A COMPARATIVE STUDY ON THE DETERMINANTS OF CONSUMER'S BEHAVIOURAL INTENTION TO ADOPT E-HAILING APPLICATION: MALAYSIA VS SINGAPORE

BY

CHEONG JIA ERN
LEE JING HENG

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DEPARTMENT OF INTERNATIONAL BUSINESS

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DECLARATION

We hereby declare that:

(1) This undergraduate FYP is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this FYP has been submitted in support of any application for any other degree of qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the FYP.

(4) The word count of this research report is 11,103.

Name of Student:	**Student ID:**	**Signature:**
1. Cheong Jia Ern	1501840	
2. Lee Jing Heng	1605781	

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
BI	Behavioural Intention
EE	Effort Expectancy
FC	Facilitating Condition
IT	Information Technology
PC	Personal Computer
PE	Performance Expectancy
PR	Perceived Risk
SI	Social Influence
SPSS	Social Package for Social Sciences
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
US	United State
UTAUT	Unified Theory of Acceptance and Use of Technology Model
VIF	Variance Inflation Factor

PREFACE

This research was carried out with the objectives of finding out the relationship between the factors affecting consumer's behavioural intention to adopt e-hailing application services among users in Malaysia and Singapore. In order to complete our programme, Bachelor Degree of Business International (Hons), it is compulsory to complete the relevant research involves international aspects. This research is carried out because there is a research gap in Singapore where there was no similar research carried out by others to understand the factors of e-hailing users in Singapore. It is important to find out the significance of the factors in the industry.

In the current era, digitalization and mobile technology result in the booming of the sharing economy. The penetration rate of e-hailing industry in Malaysia is low. It means that there is a huge growth opportunity in the market. The research result is important to firms that are competing in both countries, or have the intention to enter the market. Other than that, Singapore is well known to have very convenient public transport system and e-hailing regulation for consumers that encourage the use of such services. It is crucial to have research data so that firms or researchers can find out what is the reason for such a scenario.

In order to achieve the objective, five independent variables were proposed and analysed to determine the relationship with the behavioural intention of Malaysian and Singaporean in adopting e-hailing application. The independent variables were performance expectancy, effort expectancy, facilitating conditions, social influences and also perceived risk.

ABSTRACT

This research investigated the determinants that affect the behavioural intention of e-hailing users in Malaysia and Singapore. UTAUT model was adopted. The independent variables were performance expectancy, effort expectancy, facilitating conditions, social influences and also perceived risk; and the dependent variable was behavioural intention to adopt e-hailing application. Primary data were collected through online questionnaires, Google Form. The target respondents were e-hailing users in Malaysia and Singapore. The questionnaires were sent out to the target respondents through social media platform, referrals, and also natural contacts. This research used a convenience sampling technique. 203 responses were collected from Malaysia and 104 were collected from Singapore. The collected data was processed by using the Statistical Package for the Social Sciences (SPSS) programme. The results were then compared with the previous similar studies done by other researchers.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

In the past decade, the transportation trend has changed significantly, especially in the town areas. Since Uber entered into Malaysia market in 2013, the e-hailing industry has gained huge traction among Malaysians due to the dissatisfaction with the traditional taxi service in the country. Singapore, as one of the most tech savvy country, the digitalization and mobile technology also made a huge impact on their citizens to adopt e-hailing application.

This topic has provided an introduction to the background of e-hailing service and some insight of this industry in Malaysia and Singapore. Research problem, research objectives and research questions were laid out to provide the motivations behind this study.

1.1 Research Background

The e-hailing introduction and e-hailing industry in Malaysia and Singapore are described to allow the readers gain better understanding of the background of this research.

1.1.1 Introduction to E-Hailing

Sharing economy refers to online activities that involve the act of sharing and exchanging of under-utilized assets for money (Taeihagh, 2017). With the increasing popularity of these services, owners are able to take advantage and rent out their unused car, house, equipment, and other personal possessions to strangers who require these for temporary usage. It

is a win-win situation for both owners and users. According to Juniper Research (2017), the revenue of the platform providers in sharing economy is forecasted to exceed $40 billion in 2022, drastically increasing from $18.6 billion in 2017. Some of the globally famous companies in the sharing economy are Uber and Airbnb which provides ride-sharing and homestay experience respectively.

According to a study conducted by ABI Research (2018), Asia constituted up to 70% of completed ride-hailing trips in 2017, followed by 5% in North and Latin America. In general, the report illustrated that the ride-hailing market in Asia is expanding significantly in a rapid pace. There is various type of ride-hailing services, including car sharing, station-based, car rental and e-hailing. Based on another research done by Markets and Markets (2017), the report has predicted e-hailing to dominate the market of ridesharing and the Asia-Pacific market is projected to grow significantly to the largest market size, resulting from the high population density and the urbanization growth in developing economies. E-hailing service has revolutionised the traditional way to commute. It provides a more convenient and cheaper alternative to the conventional taxi service. A passenger is able to request for a ride through a mobile application from any location at any time and the ride will be available within minutes.

ITF (2016) explained that the technological development utilized by e-hailing applications is able to connect users and available vehicles more easily, with the key features including cellular network and Wi-Fi, global positioning system (GPS), digital payment system, pricing and dispatching algorithms. These technologies allow passengers and drivers who downloaded the application to match on-demand trip requests to travel from one point to a desired destination. An e-hailing application will evaluate and provide information about the estimated traveling time and fare price after the passenger specifies the drop off location. Once the request is matched with a designated driver, the passenger will be able to obtain information including the type of vehicles of the driver and its license plate number, estimated arrival time and the live location which displays the route the

driver is taking to pick up the passenger. After the service and money transaction, both passengers and drivers can rate each other which is visible to other passengers or drivers on the platform.

1.1.2 E-Hailing in Malaysia

Malaysia has a population size of approximately 31 million. According to Statista (2019), the number of ride-hailing users in 2018 was 2.7 million and is expected to reach 5.7 million by 2023. Most users who are 25-34 years old constitutes of 35.4% in the Malaysian ride-hailing industry, followed by 22.9% and 21.6% of users who are in the age range of 35 to 44 years and 18 to 24 years respectively (Statista Global Consumer Survey, 2018). Furthermore, majority of e-hailing users in Malaysia are from the medium and high-income class group with 29.5% and 41.7% respectively. Malaysia is at the 7th rank of Global Revenue Ranking in the ride-hailing industry and the total revenue in 2019 is forecasted up to US$855 million (Statista, 2019).

Grab, previously known as GrabTaxi, was created in 2011 by Anthony, the youngest grandson of the founder of Tan Chong Motor. The company has moved its headquarter to Singapore in year 2014 and extended its operations to Singapore, Indonesia, Philippines, Vietnam and Thailand. Grab has been the dominant player in the Malaysian e-hailing market since the exit of Uber from Southeast Asia in March 2018 (Wong, 2017). According to Pikri (2018), there are other e-hailing businesses in Malaysia, including MyCar, JomRides, Mula, Dacsee, Riding Pink and Diffride. However, they are no match to Grab. After realizing the consumer preference in this new way of commuting, the Malaysian Transport Ministry is encouraging taxi drivers to register on e-hailing platforms for more passengers and higher income (Cheah, 2018). The government policy indicated their support and showed that there are plenty of opportunities for the growth of e-hailing businesses.

1.1.3 E-Hailing in Singapore

According to the algorithm-based calculation from Statista (2019), the total revenue in Singapore ride-hailing industry amounts to US$1,064 million in 2019 and it is expected to rise to US$1,416 million in 2023. The penetration of ride-hailing users is 32.2% of its 5.6 million population and is forecasted to reach up to 39.9% in 2023.

Similar to Malaysia, Grab has been dominating Singaporean e-hailing market since Uber's exit from Southeast Asia in 2018. Grab held more than 80% of ride-hailing market share in Singapore after the merger with Uber and this has violated the anti-trust law in Singapore. Based on Lee (2018), on 24 September 2018, the company was fined 13 million Singapore dollars due to its dominant market position and resulting in an anti-competitive situation towards new entrants for e-hailing industry. Other e-hailing players in Singapore includes Ryde, TADA, Filo, Kardi, MVL, Jugnoo etc.

Grab's closest competitor, Go-Jek is an Indonesian e-hailing company and has captured most of the market share in the biggest e-hailing market in Southeast Asia, Indonesia. The company has launched its e-hailing application in Singapore on 29 November 2018. Go-Jek's entry into Singapore aimed to challenge Grab's dominant market position. Go-Jek is the first Indonesia unicorn startup, valued at US$5 billion with Google, Tencent and Temasek as its investors (Channel News Asia, 2018).

1.1.4 Risk in E-hailing Applications

Figure 1.1: Hot Topics on E-Sharing in Social Media

Source: Meltwater

An international media intelligence company, Meltwater, conducted a research and found that Malaysians were worried with e-hailing driver's behaviour and used terms such as 'rude', 'unsafe' and 'dangerous' to describe the driver's attitude (Today World, 2018). The concern has surpassed Indonesia and Singapore. As shown in Figure 1, Meltwater found that 73% of the ridesharing community buzz on social media was centred around the driver's conduct, followed by 12% and 7% for pricing and promotions respectively where the rest of the topics include convenience and customer service. Driver's bad attitude is claimed to be attributed to the stressful and incentive-driven environment to achieve challenging targets in the e-hailing industry.

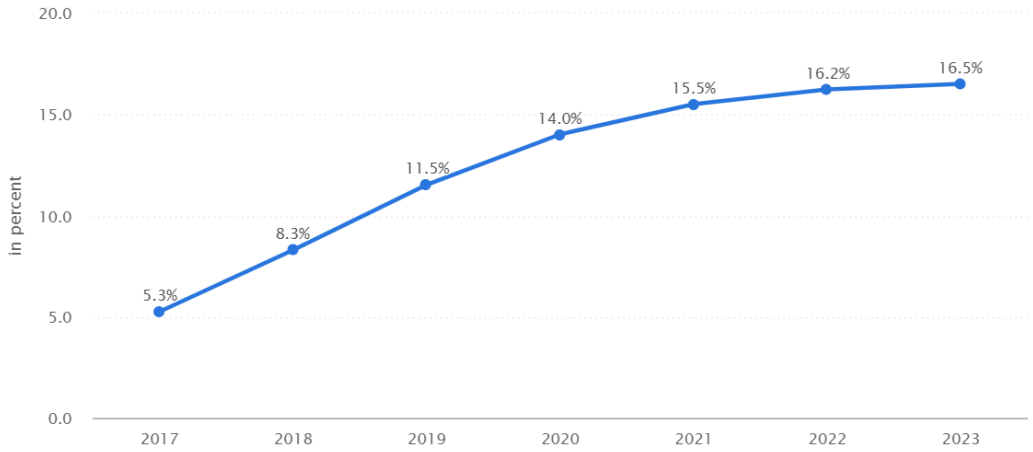
In fact, many controversial cases in Malaysia that concern with safety have been reported. According to Timbuong (2017), in June 2017, a female passenger was allegedly raped by her Grab driver on her way home. Besides, a pregnant woman was being pointed with a knife and robbed by an Uber driver and his accomplice three weeks before the raping incident. On 27 January 2019, MyCar lodged a police report as a passenger complained that she was offered sexual services by one of MyCar's drivers (The Star Online, 2019). To ensure the safety of e-hailing passengers, the Malaysian

government has introduced regulations. Some of the requirements include drivers to pass criminal records and medical checks as well as attending training program.

Even though the government has implemented new regulations, this research would like to investigate the passenger's perception of risk towards e-hailing services in Malaysia and Singapore.

1.2 Research Problems

Figure 1.2: Penetration Rate of Malaysia E-Hailing Application



Source: Statista. (2018). *Ride-hailing in Malaysia*.

Malaysia has a population size of approximately 31 million. However, the penetration rate of e-hailing application in the country is low. Hence, it indicates that there is a huge growth opportunity in Malaysia. According to Statista (2018), the drastic increase of the forecasted user penetration rate and is as shown in the above figure. Started off at 5.3% users in 2017. The penetration increases dramatically to 8.3% in 2018 and it was expected to reach 16.5% in 2023. The same source also mentioned that the penetration rate of e-hailing users was at 32.2% in 2019 and was forecasted to increase up to 39.9% by 2023. This showed that e-hailing industry in both Malaysia and Singapore is a lucrative market and has huge growth opportunities. Hence, this research aimed to help marketers of e-hailing firms to identify the factors of an individual's intention to adopt e-hailing applications in these two neighbouring countries.

Furthermore, there are significant amount of news debating about the safety and risk on using e-hailing services in Malaysia and also Singapore whether towards the customer or service provider that might affect the overall intention to adopt mobile e-hailing application. According to The Star Online, there were a case where the customer claimed that the driver raped her in the car and also there are customer robbing the e-hailing driver (Karim, 2019). Generally, e-hailing industry in

Singapore is relatively safer than Malaysia due to regulations and also law governing it (Lee, 2019).

Therefore, this research focuses on providing an insight into factors that determine Malaysian and Singaporean consumer's intention to adopt an e-hailing application. The marketers can enhance their knowledge through this research and eventually leads to the improvement of the general standards of the product in the market by understanding and fulfilling the consumer's desire.

1.3 Research Objectives

The main objective of this research is to investigate the factors affecting Malaysian and Singaporean consumer's intention to use e-hailing applications. To find out what are the determinants, the researchers of this study performed extensive literature review of previous research and the objectives were stated as following:

1. To identify the factors that influencing the consumer's behavioural intention to use an e-hailing application in Malaysia and Singapore.
2. To understand the significance of these variables and how can this information help the marketers of e-hailing companies in Malaysia and Singapore improve the user's intention to adopt an e-hailing application.

1.4 Research Questions

Other than increasing business value to companies in the industry, e-hailing is also beneficial to the environment with reduced carbon footprint as well as providing convenience to its users. This research demonstrates how some of the factors impact the user's intention to use an e-hailing application. The following questions will be discussed in this study:

1. What are the factors affecting an individual's intention to use an e-hailing application in Malaysia and Singapore?
2. Are there any differences between the behaviour intention of consumers in these neighbouring country, Malaysia and Singapore?
3. How can the marketers improve the user's intention to adopt an e-hailing application in Malaysia and Singapore?

1.5 Research Significance

According to The Star Online, Lee, Giles and Amin (2018) found that Grab was expanding aggressively in Southeast Asia, where its revenue has tripled in 2018 and has a total of 80 per cent market share in the Singapore ride-hailing service industry. As the result, Grab is the biggest e-hailing player in both Singapore and Malaysia today. This has threatened the position of its biggest Indonesian rival company, Go-Jek and it responded by entering into Singapore, Thailand, Vietnam and Philippines but not Malaysia market (Lee et al., 2018). This research study can help both Grab and Go-Jek to have a deeper understanding towards Singaporean and Malaysian consumers intention to adopt the e-hailing application for defencing its competitive advantages. It can also act as an insight for other firms in the same industry to strategize their actions to compete in both countries by improving their product features based on the factors consumers deemed important which eventually resulting in an overall improvement of standards of e-hailing applications.

