each construct organized in a survey questionnaire were used for gathering data. Most theoretical constructs were assessed on the basis of a 5 point Likert type scale (1 = Strongly disagree to 5 = Strongly agree). The population under study consists of 480 questionnaires distributed, 368 were collected to the researcher. Table 1 shows the respondents' demographics, their smartphone usage and taxi riding time.

The purpose of this study were used to identify factors affecting passengers' attitude towards MTO apps adoption intention. Dependent variable for this study were measured and modified the scale developed based on the studied by Ajzen and Fishbein (1980), Azjen (1991)

Table 1: Profile of respondents

Demographic characteristics	Frequency	Percent
Gender		
Male	240	65.2
Female	128	34.8
Age		
20-29	152	41.3
30-39	24	6.5
40-49	100	27.2
50 and above	92	25
Ethic		
Malay	154	41.9
Chinese	89	24.2
Indian	65	17.6
Others	60	16.3
Own a smartphone		
Yes	368	100
No	0	0
Years using smartphone		
<1 year	32	8.7
1-2 years	117	31.8
3-4 years	102	27.7
>5 years	117	31.8
Experience using mobile apps		
Yes	368	100
No	0	0
How often you ride a taxi (a week)		
>5	132	35.9
5-10	84	22.8
11-20	38	10.3
>20	114	3

and Davis *et al.* (1992). The study depended on overall weight rating that was based on the responses received from the following statements:

- Using MTO apps is (would be) a good idea
- I like the idea of using MTO apps
- Given the chance I intend to use MTO apps
- Given the chance I predict that I should use MTO apps
- Given the chance I plan to use mobile tax apps

As for the independent variables, there are five sections presented respondents with a list of 19 statements on perceived ease of use, perceived usefulness; perceived risk, perceived credibility and perceived self-efficacy. The constructs and number of questions (Table 2) are based upon the research objectives.

The data collected were coded and keyed into the computer before analysis was carried out using a statistical package software and spreadsheet software. Data analysis methods including descriptive statistics, factor analysis, reliability and multiple regression analysis were used for this study. The factor analysis with VARIMAX rotation was used to identify the underlying dimensions of technology organizational and institutional pressures. Items were retained based on the following criteria: Items with loading of 0.50 or more were retained and items with loading of <0.50 were removed.

Table 2: Research variables and measurement

Items	Description	Sources
Perceived ease of use		
EU1	Mobile taxi app will not make confused	Davis (1989)
EU2	It is cumbersome to use MTO apps	
EU3	My interaction with MTO apps will be easy to understand	
EU4	Mobile taxi apps is easy to use	
Perceived usefulness		
CX1	Mobile taxi apps save my time	Researcher
CX2	Mobile taxi apps enable me to reach the destination more quickly	
CX3	Mobile taxi apps are more convenient than phone call to taxi centre	
Perceived self-efficacy		
SE1	Being able to use the mobile app if only there is a manual for reference	Researcher; Compeanu and
SE2	Being able to use the mobile app if there is someone else using it before trying it myself	Higgins (1995)
SE3	Being able to use the mobile app if someone for help could be called if I got stuck	
SE4	Being able to use the mobile app if someone else had helped to get started	
SE5	Being able to use the technology if someone showed how to do it first	
Perceived credibility		
PC1	Using MTO app would not divulge my personal information	Malhotra and Peterson (2006)
PC2	Mobile taxi app is secure in using other mobile apps	
Perceived risk		Son and Benbasat (2007)
PR1	I am afraid if mobile smartphone is lost or stolen, my personal data will be exposed to unauthorized users	
PR2	I am concerned about the privacy of my personal information during a transaction	
PR3	I am concerned that mobile booking apps are collecting too much on my personal information	
PR4	I am concerned that the mobile booking apps service providers will use my personal information without my authorization.	
PR5	I am concerned that unauthorized persons will have access to my personal information	
Attitude towards mobile taxi apps		
AT1	Using MTO apps is (would be) a good idea	Ajzen and Fishbein (1980)
AT2	I like the idea of using MTO apps technology	
Intention to adopt mobile taxi apps		
IA1	Given the chance I intend to use MTO apps	Son and Benbasat (2007)
IA2	Given the chance I predict that I should use MTO apps	
IA3	Given the chance I plan to use MTO apps	

RESULTS AND DISCUSSION

In order to explore whether the independent variables of five factors had statistically significant impacts on the dependent variable, attitude toward MTO apps, correlation and multiple regression analysis was utilized. Five factors derived from the factor analysis were used as the input variables in the analysis. The results of the regression analysis are presented in Table 3.

As hypnotized, perceived risk (H_1) was found to have significant negative influence on passengers' attitude towards MTO apps adoption ($\beta = 0.249$; p<0.001). This finding confirmed a similar result by Pavlou (2003) who indicated that passengers' high level of perceived risk of a technology is a barrier to their acceptance of that technology. The results of the study suggested that when the passengers believe that MTO apps are not effective as they think and when they believe that MTO apps have uncertainties, then their attitude towards MTO apps adoption will be affected negatively (Table 4).