In Malaysia, none of the e-hailing companies are able to compete with Grab. These competitors can enhance their knowledge of consumer's behaviour in the e-hailing industry in order to step up their game and establish a better market position. Undeniably, Grab can also take advantage of this research to improve its product and enhance its dominant position in Malaysia. Although Go-Jek does not have an expansion plan to Malaysia anytime soon, the company can still make use of this research and study the differences of Malaysian and Singaporean consumers behaviour in order to design a more comprehensive market entry plan to Malaysia

in the future. Risks and uncertainties of Go-Jek entering into a new foreign market can be reduced.

Besides, this research aimed to fill in the research gap where there is no published journal article that look into the intention to adopt e-hailing application in Singapore. Therefore, this research is able to provide information regarding e-hailing users in Singapore after collecting and analysing the results.

Last but not least, this research provides insights to other researchers and improves their knowledge towards the sharing economy in the context of the e-hailing service industry, specifically in Malaysia and Singapore. The researchers can better understand the way the independent variables (performance expectancy, effort expectancy, social influence, facilitating condition and perceived risk) affect Malaysian and Singaporean consumers' intention to adopt an e-hailing application.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

Under this chapter, background of sharing economy and e-hailing application are explained. Five independent variables and one dependent variable were thoroughly reviewed based on previous studies and the relationship of these variables was established. A theoretical framework was proposed.

2.1 Overview on Sharing Economy

2.1.1 Background and Definition of Sharing Economy

Sharing economy has been drawing significant attention especially many companies desired to take advantage of the positive representation of the word "sharing" and the drastic increase in sharing activities (Schor, 2014). Before looking into the definition of sharing economy, it is important to discover the meaning of the term "sharing". Belk (2007) suggested that the act of sharing highlighted marketplace exchange and gift giving through the practice of recirculation of own goods to others or utilizing the assets of others for own benefit.

According to Frenken and Schor (2017), the term "sharing economy" has been widely spread but in fact, the definition remains ambiguous due to misinterpretation by the public and many academicians. They perceived sharing economy as trendy, innovative and required technological sophistication. On the contrary, human beings have always been sharing since the past few hundred thousand years as it is the root of economic activities (Price, 1975).

The sharing economy is defined as "consumers granting each other temporary access to under-utilized physical assets, possibly for money" (Frenken et al, 2017). Taeihagh (2017) mentioned that sharing economy is a broad category with a range of meanings, referring to the utilization of resources through online activities involving sharing, exchanging and renting, without transferring ownership of goods permanently.

The concept of "stranger sharing" is discussed in Schor (2014) where many sharing platforms presently simplify sharing of goods and services between two or more strangers. These activities significantly increased a person's security risk where strangers share accommodations, transportations, working spaces and many other services. At the same time, these platforms reduce risks and improves their operations by communicating with users with feedback and ratings. This contemporary sharing concept deploys technology, market and knowledge to bring strangers together.

Schor (2014) group activities of sharing economy into four large categories: redistribution of secondary or unwanted goods (i.e. Craigslist, eBay), increased the usage of durable assets (i.e. Airbnb, Uber), trading of services (i.e. Time banking, TaskRabbit), and sharing of productive assets. This research will be focusing on the utilization of the durable assets where innovative digital platforms allow people to possibly gain income by offering affordable access to goods and services.

2.1.2 Background and Definition of E-hailing Application

Many misunderstood that car sharing is a new trend. In fact, this service started since many decades ago. In 1948, car sharing service was first initiated in Zurich (Shaheen, Sperling and Wagner, 1999).

The term "shared mobility" refers to the modern transportation strategy which allows a user to obtain temporary access to vehicles on an on-demand

basis (Shaheen, Chan, Bansal, and Cohen, 2015). Shaheen et al. (2015) stated that shared mobility includes "carsharing, bikesharing, ridesharing (carpooling and vanpooling) and on-demand ride services."

According to Joia and Altieri (2017), the letter "e" refers to electronic and the word "hail" is known as the process of making a gesture to stop an approaching taxi. Hence, the process of a car, taxi, or any other form of vehicle picking up a passenger from a request made through a computer or mobile device is known as e-hailing. Furthermore, Ruangkanjanases and Techapoolphol (2018) defined e-hailing as a process of requesting a taxi through mobile devices, namely smartphones, tablets and mobile PCs.

With the goal to connect drivers and passengers directly through the mobile application, the first e-hailing application (EHA), My Taxi, was created in Germany in 2009 (Joia and Altieri, 2018). Since then, the adoption of e-hailing application has increased rapidly around the world. Grosse-Ophoff, Hausler, Heineke, and Möller (2017) mentioned that the shared mobility market in the United States, Europe and China was approximately 54 billion dollars and it would continue to increase significantly in the future. From 2015 to 2030, the market is estimated to reach 28 percent annual growth under the most optimistic scenario (Grosse-Ophoff et al., 2017).

2.2 Global Trends in the Sharing Economy

2.2.1 Reduction of Private Vehicle Ownership

The rise of e-hailing platform has affected consumer behaviour in many ways.

Hampshire, Simek, Fabusuyi, & Chen (2016) has studied more than 1200 respondents in Austin, Texas and found that ride-sourcing companies such as Uber and Lyft decreased car ownership. The research revealed that after

Uber and Lyft removed drivers from Austin, 41 percent of the respondents switched to their own vehicle and 9 percent bought a car (Hampshire et al., 2016).

Furthermore, many studies in several Europe countries (Loose, 2010) including the United Kingdom (Steer Davies Gleave, 2015a, 2015b, 2015c), France (6t-bureau de recherche, 2014) as well as Canada (Engel-Yan, and Passmore, 2013; Klincevicius, Morency, and Trépanier, 2014; Namazu, and Dowlatabadi, 2018) and the United States (Katzev, 2003; Cervero, and Tsai, 2004; Lane, 2005; Cervero, Golub, and Nee, 2007) have empirically demonstrated that car-sharing services lowered private car ownership.

According to Goldman Sachs Global Investment Research (2017), there might be a reduction of car ownership in developed markets as evidence showed that car utilization in the US has declined and the younger generations are less car-dependent. However, car penetration in emerging markets such as China continues to increase due to the rise of middle classes (Goldman Sachs, 2017).

2.2.2 Decline of Younger Generations with Driving Licenses

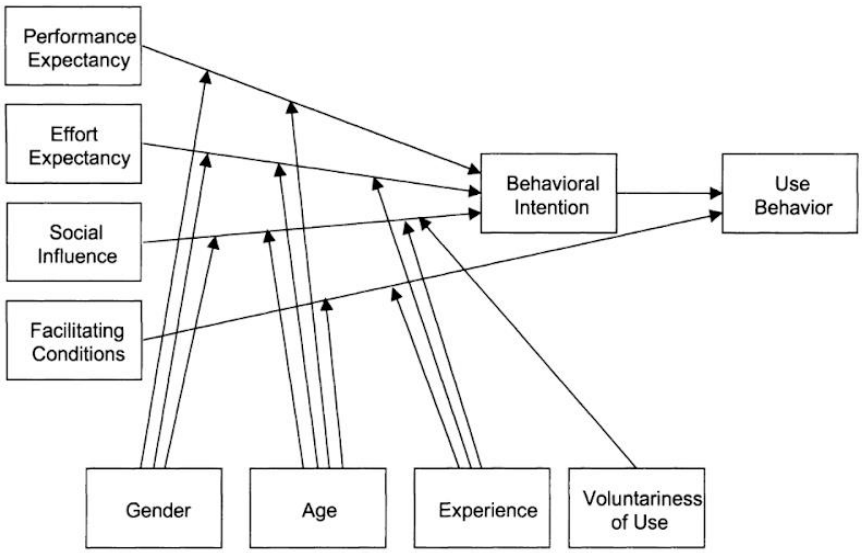
A study conducted by the academics from the University of Oxford and the University of West of England found that the changes in transport and mobility have influenced the travel behaviour of the younger generations (Chatterjee et al., 2018). Evidence has shown that the England license holders of 21-29 years old in 2014 (63%) was far less compared to 1992 (75%) while 48% of 17-20 years old had licences in 1992 but the figure drops to 29% by 2014 (Chatterjee et al., 2018). The report also suggested that Generation X used on-demand ride services to replace driving cars, on the other hand, such services are used by the millennials to avoid walking and taking public transport. Among other reasons, Chatterjee et al. (2018) revealed that the current social-economic state, rising urbanisation and

public transport links also played a role in the dramatic decline of millennials with driving licenses.

Apart from the United Kingdom, the United States encountered the same trend where a survey conducted by researchers from the Transportation Research Institute at the University of Michigan found that there was a huge drop of young Americans obtaining drivers' licences over the last three decades (Sivak & Schoettle, 2016). Americans ages 16 has decreased 47% from 1983 to 2014 whereas those who were 20-24 years old and 30-34 years old have declined 16% and 10% respectively (Sivak et al., 2016). The main factors listed in the survey was that the respondents have not enough time or simply too busy (37%), followed by the cost of maintaining a vehicle (32%) and the ease of getting transportation from others (31%).

2.3 Underlying Theory

Figure 2.1: Unified Theory of Acceptance and Use of Technology (UTAUT) Model



Source: Venkatesh et al. (2003).

Venkatesh, Morris, Davis and Davis (2003) integrated 8 IT models into a unified model, the Unified Theory of Acceptance and Use of Technology (UTAUT). The 8 IT models were listed as follow:

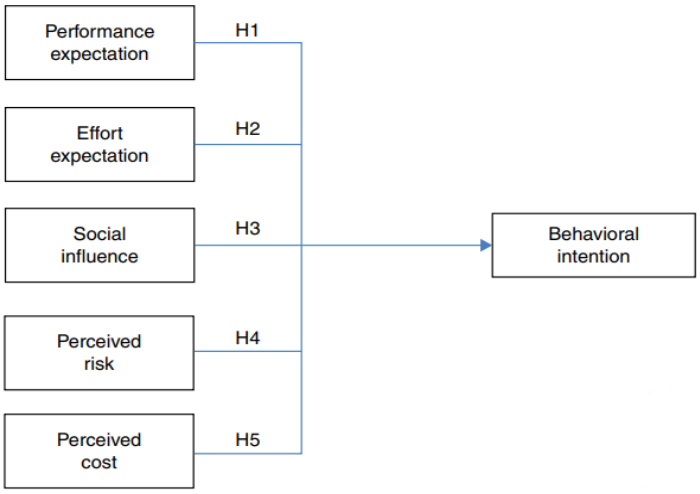
I. Theory of Reasoned Action (TRA)
II. Technology Acceptance Model (TAM)
III. Motivational Model (MM)
IV. Theory of Planned Behaviour (TPB)
V. Combined TAM and TPB (C-TAM-TPB)
VI. Model of PC Utilization (MPCU)
VII. Innovation Diffusion Theory (IDT)
VIII. Social Cognitive Theory (SCT)

The intentions of a user to use a new information system technology and their usage behaviour can be explained by UTAUT. The UTAUT suggested that the effort expectancy (EE), facilitating conditions (FC), performance expectancy (PE) and social influence (SI) are the 4 core determinants affecting the behavioural intention (BI) and usage behaviour towards technology (Venkatesh et al., 2003). These factors are affected by 4 moderators, namely gender, age, experience and voluntariness of use. The researchers claimed that the model is able to explain up to 70% of variance (adjusted R^2) in BI and about 50% of actual use. The journal has been cited in more than 28,000 journal articles to date, which can consider an impressive number due to many other acceptance theories in the literature.

2.4 Theoretical Framework Review

2.4.1 Review of Theoretical Framework Proposed by Moriguchi (2016)

Figure 2.2: Theoretical Framework proposed by Moriguchi (2016)

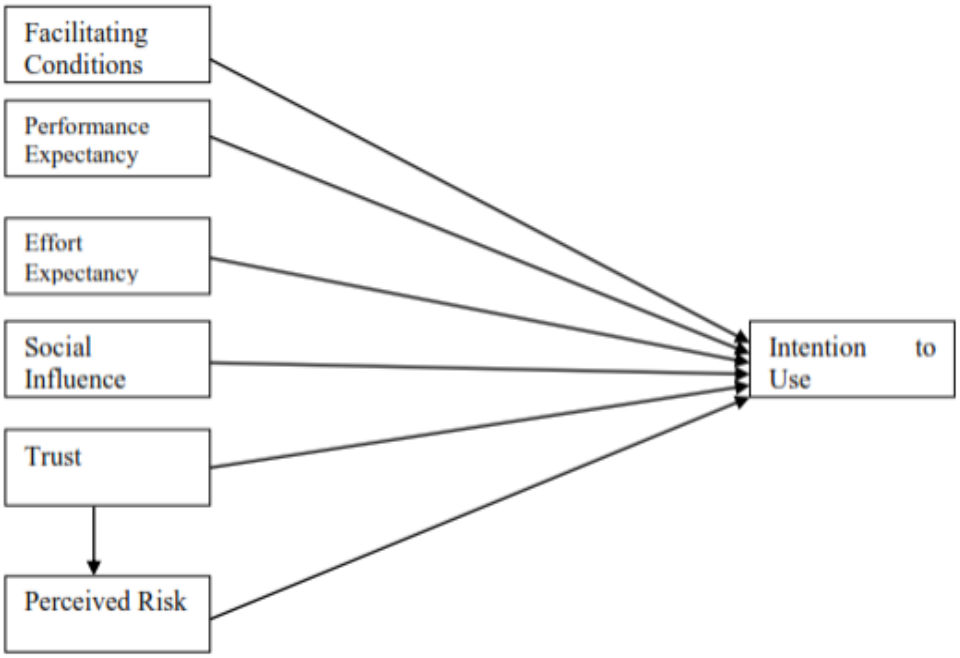


Source: Moriguchi (2016)

Moriguchi (2016) has conducted a study on intention of adoption of mobile payment by using UTAUT model. From the group of data gathered from 605 mobile customer as respondent from a mobile technology company in Brazil. As the result, effort exaptation, performance expectancy and also social influence has significant impact on the behavioural intention to adopt mobile payment. The mentioned 3 variables had a positive relationship with the intention to adopt mobile payment; on the other end, the perceived risk was shown to have significant impact but opposite relationship effect on the intention to adopt mobile payment. The only variable that was not significant enough to impact the intention of adopting mobile payment was perceived cost.

2.4.2 Review of Theoretical Framework Proposed by Tossy et al. (2014)

Figure 2.3: Theoretical Framework Proposed by Tossy et al. (2014)

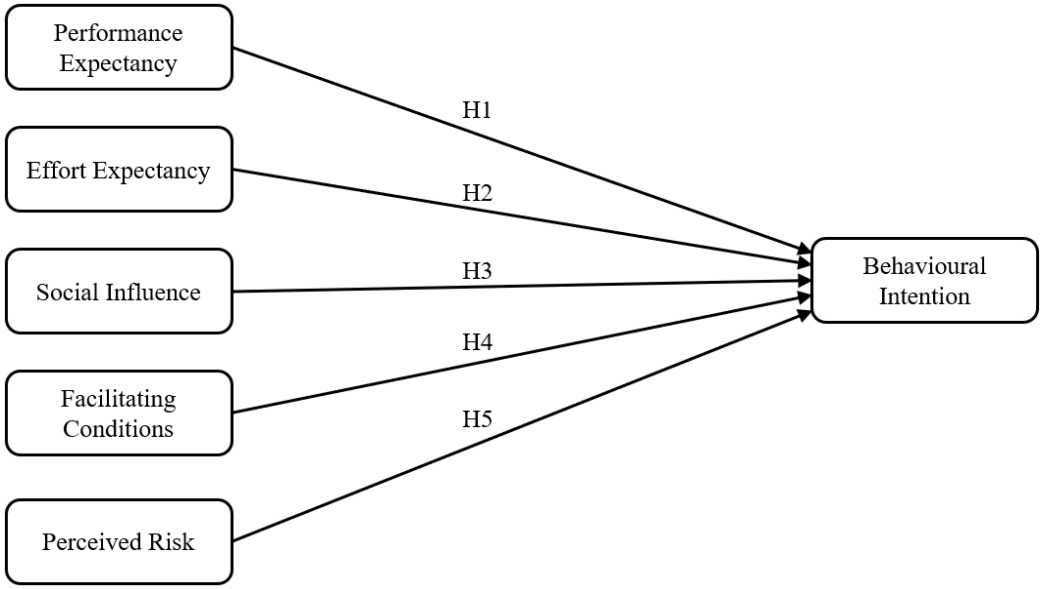


Source: Tossy (2014)

Tossy et al. (2014) conducted a study on mobile payment application for primary and secondary student on examination fees in Tanzania students by using UTAUT model. From the data collected, there are no collinearity between all the determinants because the VIF threshold of 5. As results, the facilitating condition, effort expectations, trust with the behavioural intention, and trust with perceived risk are having negative relationships; whereas effort expectancy and also social influences are having positive relationships with behavioural intention to use mobile payment application on examination fees. Facilitating conditions and effort expectancy are found not significantly affecting the behavioural intention.

2.5 Proposed Theoretical Framework

Figure 2.4: Proposed Theoretical Framework



Source: Developed for the research

2.6 Review of Variables

2.6.1 Dependent Variable

2.6.1.1 Behavioural Intention

It was suggested by Venkatesh et al. (2003) that behavioural intention of an individual to adopt a technology has a significant impact on usage behaviour. Behavioural intention of an individual is used as endogenous variables that can affect user behaviour as the other endogenous variable and also affected by the exogenous variables that present in the UTAUT model which is problem expectancy., effort expectancy, social influence, and also facilitating conditions.

2.6.2 Independent Variables

2.6.2.1 Performance Expectancy

Venkatesh et al. (2003) defined performance expectancy as the extent to which an individual perceived that he will be benefited in terms of service by utilizing a particular system. It is implied that users consider the mobile application provides values by enabling them to achieve their goals (Venkatesh et al., 2003).

According to Arya (2011), users who believed that the downloaded mobile application is beneficial and innovative, they will be willing to pay for the mobile application. After analysing 231 responses collected in a major city of South Korea, Lee (2016) found that the performance expectancy is a strong predictor of behavioural intention to use a taxi application. UTAUT was applied by Verhoeven, Dirk & Kurt (2010) to study 741 university freshmen in Belgium and the research found that the model explained the varying behaviours of computer usage as well as the differences of their self-perception towards information and communication technologies competencies during university in compare to secondary school.

H1: Performance expectancy has a significant and positive effect on behavioural intention to use e-hailing application.

2.6.2.2 Effort Expectancy

Effort expectancy is defined by Venkatesh et al. (2003, p. 450) as "the degree of ease associated with the use of the system."

Plenty of previous researches proved that when technology requires less effort to learn and understand, the users are more likely to increase their adoption intention. To illustrate, simplicity and self-efficacy will affect the

intention of a public relation practitioner to adopt a social media as a medium (Curtis, Edwards, Fraser, Gudelsky, Holmquist, Thornton, and Sweetser, 2010). Han, Mustonen, Seppanen, and Kallio (2006) found that effort expectancy determined the adoption intention of medical practitioners towards a mobile system for patient management.

A more relevant study was conducted by Lee (2016). The researcher discovered that effort expectancy had a significant positive impact towards the intention to use an e-hailing application of 231 respondents in South Korea.

H2: Effort expectancy has a significant and positive effect on behavioural intention to use e-hailing application.

2.6.2.3 Social Influence

After taking into consideration of other technological acceptance theories, Venkatesh et al. (2003) defined social influence as the extent to which a user of a new system perceived the importance of others believing he or she should employ the new system.

Eckhardt, Laumer and Weitzel (2009) applied UTAUT and studied how social influence by different workplace referent groups, including customers, superiors, colleagues from the same and other departments as the respondent affect the intention to adopt information technology. After analysing data from 152 German companies, it was concluded that there is a significant relationship between social influence and the information technology adoption intention of an individual (Eckhardt et al., 2009). Research by Moriguchi (2015) by using UTAUT also shown that from the pool of 605 mobile customer, there are significant relationship between social influence and the intention to adopt mobile payment. Other than that, research by Tossy (2014) also proves that there are positive and significant relationship

between social influence with intention to use mobile payment application on the examination fees for primary and secondary school.

Several past pieces of research suggested that an individual's intention to use a new technology can be affected by the opinion of important others, such as Venkatesh and Davis (2000), Kijsanayotin, Pannarunothai, & Speedie (2009), and Chen and Salmanian (2017), to name just a few. In other words, social influence refers to the superiority brought to an individual which he perceived that others believe it is necessary for him to employ a particular system.

H3: Social influence has a significant and positive impact on behavioural intention to use e-hailing application.

2.6.2.4 Facilitating Conditions

Venkatesh et al. (2003) defined facilitating conditions as "the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system".

The adoption of social media by 409 United States non-profit organization has been studied by Curtis et al. (2010) using UTAUT. The researchers found that firms that are more likely to adopt reliable social media tools have defined public relations departments. The research by Yang (2010) showed that the relationship between facilitating conditions of mobile shopping services usage and the adoption of mobile shopping services are significant and also positive because consumer thinks that internet-enabled mobile phones can facilitate their mobile shopping activities.

In essence, facilitating conditions refer to the availability of external facilitating resources, such as instruction knowledge or assistants on standby when an individual use a particular system. In the settings of this research,

facilitating conditions appear as a form of necessary resources that a user require to effectively and successfully use e-hailing application.

H4: Facilitating condition has a significant and positive impact on the behavioural intention on e-hailing application.

2.6.2.5 Perceived Risk

Peng et al. (2014) defined perceived risk as the subjective estimation of losses that an individual needed to sustain when using an e-hailing application, based on reference from Carlsson, Hyvonen, Repo and Walden (2005). The study found that the perceived risk is negatively correlated with the behavioural intention of an individual to adopt a mobile phone taxi application. According to a study done by Zakariya and Syed (2009), when there is a higher perceived risk towards e-commerce in a tourism organization, the intention of the user to use e-commerce will decrease. Moriguchi's research shows that perceived risk are having adverse relationship with the intention to adopt mobile payment of the 605 mobile customer of a mobile firm (2015).

H5: Perceived Risk has a significant and negative impact on the behavioural intention on e-hailing application.

2.7 Summary of Hypotheses

The summary of the hypotheses developed in this study and their respective references are tabulated as below:

Table 2.1: Overview of hypotheses developed

Hypothesis (H)	References
H1: Performance expectancy has a significant and positive effect on behavioural intention on e-hailing application.	Venkatesh et al. (2012); Lee (2016); Chen et al. (2017); Moriguchi (2015)
H2: Effort expectancy has a significant and positive effect on behavioural intention of e-hailing application.	Han et al. (2006); Gupta et al. (2008); Lee (2016); Moriguchi (2015)
H3: Social influence has a significant and positive impact on behavioural intention to use e-hailing application.	Venkatesh et al. (2000); Eckhardt et al. (2009); Chen et al. (2017); Moriguchi (2015); Tossy (2014)
H4: Facilitating condition has a significant and positive impact on the behavioural intention on e-hailing application.	Curtis et al. (2010); Venkatesh et al. (2012); Yang (2010)
H5: Perceived risk has a significant and negative impact on the behavioural intention on e-hailing application.	Zakariya et al. (2009); Peng et al. (2014); Moriguchi (2014); Tossy (2014)

Source: Developed for the research

CHAPTER 3: METHODOLOGY

3.0 Introduction

The methodologies used throughout this research study is explained in this chapter. Research design, data collection and data analysis methods are explained to provide a clearer view for readers on how this research was being conducted.

3.1 Research Design

Saunders et al. (2009) defined explanatory research as an effort to investigate the relationship between a cause and an effect. In other words, the dependent and independent variables that are formed based on former studies can be explained. The reason for an event can be examined through this research method by looking into how things react with one another (Neuman & Kreuger, 2003). The focus of explanatory research is said to be flexible since a research phenomenon can be study precisely by progressively narrowing the process from an initially broad topic (Adams & Schvaneveldt, 1991).

The research objective of this study is to study the cause and effect relationship between UTAUT determinants and the usage behaviour of the e-hailing mobile application in Singapore and Malaysia. According to Saunders et al. (2009), a deductive approach is justified to use in research when there is a distinct research objective and hypotheses are acquired elaborately based on prior theories.

The deductive approach can be used to develop and examine a theory. Besides, a research phenomenon can be presented and predicted in an unbiased way as well as anticipating the occurrence (Collis & Hussey, 2003). Through a deductive approach, researchers are able to generate a set of hypotheses from a broad theoretical framework and gradually achieve a specific theory by forming conclusions from deductive reasoning. Although there are not many researchers applied UTAUT on

e-hailing applications (Lee, 2016; Chen et al., 2017), the model has been widely used in varieties of mobile application and to study the usage of ICT. To name just a few, Han et al. (2006), Gupta et al. (2008), Kijsanayotin et al. (2008) and Curtis et al. (2009) have studied the application of UTAUT on IT adoption.

3.2 Sampling Design

Respondents that are relevant for a study who are chosen from a population is called sampling. A small portion of the target population is used to make presumption on the statistical population as the initial number of targeted populations is too large, hence it will be challenging and impractical to perform a census (Saunders et al., 2009). Furthermore, budget restriction and time limitation are also some of the reasons that prevent surveying the whole population.

3.2.1 Target Population

A population is defined by Sekaran & Bougie (2013) as a group of people, events or relevant matters that the researchers are interested to investigate. The target population in this research is defined by the e-hailing users in Singapore and Malaysia. The users of e-hailing application in Singapore and Malaysia were included in the frame for sampling.

Online questionnaires were distributed to citizens who have adopted e-hailing application to satisfy their transportation needs in Klang Valley and Singapore as these Klang Valley is the most populated urban city in Malaysia whereas Singapore is a city-state. Both resemblance a high concentration of economic activity. These regions are chosen due to the liquidity of ride-hailing companies where they are focusing more on large population cities with a higher demand for transportation services.

3.2.2 Sampling Frame

A sampling frame is defined by Saunders et al. (2009) as "a complete list of all the cases in the population from which your sample will be drawn". There is no sampling frame due to the lack of accessibility of the name list of the users of any e-hailing application as these are confidential information held by the e-hailing companies. Since this research is unable to specify a sampling frame, a non-probability sampling technique is used to select samples.

3.2.3 Survey Technique

There are generally two types of sampling techniques: probability and non-probability sampling. In this research, a non-probability sampling method, which is the convenience sampling technique is applied. According to Saunders et al. (2009), convenience sampling refers to the selection of those who are easiest to obtain for the research. Voluntary sampling was conducted to ensure that the respondents have used an e-hailing application and are interested in participating in the survey. The rationale for choosing this sampling method was convenient, highly accessible and relevant respondents can be attracted.

3.2.4 Sampling Size

Malhotra et al. (2012) found that a large sampling size can decrease sampling errors. The expected response rate is within a month, hence around 200 respondents for Malaysia and 100 responses from Singapore were aimed for data collection with a limit of one-month timeframe.

Roscoe (1975) mentioned that the problem of sample should be tackled by using the rule of thumbs mentioned below:

i) use of statistical analysis that is less than 10 are not recommended ((hill, 1998)
ii) in most experimental and ex post-facto research samples of 30 and more are recommended (Hill, 1998)
iii) in multivariate research, the sample size should be at least 10 times of the variable number (Hill, 1998)

Under this research, there are 6 variables and the recommended sample size should be 10 times. As a result, a sample size of 60 or more is required in this research.

3.3 Data Collection Methods

3.3.1 Survey Strategy

A survey strategy is commonly known to be associated with the deductive approach (Saunders et al., 2009). According to Saunders et al. (2009), there are plenty of advantages using survey strategy. First, it is cost effective especially involving a huge amount of data collection from a sizable proportion of a population through questionnaire distributions via the internet. The results from the quantifiable data can be easily understood, compared, explained and conclusion can be quickly formed. Advance statistic platform such as SPSS can be used to compile and calculate the data so that it eases the process of examining the relationship between the UTAUT determinants and the usage behaviour of the e-hailing application.

3.3.2 Primary Data

Questionnaires were used to collect quantitative data for this research. According to Neelankavil (2015), a questionnaire refers to an interview form or an instrument that includes a list of questions for respondents to

answer regarding a particular matter, based on specific information required or objective of the research. Explanatory and descriptive research used questionnaires to collect quantitative data for analysis (Saunders et al., 2009). The researchers also found that online questionnaires have plenty of advantages, especially its cost efficiency, immediate results can be provided and the scalability. As an example, a traditional survey from Malaysia to Singapore would incur much higher costs, a significant delay in time and more challenging for the potential respondents to answer the questionnaires voluntarily. Therefore, a self-administered online questionnaire will be used in this research.

The online questionnaire was distributed to family and friends. Besides, the access link to the online questionnaire was circulated in many e-hailing community Facebook groups to encourage volunteers to participate in the survey. The rationale behind using Facebook community groups was due to instant access to e-hailing users on the social media.

3.3.2.1 Survey Tool

Chen et al. (2017) mentioned that Google Forms are widely used among academicians for survey due to its flexibility and it is cost-free. On the other hand, other popular survey tools like SurveyMonkey and Form Tools required payment subscription for full data accessibility, export options and survey logic (Chen et al., 2017). In consideration of the limited financial resource and familiarity of respondents, Google Form will be used in this research. The accessibility of Google Forms was tested with a Pilot Test.