The result of testing H_2 and H_3 indicate that, there are significant relationship between perceived usefulness, perceived ease of use and the attitude towards MTO ordering apps adoption intention. Correlation analysis shows perceived usefulness having $\beta = 0.299$; p<0.001

Table 3: Pearson correlation coefficient between MTO apps adoption intention and other factors

Variables	Attitude towards MTO apps (R)
Perceived risk	0.218
Perceived usefulness	0.444
Perceived ease of use	0.294
Perceived self-efficacy	0.160
Perceived credibility	0.179

Table 4: Regression results

Variables	Beta	t-values	p-values
Perceived risk	0.249	3.824	0.000
Perceived usefulness	0.299	4.493	0.000
Perceived ease of use	0.150	2.967	0.003
Perceived self-efficacy	0.269	4.276	0.000
Perceived credibility	0.126	2.659	0.008

and perceived ease of use having $\beta = 0.150$; p<0.005. This suggests that the usefulness and ease of use of a technology would be promising for the passengers' attitude toward MTO apps adoption and their adoption intention decision. This is consistent with the past studies on IS confirming that perceived usefulness and perceived ease of use were the predominant factors in assessing attitude and behavioral intention toward technology adoption (Vijayasarathy, 2003; Venkatesh and Morris, 2000). Another studies conducted by using TAM have identified perceived ease of use and perceived

usefulness were the most important factors affecting attitude toward technology (Chen and Tan, 2004; Hossain and Prybutok, 2008).

The support of H_4 (perceived efficacy) is in line with the results found by Hasan (2007), perceived self-efficacy have a positive significant impact on passengers' attitude towards MTO apps adoption ($\beta = 0.269$; p>0.001). This is consistent with the study done by Lauran and Lin (2005) which concluded that perceived self-efficacy play an important role in passengers' attitude towards adoption and intention to adoption information technology. Passengers believe that the required knowledge, skill or ability to use MTO apps is an important factor affecting their attitude towards mobile apps adoption.

The results of the study indicated that perceived credibility (H_5) had significant positive impact on passengers' attitude towards MTO apps adoption. Regression analysis showed perceived credibility having $\beta = 0.126$; p>0.05. This research therefore further proves the earlier finding that showed by Wang on mobile banking studies.

Finally, past researchers in the field of information technology have investigated the relationship between attitude and behavioral intention and have found significant results (Chen and Tan, 2004; Vijayasarathy, 2003). Consistent with these studies, the findings of the study indicated that passengers' attitude will influence MTO apps adoption intention having ($\beta = 0.982$; p>0.001). Therefore, H_6 is accepted.

CONCLUSION

The finding of this research may have implication for smartphone users that had not yet adopted and had an intention to adopt MTO app and were looking for more benefits from MTO apps adoption. Passengers' perception of risk about the MTO apps will be high when they face uncertainty and undesirable consequences because of the usage of their technologies. As discussed MTO apps can be used to track, identify and acquire personal Information in many ways. Since, the third party can gather personal information intentionally or unintentionally, the use of MTO apps raises many potential privacy and security issues which affect passengers' attitude towards MTO apps adoption and consequently their intention to adopt them. It is important for mobile apps service providers to develop and design the apps with valuable functions and a perceived trustworthiness to overcome security and privacy challenges that MTO apps users may face. It is recommended that mobile service providers should upgrade their security procedures and policy and emphasizes the security and privacy of MTO apps to their passengers through email, sms and social media platform. By using MTO apps, taxi drivers can create better communication with the passengers which will help to increase their service quality and improve customer relationship. To be able to do this, drivers should be capable of identifying the factors that affect their passengers' attitude towards MTO apps adoption and their intention to adopt the mobile apps.

Government ministries and agencies that responsible for building a better image for the taxi service industry should focus their effort on resting the literacy, especially in terms of MTO apps adoption. This is because findings of the study showed that factors such as perceived ease of use, perceived usefulness, perceived risk and perceived credibility contribute to the passengers' adoption of MTO apps. Government should take steps to create awareness to passengers so as to educate them about the benefits and importance of MTO apps. The MTO apps helping to regulate drivers by registering them to the service and allowing them to be tracked as they travel. In addition, reduce the drivers' who insisted on charging a significant higher flat fee and refusing to use the official meter for the ride. Hence, improve the Malaysian taxi service industry image and reputation.

Compared to original TAM model, the model developed in this study suggested that in addition to perceived ease of use and perceived usefulness, other factors such as perceived risk and perceived credibility contribute to the passengers' intention to adopt MTO apps. This finding contributes to the theoretical elucidation of passengers' adoption of other IT innovations.

Although, this study has investigated factors such as perceived ease of use and perceived usefulness, there may be other potential determinations of MTO apps adoption intention. Hence, future research should examine this possibility. Finally, this study was a perception based study and actual MTO apps use was not analyzed in this study. Future research which will measure the actual use of MTO apps, may provide more accurate and valid results for passengers' perception about MTO apps.