3.3.3 Secondary Data

Plenty of information in this research is gathered from secondary data. Former literature sources were used as references through searches within

libraries of Google Scholar, Research Gate, Emerald Insight, SAGE Journal and ScienceDirect. Keywords used were as following: Sharing Economy, E-hailing, Ride-hailing, Ridesharing, Taxi-hailing, UBER, Grab. Distinguished authors like Saunders et al. (2009) were used for quantitative research literature.

3.3.4 Questionnaire Design

The main language and medium used in the questionnaire is English. This is because of its international status of the language and it is a language widely used by residents in Malaysia and Singapore. The Google Form consists of four pages and three sections. In the first page, brief information and the purpose of conducting the research was stated. Respondents were also assured that their data obtained from the questionnaire will be kept private and confidential.

The remaining three pages consist of close-ended questions. There are two questions under Section A. First question serves the purpose of filtering out people who never use any e-hailing application before where the second question find out which e-hailing application the respondents have used before. Nominal scale was used for this section.

Section B provided demographic and general information of the respondents related to e-hailing application. The demographic information collected includes gender, age group, employment status; whereas general information required the respondents to provide their years of experience with e-hailing application and the voluntariness of them using it. Both nominal and ordinal scale were used.

On the last page, Section C consists of 6 sections which include the independent variables and dependent variables, with four measurement items for each variable. 5-point Likert scale was used for the respondents to

indicate their extent of agreement with the statements. As shown in table, scale 1 represents that the respondent strongly disagree, whereas scale 5 represents that the respondent strongly agrees. The measurement scale used was ordinal.

Table 3.1: 5-Point Likert Scale

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Source: Likert (1932)

The measurement items of this research were adopted and adapted from previous research that conducted survey based on the UTAUT model for e-hailing industry or information system. The table summarised is provided in Appendix B.

3.4 Proposed Data Analysis Tool

Data analysis tool is an instrument used by researcher to perform analytic interpretation on the information collected from samples to extract a certain meaning of the result produced. There are various tools available to perform data analysis but Statistical Package for Social Sciences (SPSS) Version 23 were used for this research because of its capability, its accessibility through Universiti Tunku Abdul Rahman and our familiarity towards the software. SPSS were used on this research to find out the significance of the relationship between the independent variables (performance expectancy, effort expectancy, social influence, facilitating conditions, perceived risk) and the dependant variable (behavioural intention).

One of the main reasons using SPSS instrument in this research was because it is highly comparable since it is widely used in social behavioural science (Landau,

2007). Besides that, SPSS is also flexible to handle multiple variables with comprehensive results interpretation as mentioned by Arkkelin (2014).

3.5 Data Analysis

3.5.1 Descriptive Analysis

According to Baha (2016), descriptive statistics are often the foundation that leads to new research findings. The collection of information on the respondents, events and situations should be taken place before the researcher analyse the outcome in an orderly manner. This analysis was to shed light upon items about the basis of distribution and the range of responses such as gender, age, employment status and can be obtained as a supporting tool for the analysis.

3.5.2 Reliability Analysis

Cronbach's Alpha was used to examine the reliability of this quantitative research. It is a tool to determine the internal consistency of how closely related the responses are to the rating scale of the measurement items in a questionnaire are (UCLA, 2012). SPSS was used to find out the coefficient α and is compared with the following standard measurement. In this research, the reliability was tested to find out whether the alpha value exceeds 0.7. Only when the alpha value exceeds 0.7, this study can be considered to have acceptable reliability; otherwise, the internal consistency of the measurement items will be questionable or unreliable.

Table 3.2: Cronbach's Alpha

Cronbach's alpha	Internal consistency
$0.9 \leq \alpha$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Source: Cronbach, L. J. (1951)

3.5.3 Inferential Analysis

To find out whether the pattern observed from the data was by random or due to any program or intervention effect (University of Minnesota, 2017), inferential analysis was used. The analysis can also identify whether a relationship exists between each independent variable and the dependent variable as well as the strength of that particular relationship.

3.5.3.1 Correlation Analysis

Before conducting a regression analysis, correlation analysis was conducted. Similar to Pearson correlation coefficient, the Spearman correlation coefficient occurs within the range of -1 and +1. While Pearson correlation coefficient determines the strength and relationship between two variables, Spearman correlation focuses on monotonic relationship. Furthermore,

Pearson correlation analysis requires the variables to be measure in either interval or ratio scale. However, Spearman correlation analysis requires the data to be stored in the ordinal scale. The measurement items of the constructs were in Likert scale and Likert scale is an ordinal scale.

The range ranked between -1.0 to +1.0. The closer the value to 1, the stronger the correlation between the two variables. A positive sign indicates a positive relationship, whereas a negative sign indicates a negative relationship. According to Nunnally and Bernstein (1994), a result with a correlation coefficient higher than 0.7 required a factor analysis or combining the 2 factors.

3.5.3.2 Multiple Regression Analysis

Multiple regression analysis is a statistical tool used by researchers to determine the relationship between the independent variables and the dependent variable (Higgins, 2015). The most significant predictor of the dependent variable can be found from the result.

To demonstrate, the equation of the multiple regression analysis for this research is stated as below:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5$$

Y = Behavioural intention to use e-hailing application

β_0 = Constant when there is no independent variable

β_1 = slope coefficient for the variable (performance expectancy)

β_2 = slope coefficient for the variable (effort expectancy)

β_3 =slope coefficient for the variable (social influence)

β_4 = slope coefficient for the variable (facilitating condition)

β_5 = slope coefficient for the variable (perceived risk)

3.6 Pilot Test

Before a proper data collection of actual survey results is taken, pilot test is essential to find out the reliability of the proposed online survey. It is defined as "small study to test research protocols, data collection instruments, sample recruitment strategies, and other research techniques in preparation for a larger study" by Schattner (2006). Under the test, a sample of 34 responses were collected by using the proposed online survey form to run a reliability test through the instrument of Statistical Package for the Social Sciences (SPSS).

Table 3.3: Cronbach's Alpha of Pilot Test

Constructs	Cronbach's Alpha	No. of Items
PE	0.910	4
EE	0.942	4
SI	0.893	4
FC	0.820	4
PR	0.879	4
BI	0.791	4

Source: Develop for the research

The pilot test has passed the reliability analysis, it is then proceeded with the distribution of online questionnaire for the actual data analysis.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

A total of 297 online questionnaires were obtained, where 193 responses were from Malaysia and 104 from Singapore. All participated respondents had experiences with e-hailing application. They were required to complete all questions listed in the Google Form and therefore, no answer was abandoned. Data collected was organized and analysed using SPSS version 23.

4.1 Descriptive Analysis

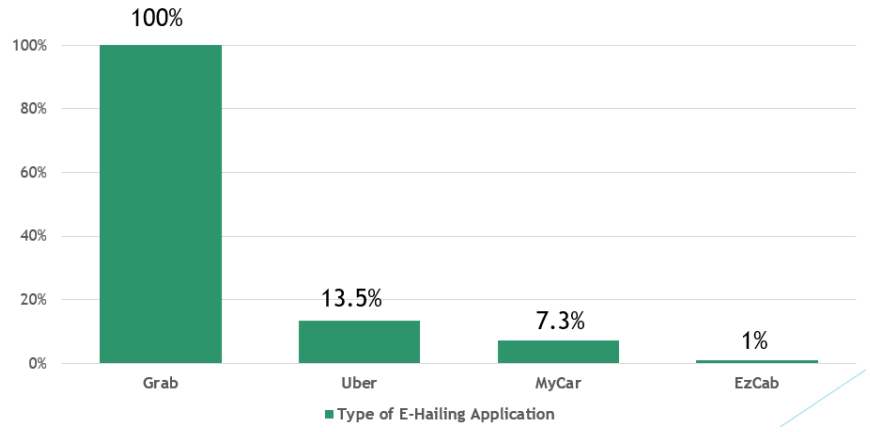
The results obtained from Section A and Section B of the online questionnaires were explained under this part.

4.1.1 Analysis on Section A

There were two questions in this section. First question provided the function to screen out those who did not use e-hailing applications. Second question required the respondents to provide the e-hailing application they have used before.

4.1.1.1 Usage of E-Hailing Application

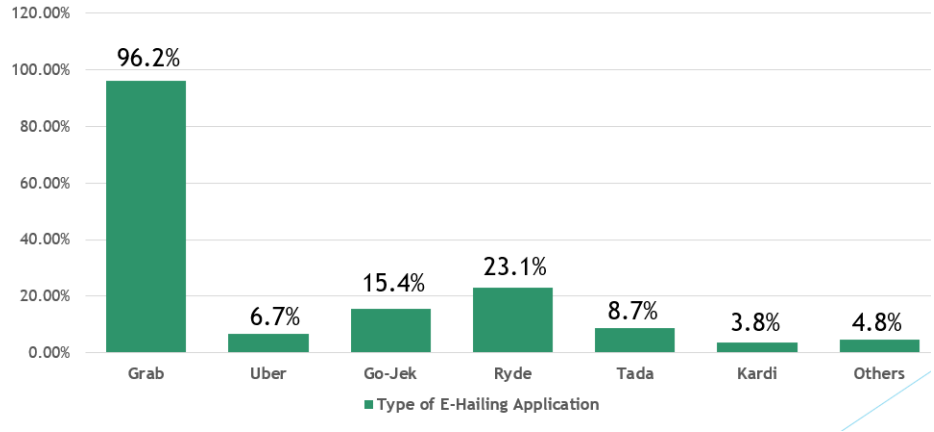
Figure 4.1: Type of E-Hailing Application Used in Malaysia



Source: Developed for this research

In Malaysia, all respondents have used Grab before. Out of 193 responses, 26 of them have used Uber, 14 had experiences with MyCar whereas 1 had used EzCab. The respondents had an average usage experience with 1.21 e-hailing application.

Figure 4.2: Type of E-Hailing Application Used in Singapore



Source: Developed for the research

As for Singapore, there were many more choices as compare to Malaysia. The average e-hailing application usage experience of the respondents was

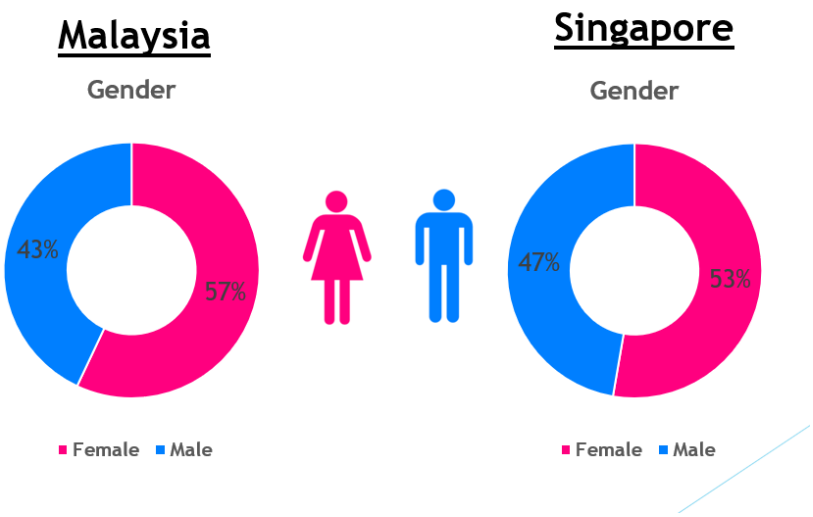
1.59, higher than Malaysian respondents. Out of 104 responses obtained from Singapore e-hailing users, 96.2% of them have used Grab, followed by Ryde (23.1%), Go-Jek (15.4%), Tada (8.7%), Uber (6.7%), Kardi (3.8%), and others (4.8%).

4.1.2 Analysis on Section B

The demographic and general information regarding e-hailing application of the respondents were collected in Section B of the online questionnaire. Information collected includes gender, age group, employment status, voluntariness to use and years of experience. Results obtained were shown in charts.

4.1.2.1 Gender

Figure 4.3: Gender Distribution of Respondents in Malaysia and Singapore



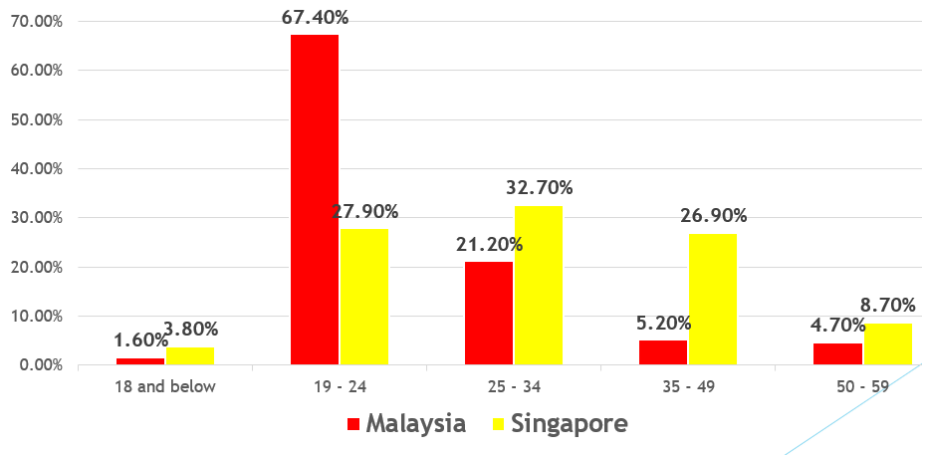
Source: Developed for the research

Gender distribution of the respondents in Malaysia and Singapore was quite equal and similar. There were slightly more female respondents than male respondents in both countries. This can be supported by Greenwood, Perrin

and Duggan (2016) as the study stated that women are generally more active than men on social media.

4.1.2.2 Age Group

Figure 4.4: Age Group Distribution of Respondents in Malaysia and Singapore



Source: Developed for the research

In Malaysia, there was a strong majority of 19 to 24 years old respondents (67.4%), together with the age group of 25 to 34 years old which constitutes of 21.2%. It showed that a total of 88.6% respondents were millennials. This is because millennials have strong affiliation towards technology and are more active on social media. This group used e-hailing application more frequently than other age groups. Moreover, this group of respondents were either students or at their beginning of career phase. They might not own a car. Hence, they are more likely to use e-hailing application.

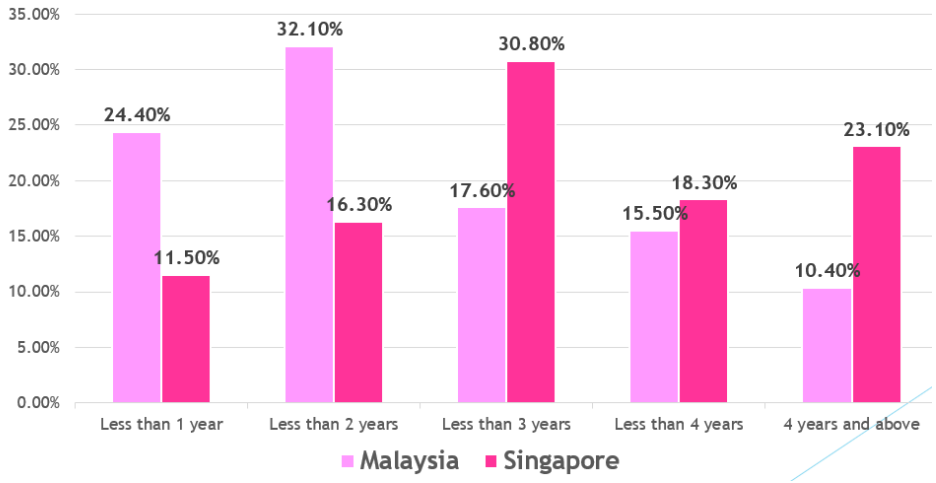
There were fewer respondents under 35 to 49 years old (5.2%) and 50 to 59 years old (4.7%). Possible reason is that these two groups of respondents already own a car and are less tech savvy. Based on the analysis, there were almost none for age group of 18 years old or below (1.6%). It is assumed

that they have financial and legal limitations such as credit card payment or they are usually fetched by parents or designated school buses.

On the other hand, most of the respondents from Singapore fell under three age groups. The highest was 25 to 34 years old (32.7%), followed by 19 to 24 years old (27.9%) and 35 to 49 years old (26.9%). The second least was 50 to 59 years old (8.7%) where these respondents have lesser exposure to mobile technology. The least was 18 years old or below (3.8%). The assumption was that they have budget constraints and therefore, they use transportation that is more economic such as bus and train to travel.

4.1.2.3 Years of Experiences with E-Hailing Application

Figure 4.5: Age Group Distribution of Respondents in Malaysia and Singapore



Source: Developed for the research

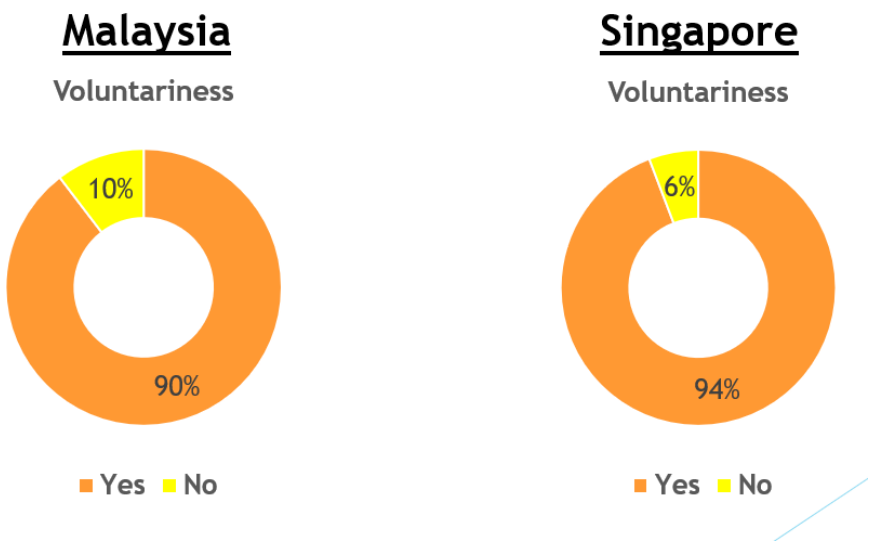
Most of the respondents in Malaysia (32.1%) have less than 2 years of experience using e-hailing application and those with less than 1 year of experience constituted 24.4%. Followed by respondents with less than 3 years (17.6%), less than 4 years (15.5%) and 4 years and above (10.4%). The e-hailing giant, Uber had its soft launch in Malaysia approximately five

years back in October 2013 (Goh, 2014). This indicated that there was an upward trend of Malaysians who start adopting e-hailing application.

For respondents from Singapore, the highest frequency was from those with less than 3 years experiences (30.8%), followed by 4 years and above (23.1%), less than 4 years (18.3%), less than 2 years (16.3%), less than 1 year (11.5%).

4.1.2.4 Voluntariness

Figure 4.6: Voluntariness of Respondents in Malaysia and Singapore

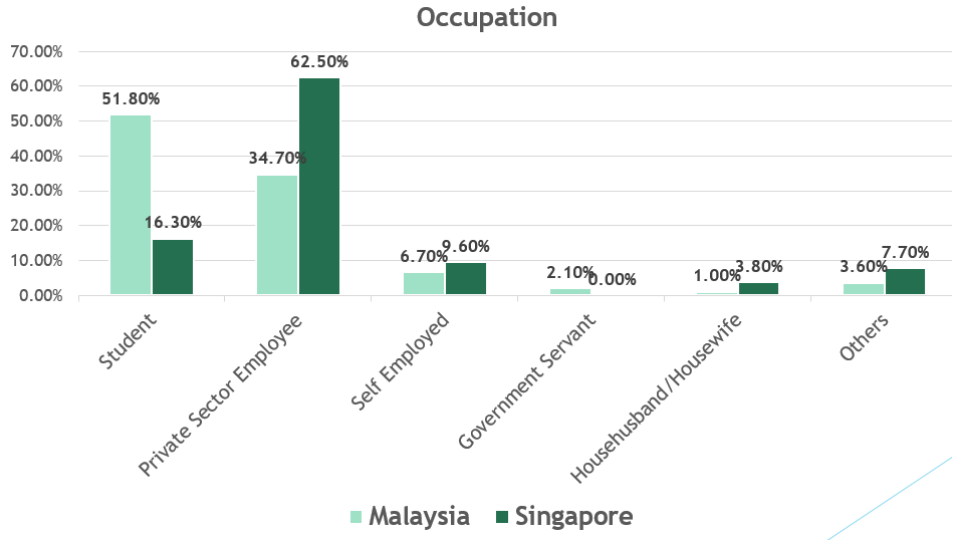


Source: Developed for the research

Majority of the respondents from Malaysia (89.6%) and Singapore (94.2%) used e-hailing application voluntarily. Only a small percentage of the respondents from Malaysia (10.4%) and Singapore (5.8%) did not use e-hailing application voluntarily.

4.1.2.5 Occupation Distribution

Figure 4.7: Occupation of Respondents in Malaysia and Singapore



Source: Developed for the research

More than half of the respondents in Singapore were private sector employees (62.5%), followed by students (16.3%), self-employed (9.6%), others (4.8%), househusband/housewife (3.8%), and retired (2.9%).

As for Malaysia, there were slightly more than half of the respondents were students (51.8%), followed by second highest which are private sector employees (34.7%), then self-employed (6.7%), others (3.6%), government servants (2.1%). The least was househusband/housewife (1.0%). The students were most likely taking tertiary education, based on the age distribution where most respondents are of 19 to 24 years old.

4.2 Reliability Analysis

4.2.1 Reliability Analysis for Malaysia Responses

Table 4.1: Reliability Test Result for Malaysia Responses

Construct	Mean	Standard Deviation	Cronbach's Alpha	No. of Items
PE	3.9611	0.66618	0.869	4
EE	4.0622	0.66782	0.889	4
SI	2.9080	0.83598	0.838	4
FC	3.8264	0.62160	0.800	4
PR	3.4935	0.72458	0.805	4
BI	3.8355	0.65685	0.775	4

Source: Developed for the research

For responses collected in Malaysia, reliability test was conducted to identify the reliability of the variables and the internal consistency of a measurement. All the constructs had higher than 0.7 in Cronbach's alpha test. PE, EE, SI, FC, PR have good reliability where BI has the lowest value (0.775) among all and has acceptable reliability. Each of the constructs were measured by four items. In short, the variables of this study are reliable and have strong internal consistency level.

4.2.2 Reliability Analysis for Singapore Responses

Table 4.2: Reliability Test Result for Singapore Responses

Construct	Mean	Standard Deviation	Cronbach's Alpha	No. of Items
PE	3.9832	0.95484	0.927	4
EE	4.1202	0.89088	0.954	4
SI	3.0673	1.22039	0.914	4
FC	3.9712	0.86904	0.931	4
PR	2.8702	1.06294	0.918	4
BI	3.8630	0.98402	0.917	4

Source: Developed for the research

Similar to Malaysia, reliability test was conducted to identify the reliability of the variables for the responses collected from Singapore. All the constructs had higher than 0.9 in Cronbach's alpha test. Hence, the constructs have strong reliability. Each of the constructs were measured by four items. In short, the variables of this study are highly reliable and have strong internal consistency level.

4.3 Correlation Analysis

The researchers of this research believed that it is necessary to identify the potential possibility of the existence of the interrelationships between the independent variables in order to avoid multicollinearity problem. According to Toutenburg and Shalabh (2009), when the independent variables are highly correlated with each other, these variables will not remain independent and multicollinearity will occur. The closer the value is to either -1 or +1, the higher the correlation between the variables. When the coefficient value is below -0.7 or above +0.7, there is harmful multicollinearity (Toutenburg et al., 2009). Multicollinearity might cause the result to be unreliable or provide incorrect data and lead to wrongly rejecting a relationship.

4.3.1 Correlation Analysis for Malaysia responses

Table 4.3: Correlation Test Result of Malaysia Responses

Correlations

			PE	EE	SI	FC	PR	BI
Spearman's rho	PE	Correlation Coefficient	1.000					
		Sig. (2-tailed)	.					
		N	193					
	EE	Correlation Coefficient	.541**	1.000				
		Sig. (2-tailed)	.000	.				
		N	193	193				
	SI	Correlation Coefficient	.168*	.104	1.000			
		Sig. (2-tailed)	.019	.150	.			
		N	193	193	193			
	FC	Correlation Coefficient	.585**	.653**	.210**	1.000		
		Sig. (2-tailed)	.000	.000	.003	.		
		N	193	193	193	193		
	PR	Correlation Coefficient	.089	.001	.205**	.031	1.000	
		Sig. (2-tailed)	.217	.987	.004	.668	.	
		N	193	193	193	193	193	
	BI	Correlation Coefficient	.522**	.563**	.269**	.525**	.039	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.590	.
		N	193	193	193	193	193	193

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Developed for the research

The table above constitutes the correlation data of Malaysia responses after analysis. As a result, only the interrelationship between EE and FC has an intermediately high value (0.653). When the number is lower than the defined critical point (0.7), the factors are considered independent to each other.

4.3.2 Correlation Analysis for Singapore responses

Table 4.4: Correlation Test Result of Singapore Responses

Correlations

			PE	EE	SI	FC	PR	BI
Spearman's rho	PE	Correlation Coefficient	1.000					
		Sig. (2-tailed)	.					
		N	104					
	EE	Correlation Coefficient	.649**	1.000				
		Sig. (2-tailed)	.000	.				
		N	104	104				
	SI	Correlation Coefficient	.557**	.440**	1.000			
		Sig. (2-tailed)	.000	.000	.			
		N	104	104	104			
	FC	Correlation Coefficient	.631**	.624**	.566**	1.000		
		Sig. (2-tailed)	.000	.000	.000	.		
		N	104	104	104	104		
	PR	Correlation Coefficient	-.412**	-.397**	-.303**	-.494**	1.000	
		Sig. (2-tailed)	.000	.000	.002	.000	.	
		N	104	104	104	104	104	
	BI	Correlation Coefficient	.619**	.642**	.598**	.621**	-.443**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.
		N	104	104	104	104	104	104

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Developed for the research

Based on the table, there were few independent variables with an intermediately high correlation, including PE and EE (0.649), PE and FC (0.631), EE and FC (0.624). Since all these values are under the critical value of 0.7, it does not show strong correlation between any of the independent variables. Therefore, it can be concluded that these independent variables do not affect each other. Regression analysis can be carried on to determine the strength of the relationship of the hypotheses proposed in Chapter 2.

4.4 Inferential Analysis

4.4.1 Inferential Analysis for Malaysia Responses

Table 4.5: Model Summary of Malaysia Responses

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728[a]	.530	.517	.45645

Source: Developed for the research

The regression value obtained was 0.728. Hence, it shows that there is a correlation between the independent variables and dependent variables. The R Square value obtained was 0.530, there is 53.0% of the dependent variable that can be explained by the independent variables. After the R Square was adjusted, 51.7% of the dependent variable can be explained by this model. The standard error of estimate for this analysis was 0.45645.

Table 4.6: ANOVA of Malaysia Responses

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.878	5	8.776	42.119	.000[b]
	Residual	38.962	187	.208		
	Total	82.839	192			

a. Dependent Variable: BI

b. Predictors: (Constant), PR, EE, SI, PE, FC

Source: Developed for the research

Analysis of Variance (ANOVA) test result was shown as the table above. The significance value is 0.00 and is lesser than 0.05. Hence, it is concluded that the model is significant at 95% confidence interval. There is a

significant relationship between at least one independent variable among PE, EE, SI, FC, PR and the dependent variable.

In the Regression model, the value of sum of square is 43.878 with a degree of freedom of 5 and a mean square of 8.776. On the other hand, the Residual model has a value of 38.962 sum of squares. The degree of freedom of this model was 187 with a 0.208 mean square.

Table 4.7: Coefficients of Malaysia Responses

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.498	.269		1.850	.066	-.033	1.030
	PE	.223	.073	.227	3.051	.003	.079	.368
	EE	.339	.079	.344	4.311	.000	.184	.494
	SI	.110	.042	.140	2.607	.010	.027	.193
	FC	.198	.084	.187	2.352	.020	.032	.364
	PR	-5.667E-5	.047	.000	-.001	.999	-.092	.092

a. Dependent Variable: BI

Source: Developed for the research

The table above shows the Beta coefficient and the significance values. PE, EE, SI, FC have significance value lower than 0.05. In short, these variables have significant and positive impact on BI. H1, H2, H3, H4 were supported. However, PR does not have a significant impact on BI as its significance value was higher than 0.05. H5 was rejected. The higher the beta value, the more likely the dependent variable will be affected by the particular independent variable. Therefore, the most influential independent variable is EE, followed by PE, and FC where SI has the lowest beta value among these four.

An equation was formed based on the Beta coefficient values of the variables as shown below:

Behavioural Intention to Use E-Hailing Application = 0.498 + 0.223 (Performance Expectancy) + 0.339 (Effort Expectancy) + 0.198 (Facilitating Condition) + 0.110 (Social Influence)

An assumption given is that the other variables remain unchanged. With every increase of per unit of performance expectancy, the behavioural intention of users in Malaysia using e-hailing application increases by 0.223 unit. Besides, when effort expectancy increases by one unit, the level of the Malaysia users' intention to use e-hailing application increases by 0.339 unit. The behavioural intention of Malaysia e-hailing users to use the application increases by 0.198 unit when there is an increase of per unit facilitating condition. Lastly, an increase in every unit of social influence will increase the behavioural intention of users to adopt e-hailing application by 0.110 unit.