REFERENCES

Agarwal, R. and J. Prasad, 2000. A field study of the adoption of software process innovations by information systems professionals. IEEE. Trans. Eng. Manage., 47: 295-308.

Ajzen, I. and M. Fishbein, 1980. Understanding Attitudes and Predicting Social Behaviour. 1st Edn., Prentice-Hall, New Jersey, Englewood Cliffs, ISBN-13: 978-0139364358, Pages: 278.

Ajzen, I., 1991. The theory of planned behavior. Organiz. Behav. Hum. Decis. Process., 50: 179-211.

Bandura, A., 1986. Social Foundations of Thought and Action: A Social Cognitive Theory. Prentice Hall, Englewood Cliffs, NJ., USA., ISBN-13: 978-0138156145, Pages: 617.

Chen, L.D. and J. Tan, 2004. Technology adaptation in E-commerce: Key determinants of virtual stores acceptance. Eur. Manage. J., 22: 74-86.

Cho, Y.C. and J. Agrusa, 2006. Assessing use acceptance and satisfaction toward online travel agencies. Inf. Technol. Tourism, 8: 179-195.

Compeau, D.R. and C.A. Higgins, 1995. Computer self-efficacy: Development of a measure and initial test. MIS Q., 19: 189-211.

Davis, F.D., 1989. Perceived usefulness, perceived ease of use and user acceptance of information technology. MIS. Quart., 13: 319-340.

Davis, F.D., R.P. Bagozzi and P.R. Warshaw, 1992. Extrinsic and intrinsic motivation to use computers in the workplace1. J. Appl. Soc. Psychol., 22: 1111-1132.

Fichman, R.G., 1992. Information technology diffusion: A review of empirical research. Proceedings of the Thirteenth International Conference on Information Systems, Dec. 1992, Dallas, Texas, United States, pp: 195-206.

Hasan, B., 2007. Examining the effects of computer self-efficacy and system complexity on technology acceptance. Inf. Resour. Manage. J., 20: 76-88.

Hossain, M.M. and V.R. Prybutok, 2008. Consumer acceptance of RFID technology: An exploratory study. IEEE. Trans. Eng. Manage., 55: 316-328.

Jackson, C.M., S. Chow and R.A. Leitch, 1997. Toward an understanding of the behavioral intention to use an information system. Decis. Sci., 28: 357-389.

Jeyaraj, A., J.W. Rottman and M.C. Lacity, 2006. A review of the predictors, linkages and biases in IT innovation adoption research. J. Inform. Technol., 21: 1-23.

Kim, K. and B. Prabhakar, 2000. Initial trust, perceived risk and the adoption of internet banking. Proceedings of the 21st International Conference on Information Systems, December 10-13, 2000, Brisbane, Queensland, Australia, pp: 537-543.

Kwon, H.S. and L. Chidambaram, 2000. A test of the technology acceptance model: The case of cellular telephone adoption. Proceedings of the 33rd Annual Hawaii International Conference on System Sciences, January 4-7, 2000, IEEE, Japan, ISBN: 0-7695-0493-0, pp: 1-7.

Lim, N., 2003. Consumers perceived risk: Sources versus consequences. Electron. Commerce Res. Appl., 2: 216-228.

Luarn, P. and H.H. Lin, 2005. Toward an understanding of the behavioral intention to use mobile banking. Comput. Hum. Behav., 21: 873-891.

Malhotra, N.K. and M. Peterson, 2006. Basic Research Marketing: A Decision-Making Approach. 2nd Edn., Pearson Education, New York, USA., ISBN: 9780131525429, Pages: 631.

Pavlou, P.A., 2003. Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. Int. J. Electron. Commer., 7: 101-134.

Rainer, R.K., C.G. Cegielski, H.I. Splettstoesser and R.C. Sanchez, 2013. Introduction To Information Systems: Supporting and Transforming Business. 3rd Edn., John Wiley and Sons, New Jersey, USA., ISBN: 978-1-118-47699-4, Pages: 447.

Son, J.Y. and I. Benbasat, 2007. Organizational buyers adoption and use of B2B electronic marketplaces: Efficiency-and legitimacy-oriented perspectives. J. Manage. Inf. Syst., 24: 55-99.

Sumak, B., M. Hericko, M. Pusnik and G. Polancic, 2011. Factors affecting acceptance and use of moodle: An empirical study based on TAM. Inf., 35: 91-100.

Thiesse, F., 2007. RFID, privacy and the perception of risk: A strategic framework. J. Strategic Inf. Syst., 16: 214-232.

Venkatesh, V. and M.G. Morris, 2000. Why don't men ever stop to ask for directions? Gender, social influence and their role in technology acceptance and usage behavior. MIS Quart., 24: 115-139.

Vijayasarathy, L.R., 2003. Shopping orientations, product types and internet shopping intentions. Electr. Markets, 13: 67-79.

Wang, Y.S., Y.M. Wang, H.H. Lin and T.I. Tang, 2003. Determinants of user acceptance of Internet banking: An empirical study. Int. J. Service Ind. Manage., 14: 501-519.