4.4.2 Inferential Analysis for Singapore Responses

Table 4.8: Model Summary of Singapore Responses

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.868[a]	.754	.741	.50054

Source: Developed for the research

The regression value obtained was 0.868. Hence, it shows that there is a correlation between the independent variables and dependent variables. The R Square value obtained was 0.754, there is 75.4% of the dependent variable that can be explained by the independent variables. After the R Square was adjusted, 74.1% of the dependent variable can be explained by this model. The standard error of estimate for this analysis was 0.50054.

Table 4.9: ANOVA of Singapore Responses

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.182	5	15.036	60.016	.000[b]
	Residual	24.553	98	.251		
	Total	99.735	103			

a. Dependent Variable: BI

b. Predictors: (Constant), PR, EE, SI, PE, FC

Source: Developed for the research

Analysis of Variance (ANOVA) test result was shown as the table above. The significance value is 0.00 and is lesser than 0.05. Hence, it is concluded that the model is significant at 95% confidence interval. There is a significant relationship between at least one independent variable among PE, EE, SI, FC, PR and the dependent variable.

Table 4.10: Coefficients of Singapore Responses

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.552	.369		1.496	.138	-.181	1.285
	PE	.580	.109	.563	5.349	.000	.365	.796
	EE	.143	.095	.129	1.510	.134	-.045	.330
	SI	.106	.052	.132	2.057	.042	.004	.209
	FC	.087	.124	.077	.703	.484	-.160	.334
	PR	-.091	.055	-.099	-1.671	.098	-.200	.017

a. Dependent Variable: BI

Source: Developed for the research

The table above shows the Beta coefficient and the significance values. Only PE and SI have significance value lower than 0.05. In short, these two variables have significant and positive impact on BI. Hence, H1 and H3 were supported by the research. However, the result showed that EE, FC

and PR do not have a significant impact towards BI. Therefore, H2, H4 and H5 were not supported. PE is a higher influential independent variable as compared to SI because PE has a highest Beta coefficient with the value 0.580 whereas SI has a Beta coefficient of 0.106.

An equation was formed based on the Beta coefficient values of the variables as shown below:

Behavioural Intention to Use E-Hailing Application = 0.552 + 0.580 (Performance Expectancy) + 0.106 (Social Influence)

An assumption given is that the other variables remain unchanged. With every increase of per unit of performance expectancy, the behavioural intention of users in Singapore using e-hailing application increases by 0.580 unit. Besides, when effort expectancy increases by one unit, the level of the Singapore users' intention to use e-hailing application increases by 0.106 unit.

CHAPTER 5: DISCUSSION, CONCLUSIONS AND IMPLICATIONS

5.1 Discussion of Major Findings

Table 5.1: Summary of Findings

Hypothesis (H)	Malaysia	Singapore
H1: Performance expectancy has a significant and positive effect on behavioural intention to use an e-hailing application.	**Supported**	**Supported**
H2: Effort expectancy has a significant and positive effect on behavioural intention to use an e-hailing application.	**Supported**	Not Supported
H3: Social influence has a significant and positive impact on behavioural intention to use e-hailing application.	**Supported**	**Supported**
H4: Facilitating condition has a significant and positive impact on the behavioural intention to use an e-hailing application.	**Supported**	Not Supported
H5: Perceived risk has a significant and negative impact on the behavioural intention to use e-hailing application.	Not Supported	Not Supported

Source: Developed for the research

5.1.1 Performance Expectancy

H1: Performance expectancy has a significant and positive effect on behavioural intention to use e-hailing application.

Performance expectancy was defined as the extent to which an individual perceived that he will be benefited in terms of service by utilizing a particular system (Venkatesh, 2003). Both Malaysia and Singapore results showed that the hypothesis is supported. This is consistent with the previous studies. It indicates that both Malaysian and Singaporean believed that they are benefited from the e-hailing application by improving their life productivity. Researchers found that performance expectancy is the most dominant predictor of the behavioural intention in this model.

Venkatesh (2003), Lee (2016), and Chen et al. (2017) supported that performance expectancy have a positive role on the 361 Chinese user's acceptance where the user acceptance includes both intention to use and usage behaviour. Performance expectancy also has a positive effect on behavioural intention after collecting data from 400 Indonesian users (Isradila and Indrawati, 2017).

Bardhi and Eckhardt (2012) mentioned that one of the important features of the sharing economy is that it provides access to assets without ownership. In our case, this refers to a car and this shows that the productivity provided by an e-hailing application supported this key component of the sharing economy.

5.1.2 Effort Expectancy

H2: Effort expectancy has a significant and positive effect on the behavioural intention of e-hailing application.

Effort expectancy was defined by Venkatesh (2003) as "the degree of ease associated with the use of the system." From the result, it is shown that the hypothesis is supported by Malaysian but not Singaporean. Chen et al. (2017) had proved that effort expectancy had an intermediately positive effect on user acceptance of transportation network company in China too. According to Han et al. (2006), effort expectancy determined the adoption intention of medical practitioners towards a mobile system for patient management.

A study conducted by Gupta, Dasgupta, and Gupta (2008) showed that effort expectancy had affected the intention of the employees of a government organization in India to adopt a new media system for public service. Since the behavioural intention to use an e-hailing app of Malaysian users are highly affected by the effort expectancy, it is highly recommended to the e-hailing operators in Malaysia to design the app to be more user-friendly so it can be easily learned by the consumer.

Similar to Singapore's result, Isradila et al. (2017) did not find any significant and positive effect of effort expectancy towards the Indonesian behavioural intention to adopt e-hailing application. Haba and Dastance (2018) are also unable to support its hypothesis of effort expectancy having a significantly positive impact towards behavioural intention for e-hailing application adoption. Tossy (2014) also found that effort expectancy was not significantly affecting an individual's intention to use mobile application payment system after collecting data from 182 Tanzanian users.

5.1.3 Social Influence

H3: Social influence has a significant and positive impact on behavioural intention to use e-hailing application.

Venkatesh et al. (2003) defined social influence as the extent to which a user of a new system perceived the importance of others believing he or she should employ the new system. Both Malaysian and Singaporean result shows that the hypothesis is supported. Lee (2016) and Haba et al. (2018) supported that social influence has a significant effect on behavioural intention to use taxi-hailing application. Eckhardt, Laumer and Weitzel (2009) applied UTAUT and studied how social influence by different workplace referent groups, including customers, superiors, colleagues from the same and other departments as the respondent affect the intention to adopt information technology.

Hence, the hypothesis is supported that the opinion and suggestion provided by an individual's reference group such as family, friends or colleagues can considerably affect Malaysia and Singapore e-hailing users to decide whether to use or which e-hailing application to be adopted through this study.

5.1.4 Facilitating Condition

H4: Facilitating condition has a significant and positive impact on the behavioural intention on the e-hailing application.

Venkatesh et al. (2003) defined facilitating conditions as "the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system". Same as the previous hypothesis, the hypothesis is supported for Malaysian but not Singaporean.

For Malaysia, Curtis et al. (2010) supported this hypothesis by showing that firms are more likely to adopt reliable social media tools with organized public relations departments. Yang (2010) also showed that the relationship between facilitating conditions of mobile application shopping services usage and the adoption of them are significantly positive because consumer thinks that Internet-enabled mobile phones can simplify their mobile shopping activities.

Chen et al. (2017) found that the user acceptance of transportation network companies in China was intermediately and positively impact by facilitating conditions. This showed that the e-hailing companies in Malaysia must take into consideration the resources, facilities and infrastructures in order to be successful in the country.

As for Singapore, Tossy's (2014) result is supporting the hypothesis by showing that facilitating condition was not significantly affecting an individual's intention to use mobile application payment system after collecting data from 182 Tanzanian

users. Haba and Dastance (2018) also unable to support its hypothesis of FC having a significantly positive impact towards BI for e-hailing application adoption.

5.1.5 Perceived Risk

H5: Perceived risk has a significant and negative impact on the behavioural intention on the e-hailing application.

The hypothesis for both Malaysia and Singapore is not supported. This is contradicting with the previous studies (Zakariya et al., 2009; Peng et al., 2014; Moriguchi, 2015). From our result, it shows that there are negative but is not a significant relationship between perceived risk with behavioural intention to adopt e-hailing application. The negative relationship part is reflecting the recent crime involved in the e-hailing industry, but it is not significant enough to overcome the needs of the e-hailing usage in reality. There is some information was shared to the consumer by the government and also the e-hailing firms to reduce such concerns in the industry such as the Grab's official released articles and also MyTaxi (MyTaxi, 2015).

5.2 Implications of the Study

For Malaysia, Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Condition have a significant and positive impact on the behavioural intention. Malaysian consumers believed that the e-hailing application is useful in their daily activities. Secondly, the ease of use and facilitating infrastructures are important to take into consideration. EE has the highest beta value among all independent variables. This implies that the Malaysian users will be having a higher intention to use the e-hailing application that is easy to operate. Therefore, marketers and application developers from Malaysia e-hailing companies should focus on prioritizing simplicity and accessibility. We advised that the application to have a quick and effortless registration process for new users by using minimum

information. The features in the application such as mobile payment can be similar to other applications to lessen the learning curve.

The effect of Effort Expectancy and Facilitating Condition is not significant for Singapore users. This implies that easy usage and facilities available for an e-hailing application is not deemed important for the consumers. A possible reason to explain this is that Singapore is the most tech-savvy country in the International E-Government Ranking list for 3 times in a row (Poulami Nag, 2017). Hence, the e-hailing company in Singapore can design a more sophisticated application to have more customization features. Artificial intelligence (AI) can be developed into the app in the future to make it more convenient for consumers.

Social Influence plays an important role for both Malaysians and Singaporeans to adopt e-hailing application. This can be explained by the high collectivistic culture in Malaysia and Singapore. The members in the society will try to fit into groups in exchange for loyalty. Another influencing principle is from Confucian philosophy where it believes that a person is a member of a family but not only an individual. Hence, the marketers can use word-of-mouth or buzz method to spread positive awareness for the e-hailing application. They are also advised to develop a strong positive image on social media and engage with famous and relevant influencers.

5.3 Limitations of the Study

There are a few limitations were identified from the research. The sample size collected from Klang Valley, Malaysia (193 respondents) and Singapore (104 respondents) is relatively small. Hence, the results have limited generalizability and unable to fully explain the behavioural intention to use the e-hailing application in other situations.

Race and income segmentations were not included in this research. There are inadequate journals that demonstrate the spread of users' intention to adopt e-hailing application among various income classes and ethnicities.

According to the findings in Chapter 4, there is only 53.0% of the variation in the dependent variable being explained by the independent variables. It means that there might be other variables that will affect Malaysian's behavioural intention for the e-hailing application that is not included in this research.

Majority of the journal articles referred to in this research were conducted in another country. Some of the journals were directed to other fields instead of a mobile application. Examples of the diverted topics were e-banking, e-government and internet technology. Also, there are only a few researchers adopted the UTAUT model to investigate the behaviour on an e-hailing application. Consequently, this might provide an obstacle towards researchers due to different cultural background, context and conditions in Malaysia.

5.4 Recommendations of the Study

The recommendations below were suggested to provide guidelines in order to overcome the limitations of the research mentioned in the previous subtopic. The first limitation involved specific geographical focus in Klang Valley and a limited number of samples obtained. It is advisable for the researchers to carry out a nationwide study and include a larger sample size in future studies. This is to have higher accuracy of the depiction on the Malaysian population and at the same time enhance the generalizability of the research. Same goes to Singapore.

We encourage future researchers to revise and take other variables into consideration when proposing the framework in order to improve the R Square value of the Malaysia model for a higher predictive power in the study. The researchers may conduct a qualitative research by interviewing a few e-hailing users to gain insights on other possible factors that were not listed in this research such as habit, price, hedonic motivation etc.

In this research, only passengers were deemed as users of e-hailing application while drivers were considered as providers. When we view it in another perspective, drivers can also be seen as users of the application. Therefore, we suggest that other researchers can take drivers into consideration while designing the research study.

5. 5 Conclusion

Based on our research on the variables of performance expectancy, effort expectancy, social influence, and facilitating conditions on the behavioural intention of Malaysian among Klang Valley. Singaporean on the other hand has only performance expectancy and also social influence has significant and positive effects on behavioural intention; interestingly both countries are having insignificant relations between perceived risk and behavioural intention.

We've discovered that our results are similar and generally supported by the previous research from other researchers. The different results in both Singaporean and Malaysian might be reflecting the other factors that it is not included in this research. The results might also reflect the very basis of culture between the two nations and the norm in it in today's environment. The limitations and recommendations have been discussed in this research for future research purposes.

REFERENCES

6t-bureau de recherche. (2014). *One-way carsharing: Which alternative to private cars?* Retrieved from https://6-t.co/wp-content/uploads/2014/05/AD_ExecutiveSummary_140708-copie-2.pdf

ABI Research. (2018). 16 Billion Ride-Hailing Trips Completed Globally in 2017 – 24 Billion Trips expected in 2018. Retrieved March 14, 2019, from https://www.abiresearch.com/press/16-billion-ride-hailing-trips-completed-globally-2017-24-billion-trips-expected-2018/

Adams, G. R. & Schvaneveldt, J. D. (1991). *Understanding research methods* (2nd ed.). New York: Longman.

Agarwal, R. and Prasad, J. (1999). Are individual differences germane to the acceptance of new information technologies?, *Decision Sciences, Vol. 30*, 361–391.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Process, 50,* 179-211.

Ariffin, E. (2018, March 31). *How Uber lost the e-hailing race in Southeast Asia*. Retrieved December 10, 2018, from https://theaseanpost.com/article/how-uber-lost-e-hailing-race-southeast-asia

Arya, A. (2011). More than 10 billion app store downloads served, *Macworld, 29(4),* 29.

Bardhi, F., & Eckhardt, G. M. (2012). Access-based consumption: The case of car sharing. Journal of Consumer Research, *39(4), 881-898.*

Belk, R. (2007). Why Not Share Rather than Own? *The Annals of the American Academy of Political and Social Science, 611 (1), 126–140*.

Blumberg, B., Cooper, D. R., Schindler, P. S. (2011). London: McGraw-Hill Higher Education.

Carlsson, C., Hyvonen, K., Repo, P., & Walden, P. (2005). Asynchronous Adoption Patterns of Mobile Services. *Proceedings of the 38th Annual Hawaii International Conference on System Sciences*.

Cervero, R., & Tsai, Y. (2004). City CarShare in San Francisco, California: Second-Year Travel Demand and Car Ownership Impacts. *Transportation Research Record: Journal of the Transportation Research Board, 1887,* 117–127

Cervero, R., Golub, A., & Nee, B. (2007). City CarShare. Transportation Research Record: *Journal of the Transportation Research Board, 1992(1),* 70-80

Channel News Asia. (2018). Go-Jek opens up service to all Singapore consumers. Retrieved February 28, 2019, from https://www.channelnewsasia.com/news/singapore/go-jek-ride-hailing-app-opens-up-service-singapore-11104854

Chatterjee, K., Goodwin, P., Schwanen, T., Clark, B., Jain, J., Melia, S., Middleton, J., Plyushteva, A., Ricci, M., Santos, G. and Stokes, G. (2018). *Young people's travel – What's changed and why? Review and analysis.* Project Report. Department for Transport, Bristol.

Cheah, B. (2018, November 18). *Govt encouraging cabbies to move to e-hailing services for extra income*. *The Star Online*. Retrieved December 8, 2018, from https://www.thestar.com.my/news/nation/2018/11/18/govt-encouraging-cabbies-to-move-to-e-hailing-services-for-extra-income/

Chen, Y., & Salmanian, W. (2017). *User acceptance in the sharing economy: An explanatory study of transportation network companies in China based on UTAUT2*. Unpublished master's thesis, Jönköping International Business School, Jönköping, Sweden.

Collis, J., & Hussey, R. (2003). Business research: A practical guide for undergraduate and postgraduate students (2nd ed.). Houndmills: Palgrave Macmillan.

Curtis, L., Edwards, C., Fraser, K.L., Gudelsky, S., Holmquist, J., Thornton, K. and Sweetser, K.D. (2010). Adoption of social media for public relations by nonprofit organizations, *Public Relations Review, Vol. 36 (1),* 90–92.

Davis, F. D. (1985). *A technology acceptance model for empirically testing new end-user information systems: Theory and results*. Massachusetts Institute of Technology.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *The institute of Management Sciences, 35(8),* 982-1003.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989). User acceptance of computer technology: a comparison of two theoretical models, *Management Science, Vol. 35 (8),* 982–1003.

Eckhardt, A., Laumer, S., & Weitzel, T. (2009). Who influences whom? Analyzing workplace referents' social influence on IT adoption and non-adoption. *Journal of Information Technology, 2009 (24),* 11-24.

Engel-Yan, J., & Passmore, D. (2013). Carsharing and Car Ownership at the Building Scale. *Journal of the American Planning Association, 79(1),* 82–91.

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research: Reading, MA: Addison-Wesley.

Frenken, K. & Schor, J. (2017). *Putting the sharing economy into perspective. 23, 3-10*.

Goh, G. (2014, January 9). Uber starts its engines in Kuala Lumpur. Digital News Asia. Retrieved March 24, 2019, from https://www.digitalnewsasia.com/sizzle-fizzle/uber-starts-its-engines-in-kuala-lumpur

Goldman Sachs. (2017). *Rethinking mobility*. Retrieved from https://orfe.princeton.edu/~alaink/SmartDrivingCars/PDFs/Rethinking%20Mobility_GoldmanSachsMay2017.pdf

Gomes, V. (2018, July 10). *A game of monopoly: How consumers are becoming victims of the Uber-Grab merger.* Retrieved December 10, 2018, from https://www.expatgo.com/my/2018/07/10/a-game-of-monopoly-how-consumers-are-becoming-victims-of-the-uber-grab-merger/

Grab to lock horns with two unicorns in 2019. (2018, December). Retrieved December 10, 2018, from https://www.thejakartapost.com/news/2018/12/12/grab-to-lock-horns-with-two-unicorns-in-2019.html

Grosse-Ophoff, A., Hausler, S., Heineke, K., & Möller, T. (2017, April). How shared mobility will change the automotive industry. Retrieved from https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/how-shared-mobility-will-change-the-automotive-industry

Gupta, B., Dasgupta, S., & Gupta, A. (2008). Adoption of ICT in a government organization in a developing country: An empirical study. *The Journal of Strategic Information Systems, 17(2),* 140–154.

Hampshire, R., Simek, C., Fabusuyi, T., Di, X., & Chen, Xi. (2017). Measuring the Impact of an Unanticipated Disruption of Uber/Lyft in Austin, TX. Transportation Research Board 97th Annual Meeting.

Han, S., Mustonen, P., Seppanen, M., & Kallio, M. (2006). Physicians' acceptance of mobile communication technology: an exploratory study. *International Journal of Mobile Communications, 4(2),* 210-230.

Igbaria, M., Guimaraes, T., Davis, G. B. (1995). Testing the determinants of microcomputer usage via a structural equation model. *Journal of Management Information Systems, 1(4),* 87-114.

ITF. (2016). App-Based Ride and Taxi Services: Principles for Regulation. International Transportation Forum. Retrieved March 14, 2019, from https://www.itf-oecd.org/app-based-ride-and-taxi-services-principles-regulation

Joia, L. A., & Altieri, D. (2017). Adoption of E-Hailing Apps in Brazil: The Passengers' Standpoint. Twenty-third Americas Conference on Information Systems, Boston.

Karim, K. N. (2019, January 11). Two friends get jail, anning for robbing an e-hailing driver. News Straits Time. Retrieved April 1, 2019, from https://www.nst.com.my/news/crime-courts/2019/01/449463/two-friends-get-jail-caning-robbing-e-hailing-driver

Katzev, R. (2003). Car Sharing: A New Approach to Urban Transportation Problems. *Analyses of Social Issues and Public Policy, 3(1),* 65–86.

Kijsanayotin, B., Pannarunothai, S., & Speedie, S. M. (2009). Factors influencing health information technology adoption in Thailand's community health centers: Applying the UTAUT model. *International Journal of Medical Informatics, 78(6),* 404–416.

Klincevicius, M. G. Y., Morency, C., Trépanier, M. (2014). Assessing impact of carsharing on household car ownership in Montreal, Quebec, Canada. *Journal of the Transportation Research Board, 2416 (1),* 48-55.

Landau, S., Everitt, B. S. (2003). A Handbook Of Statistical Analysis using SPSS. Chapman and hall.

Lane, C. (2005). PhillyCarShare: First-Year Social and Mobility Impacts of Carsharing in Philadelphia, Pennsylvania. *Transportation Research Record: Journal of the Transportation Research Board, 1927,* 158–166.

Lee, J. (2018). Singapore fine is 'minor bump' in Grab's ride-hailing dominance. Retrieved February 28, 2019, from https://asia.nikkei.com/Spotlight/Sharing-Economy/Singapore-fine-is-minor-bump-in-Grab-s-ride-hailing-dominance

Lee, Y. (2019, January 25). Singapore proposes stricter rules for ride-hailing operators. The Star Online. Retrieved April 10, 2019 from https://www.thestar.com.my/tech/tech-news/2019/01/25/singapore-proposes-stricter-rules-for-ride-hailing-operators/

Lee, Y., Giles, T., & Amin, H. (2018, September 6). Ride-hailing giant Grab expects to double revenue in 2019. *The Star Online*. Retrieved December 11, 2018, from https://www.thestar.com.my/tech/tech-news/2018/09/06/ride-hailing-giant-grab-expects-to-double-revenue-in-2019/

Loose, W. (2010). *The state of European Car-sharing: Final report D 2.4 Work Package 2*. Retrieved from http://www.eltis.org/sites/default/files/tool/the_state_of_carsharing_europe.pdf

Lule, I., Omwansa, T. K., Waema, T.M. (2012). Application of technology acceptance model (TAM) in m-banking adoption in Kenya. *International Journal of Computing and ICT Research, 6(1),* 31-43.

Malhotra, N.K., Birks, D.F., Wills, P. (2012). Marketing Research - an applied approach, 4th ed. New Jersey: FT Press.

Marten, L. (2015). Assessing the Demand for Uber. NorthWestern University.

Mohamad Izham, M. I. (2018, December 13). Regulating E-Hailing In Malaysia. Is There Over-Regulation? *Asia Law Portal*. Retrieved March 3, 2019, from https://asialawportal.com/2018/12/13/regulating-e-hailing-in-malaysia-is-there-over-regulation/

Nag, P. (2017). Singapore: The most tech-savvy country in the world. Retrieved 25 March, 2019, from https://www.ibtimes.sg/singapore-most-tech-savvy-country-world-13756

Namazu, M., & Dowlatabadi, H. (2018). Vehicle ownership reduction: A comparison of one-way and two-way carsharing systems. *Transport Policy, 64,* 38–50.

Neelankavil, J. (2007). *International business research* (1st ed., p. 160). New York: Routledge.

Neuman, W. L., & Kreuger, L. (2003). *Social work research methods: Qualitative and quantitative approaches. Allyn and Bacon*.

Nunnally, J., & Bernstein, I. H. (1994). *Psychometric theory. 3rd Edition, New York: McGraw - Hill.*

Pikri, E. (2018, April 4). *Uber's almost gone, so here are 6 other ride hailing options in M'sia*. Retrieved December 8, 2018, from https://vulcanpost.com/637030/ride-hailing-competitor-malaysia-grab/

Prabowo, Y. (2018, February 6). *Uber, Go-Jek, Grab: What do people in Indonesia actually want from ride-hailing apps?* Retrieved December 10, 2018, from https://ecommerceiq.asia/cp-ride-hailing-apps-in-indonesia/

Price, J. A. (1975). Sharing: The integration of intimate economies. *Journal of Canadian Anthropology Society, 17(1),* 3-27.

Ram, S. & Sheth, J. N. (1989). Consumer Resistance to Innovations: The marketing Problem and its Solutions. *The Journal of Consumer Marketing, 6(2),* 5-14.

Ride Hailing - Malaysia. (2018, November). Retrieved February 28, 2019, from https://www.statista.com/outlook/368/122/ride-hailing/malaysia#market-age

Ride Hailing - Malaysia. (2018, November). Retrieved February 28, 2019, from https://www.statista.com/outlook/368/122/ride-hailing/malaysia#market-age

Ride Hailing - Singapore. (2018, November). Retrieved February 28, 2019, from https://www.statista.com/outlook/368/124/ride-hailing/singapore

Ride hailing market worth 276 billion USD by 2025. (2017, January). Retrieved December 8, 2018, from https://www.marketsandmarkets.com/PressReleases/mobility-on-demand.asp

Ride Hailing. (2019). *Statista.* Retrieved March 3, 2019 from https://www.statista.com/outlook/368/122/ride-hailing

Robson, C. (2002). Real World Research. Oxford: Blackwell.

Rogers, E. M. (2003). Diffusion of innovations (5th ed.). New York: Free Press.

Ruangkanjanases, A., & Techapoolphol, C. (2018). Adoption of E-hailing Applications: A Comparative Study between Female and Male Users in Thailand. Journal of Telecommunication, Electronic and Computer Engineering, 10 (1), 43-48.

Saunders, M., Lewis, P., Thornhill, A., & Wilson, J. (2009). Research Method for Business Students. (4th ed.) Prentice Hall: London.

Schattned, P., mazza, D., Hassan, Z. A. (2006). Doing A Pilot Study: Why Is It Essential?

Schor, J. (2014). Debating the Sharing Economy. *Open Journal of Social Sciences, 4 (6)*.

Sekaran, U. & Bougie, R. (2013). Research Methods for Business: A Skill-Building Approach (6th ed.). New York: Wiley.

Shaheen, S. A., Sperling, D., & Wagner, C. (1999). A Short History of Carsharing in the 90's. *Journal of World Transport Policy & Practice, 5 (3), 18-40*.

Shaheen, S., Nelson, C., Apaar, B., & Adam, C. (2015). Shared Mobility: A Sustainability & Technologies Workshop: Definitions, Industry Developments, and Early Understanding. Transportation Research Board.

Sharing economy revenues to double by 2022, reaching over $40 billion. (2017, July). Retrieved December 8, 2018, from https://www.juniperresearch.com/press/press-releases/sharing-economy-revenues-to-double-by-2022

Sivak, M., and Schoettle, B. (2016). Recent decreases in the proportion of persons with a driver's license across all ages groups. *University of Michigan Transportation Research Institute, 2016 (4)*, 1-8.

Steer Davies Gleave. (2015a). *Carplus annual survey of car clubs 2014/15 England and Wales (excluding London)*. London: Author.

Steer Davies Gleave. (2015b). *Carplus annual survey of car clubs 2014/15 London*. London: Author.

Steer Davies Gleave. (2015c). *Carplus annual survey of car clubs 2014/15 Scotland*. London: Author.

Taeihagh, A. (2017). Crowdsourcing, Sharing Economies and Development. *Journal of Developing Societies, Vol 33(2), 191–222.*

The rush for rail in Southeast Asia's fastest growing cities. (2018, February). Retrieved December 8, 2018, from https://www.jll.com.au/en/trends-and-insights/cities/the-rush-for-rail-in-southeast-asias-fastest-growing-cities

The Star Online. (2019). MyCar lodges police report against driver offering sex service to passenger. Retrieved March 17, 2019, from https://www.thestar.com.my/news/nation/2019/02/04/mycar-lodges-police-report-against-driver-offering-sex-service-to-passenger/

Timbuong, J. (2017). Women claims rape by Grab driver. Retrieved March 17, 2019, from https://www.thestar.com.my/news/nation/2017/06/13/woman-

claims-rape-by-grab-driver-single-mum-unable-to-fend-off-assault-because-she-was-drunk-after-o/

Torocsik, M., Szucs, K., & Kehl, D. (2014). How Generation Think: Research on generation Z. Acta Universitatis Sapientiae, Communicatio, 23-45.

Tossy, T. & Kisanjara, S. (2014). Investigating Factors Influencing the Adoption and Use of Free and Open Source Software (FOSS) in Tanzanian Higher Learning Institutions: Towards an Individual-Technology-Organizational-Environment (ITOE) Framework.

Toutenburg, H., & Shalabh. (2009). *Statistical Analysis of Designed Experiments* (Third ed.). New York: Springer-Verlag.

Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science, 46(2),* 186–204.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. User Acceptance of Information Technology: Toward a Unified View. MIS Quarterly, 27 (3).

Verhoeven, Jef C., Heerwegh, Dirk. & De Wit, Kurt (2010) Information and Communication Technologies in the Life of University Freshmen: An Analysis of Change, *Computers & Education, 55 (1),* 53-66.

Wang, Y.-S., Wu, M.-C., & Wang, H.-Y. (2009). *Investigating the determinants and age and gender differences in the acceptance of mobile learning. British Journal of Educational Technology, 40(1), 92–118.*

Wong, A. (2018, August 22). *This new Grab competitor has a long road ahead of them*. Retrieved December 8, 2018, from https://www.soyacincau.com/2018/08/22/diffride-new-ehailing-competitor-for-grab-malaysia/

Zakariya, B., & Syed, A. W. S. K. W. (2009). The effect of perceived risk on the intention to use E-commerce: The case of Algeria. *Journal of Internet Banking and Commerce, 14 (1).*

APPENDICES

Appendix A

Summary of Hypotheses Developed

Hypothesis (H)	References
H1: Performance expectancy has a significant and positive effect on behavioural intention on e-hailing application.	Venkatesh et al. (2012); Lee (2016); Chen et al. (2017); Moriguchi (2015)
H2: Effort expectancy has a significant and positive effect on behavioural intention of e-hailing application.	Han et al. (2006); Gupta et al. (2008); Lee (2016); Moriguchi (2015)
H3: Social influence has a significant and positive impact on behavioural intention to use e-hailing application.	Venkatesh et al. (2000); Eckhardt et al. (2009); Chen et al. (2017); Moriguchi (2015); Tossy (2014)
H4: Facilitating condition has a significant and positive impact on the behavioural intention on e-hailing application.	Curtis et al. (2010); Venkatesh et al. (2012); Yang (2010)
H5: Perceived risk has a significant and negative impact on the behavioural intention on e-hailing application.	Zakariya et al. (2009); Peng et al. (2014); Moriguchi (2014); Tossy (2014)

Appendix B

Constructs and Measurement Items

Construct	Items	Measurement Items	References
Performance Expectancy (PE)	PE1	I find that e-hailing applications are useful in my daily life.	Venkatesh et al. (2003), Chen et al. (2017)
	PE2	Using e-hailing applications enable me to access to quick transportation.	Venkatesh et al. (2003), Chen et al. (2017)
	PE3	Using e-hailing applications enable me to arrive at the destination in a shorter time.	Lee (2016)
	PE4	Using e-hailing applications enable me to improve my life efficiency.	Chen et al. (2017)
Effort Expectancy (EE)	EE1	The processes of using e-hailing applications are clear and understandable.	Venkatesh et al. (2003)
	EE2	I find that e-hailing applications are easy to use.	Venkatesh et al. (2003)
	EE3	It would be easy for me to become skilful at using e-hailing applications.	Venkatesh et al. (2003)
	EE4	Learning how to use an e-hailing application is easy for me.	Venkatesh et al. (2003)
Social Influence (SI)	SI1	People who influence my behaviour think that I should use e-hailing applications.	Venkatesh et al. (2003)
	SI2	People who are important to me think that I should use e-hailing applications.	Venkatesh et al. (2003)
	SI3	Famous people could influence my decision to choose an e-hailing application.	Chen et al. (2017)
	SI4	I perceive that by using e-hailing applications raises my status or image.	Chen et al. (2017)

Facilitating Conditions (FC)	FC1	The e-hailing application is running smoothly on my smartphone.	Chen et al. (2017)
	FC2	I am aware that the instruction information about how to use e-hailing application is accessible to me.	Chen et al. (2017)
	FC3	The e-hailing application is compatible with other systems I use.	Venkatesh et al. (2003)
	FC4	I am aware that customer support of e-hailing applications is available for assistance.	Chen et al. (2017)
Perceived Risk (PR)	PR1	I think there are risks in private protection when using e-hailing applications.	Wu (2005), Peng et al. (2014)
	PR2	I think there are risks in mobile payment when using e-hailing applications.	Wu (2005), Peng et al. (2014)
	PR3	The location function of e-hailing applications makes me feel unsafe.	Wu (2005), Peng et al. (2014)
	PR4	I do not trust the driver or other ride-sharing participants of an e-hailing application.	Weng et al. (2017), Amirkiaee et al. (2018)
Behavioural Intention (BI)	BI1	I intend to use an e-hailing application whenever I need a taxi.	Lee (2016)
	BI2	I intend to use an e-hailing application in the future.	Venkatesh et al. (2003)
	BI3	I predict that I would use an e-hailing application frequently in the future.	Lee (2016)
	BI4	I intend to use an e-hailing application rather than other methods of transportation.	Lee (2016)

Appendix C

Online Questionnaire for Malaysia

The Determinants Influencing the User's Intention to Adopt E-Hailing Service (Malaysia)

Dear Sir / Madam,

We are final year students, currently pursuing Bachelor of International Business (Hons) in Universiti Tunku Abdul Rahman (UTAR), under Faculty of Accounting and Management (FAM). You are invited to take part in this survey for our research project on the determinants influencing the user's intention to adopt e-hailing services. E-hailing refers to the process of a car, taxi, or any other form of vehicle picking up a passenger from a request made through a computer or mobile device. Some of the examples of e-hailing services are Grab, Uber, and MyCar. The objective of this survey is to understand the relationship between the 5 variables and the behavioural intention to use an e-hailing service.

This questionnaire consists of 3 sections. If you are able to participate in the study, it will take you approximately 10 to 15 minutes to complete the questionnaire.

Under the Personal Data Protection Act (2010), the data collected from this study will solely be used for research purpose. We hereby assure you that your participation will be anonymous and all personal information collected will be kept confidential. By completing the survey, it implies that you understood the purpose of providing your data.

Thank you for your precious time and effort participating in this survey. We wish you every success in your future.

Research Members:
Cheong Jia Ern 1501840
Lee Jing Heng 1605781

Should you have any enquiries, do not hesitate to contact us through email:
cheongjiaern08@gmail.com

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The Determinants Influencing the User's Intention to Adopt E-Hailing Service (Malaysia)

* Required

Section A: Screening Question

Please choose your answer to each question as stated below.

For your information, e-hailing refers to the process of a car, taxi, or any other form of vehicle picking up a passenger from a request made through a computer or mobile device. Some of the examples of e-hailing services are Grab, Uber, and MyCar.

A1. Have you used any e-hailing application before? *

- ○ Yes
- ○ No (Your survey has ended. Thank you for your participation.)

A2. Which e-hailing application have you used before? *

- ☐ Grab
- ☐ MyCar
- ☐ Other: _____

BACK NEXT

The Determinants Influencing the User's Intention to Adopt E-Hailing Service (Malaysia)

* Required

Section B: General Information

Please choose your answer to each question as stated below.

B1: What is your gender? *

- ◯ Female
- ◯ Male

B2: What is your age group? *

- ◯ 18 years old or below
- ◯ 19 - 24 years old
- ◯ 25 - 34 years old
- ◯ 35 - 49 years old
- ◯ 50 - 59 years old
- ◯ 60 years old or above

B3: How many years of experience do you have with e-hailing application? *

- ○ Less than 1 year
- ○ Less than 2 years
- ○ Less than 3 years
- ○ Less than 4 years
- ○ 4 years and above

B4: Did you use the e-hailing application voluntarily? *

- ○ Yes
- ○ No

B5: What is your employment status? *

- ○ Student
- ○ Private Sector Employee
- ○ Self Employed
- ○ Government Servant
- ○ Househusband/Housewife
- ○ Retired
- ○ Other:

The Determinants Influencing the User's Intention to Adopt E-Hailing Service (Malaysia)

* Required

Section C: The Determinants Influencing the User's Intention to Adopt E-Hailing Service

Please choose your answer to each statement listed below to indicate the extent to which you agree or disagree with the following statement.

Performance Expectancy *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I find that e-hailing applications are useful in my daily life.	○	○	○	○	○
Using e-hailing applications enable me to access to quick transportation.	○	○	○	○	○
Using e-hailing applications enable me to arrive at the destination in a shorter time.	○	○	○	○	○
Using e-hailing applications enable me to improve my life efficiency.	○	○	○	○	○

Effort Expectancy *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The processes of using e-hailing applications are clear and understandable.	○	○	○	○	○
I find that e-hailing applications are easy to use.	○	○	○	○	○
It would be easy for me to become skilful at using e-hailing applications.	○	○	○	○	○
Learning how to use an e-hailing application is easy for me.	○	○	○	○	○

Social Influence *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
People who influence my behaviour think that I should use e-hailing applications.	○	○	○	○	○
People who are important to me think that I should use e-hailing applications.	○	○	○	○	○
Famous people could influence my decision to choose an e-hailing application.	○	○	○	○	○
I perceive that by using e-hailing applications raises my status or image.	○	○	○	○	○

Facilitating Conditions *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The e-hailing application is running smoothly on my smartphone.	○	○	○	○	○
I am aware that the instruction information about how to use e-hailing application is accessible to me.	○	○	○	○	○
The e-hailing application is compatible with other systems I use.	○	○	○	○	○
I am aware that customer support of e-hailing applications is available for assistance.	○	○	○	○	○

Perceived Risk *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I think there are risks in private protection when using e-hailing applications.	○	○	○	○	○
I think there are risks in mobile payment when using e-hailing applications.	○	○	○	○	○
The location function of e-hailing applications makes me feel unsafe.	○	○	○	○	○
I do not trust the driver or other ride-sharing participants of an e-hailing application.	○	○	○	○	○

Behavioural Intention *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I intend to use an e-hailing application whenever I need a taxi.	○	○	○	○	○
I intend to use an e-hailing application in the future.	○	○	○	○	○
I predict that I would use an e-hailing application frequently in the future.	○	○	○	○	○
I intend to use an e-hailing application rather than other methods of transportation.	○	○	○	○	○

BACK SUBMIT

Appendix D

Online Questionnaire for Singapore

The Determinants Influencing the User's Intention to Adopt E-Hailing Service (Singapore)

Dear Sir / Madam,

We are final year students, currently pursuing Bachelor of International Business (Hons) in Universiti Tunku Abdul Rahman (UTAR), under Faculty of Accounting and Management (FAM). You are invited to take part in this survey for our research project on the determinants influencing the user's intention to adopt e-hailing services. E-hailing refers to the process of a car, taxi, or any other form of vehicle picking up a passenger from a request made through a computer or mobile device. Some of the examples of e-hailing services are Grab and Uber. The objective of this survey is to understand the relationship between the 5 variables and the behavioural intention to use an e-hailing service.

This questionnaire consists of 3 sections. If you are able to participate in the study, it will take you approximately 10 to 15 minutes to complete the questionnaire.

The data collected from this study will solely be used for research purpose. We hereby assure you that your participation will be anonymous and all personal information collected will be kept confidential. By completing the survey, it implies that you understood the purpose of providing your data.

Thank you for your precious time and effort participating in this survey. We wish you every success in your future.

Research Members:
Cheong Jia Ern 1501840
Lee Jing Heng 1605781

Should you have any enquiries, do not hesitate to contact us through email:
cheongjiaern08@gmail.com

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Never submit passwords through Google Forms.

The Determinants Influencing the User's Intention to Adopt E-Hailing Service (Singapore)

* Required

Section A: Screening Question

Please choose your answer to each question as stated below.

For your information, e-hailing refers to the process of a car, taxi, or any other form of vehicle picking up a passenger from a request made through a computer or mobile device. Some of the examples of e-hailing services are Grab and Uber.

A1. Have you used any e-hailing application before? *

- ○ Yes
- ○ No (Your survey has ended. Thank you for your participation.)

A2. Which e-hailing application have you used before? *

- ☐ Grab
- ☐ Ryde
- ☐ Kardi
- ☐ Tada
- ☐ Filo
- ☐ Other: _____

The Determinants Influencing the User's Intention to Adopt E-Hailing Service (Singapore)

* Required

Section B: General Information

Please choose your answer to each question as stated below.

B1: What is your gender? *

- ○ Female
- ○ Male

B2: What is your age group? *

- ○ 18 years old or below
- ○ 19 - 24 years old
- ○ 25 - 34 years old
- ○ 35 - 49 years old
- ○ 50 - 59 years old
- ○ 60 years old or above

B3: How many years of experience do you have with e-hailing application? *

- ○ Less than 1 year
- ○ Less than 2 years
- ○ Less than 3 years
- ○ Less than 4 years
- ○ 4 years and above

B4: Did you use the e-hailing application voluntarily? *

- ○ Yes
- ○ No

B5: What is your employment status? *

- ○ Student
- ○ Private Sector Employee
- ○ Self Employed
- ○ Government Servant
- ○ Househusband/Housewife
- ○ Retired
- ○ Other:

The Determinants Influencing the User's Intention to Adopt E-Hailing Service (Singapore)

* Required

Section C: The Determinants Influencing the User's Intention to Adopt E-Hailing Service

Please choose your answer to each statement listed below to indicate the extent to which you agree or disagree with the following statement.

Performance Expectancy *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I find that e-hailing applications are useful in my daily life.	○	○	○	○	○
Using e-hailing applications enable me to access to quick transportation.	○	○	○	○	○
Using e-hailing applications enable me to arrive at the destination in a shorter time.	○	○	○	○	○
Using e-hailing applications enable me to improve my life efficiency.	○	○	○	○	○

Effort Expectancy *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The processes of using e-hailing applications are clear and understandable.	○	○	○	○	○
I find that e-hailing applications are easy to use.	○	○	○	○	○
It would be easy for me to become skilful at using e-hailing applications.	○	○	○	○	○
Learning how to use an e-hailing application is easy for me.	○	○	○	○	○

Social Influence *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
People who influence my behaviour think that I should use e-hailing applications.	○	○	○	○	○
People who are important to me think that I should use e-hailing applications.	○	○	○	○	○
Famous people could influence my decision to choose an e-hailing application.	○	○	○	○	○
I perceive that by using e-hailing applications raises my status or image.	○	○	○	○	○

Facilitating Conditions *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The e-hailing application is running smoothly on my smartphone.	○	○	○	○	○
I am aware that the instruction information about how to use e-hailing application is accessible to me.	○	○	○	○	○
The e-hailing application is compatible with other systems I use.	○	○	○	○	○
I am aware that customer support of e-hailing applications is available for assistance.	○	○	○	○	○

Perceived Risk *

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I think there are risks in private protection when using e-hailing applications.	○	○	○	○	○
I think there are risks in mobile payment when using e-hailing applications.	○	○	○	○	○
The location function of e-hailing applications makes me feel unsafe.	○	○	○	○	○
I do not trust the driver or other ride-sharing participants of an e-hailing application.	○	○	○	○	○

Appendix E

Cronbach's Alpha Value of Pilot Test

Constructs	Cronbach's Alpha	No. of Items
PE	0.910	4
EE	0.942	4
SI	0.893	4
FC	0.820	4
PR	0.879	4
BI	0.791	4

Appendix F

SPSS Output of Malaysia Responses

Reliability Test Result for Malaysia Responses

Construct	Mean	Standard Deviation	Cronbach's Alpha	No. of Items
PE	3.9611	0.66618	0.869	4
EE	4.0622	0.66782	0.889	4
SI	2.9080	0.83598	0.838	4
FC	3.8264	0.62160	0.800	4
PR	3.4935	0.72458	0.805	4
BI	3.8355	0.65685	0.775	4

Correlation Test Result of Malaysia Responses

Correlations

			PE	EE	SI	FC	PR	BI
Spearman's rho	PE	Correlation Coefficient	1.000					
		Sig. (2-tailed)	.					
		N	193					
	EE	Correlation Coefficient	.541**	1.000				
		Sig. (2-tailed)	.000	.				
		N	193	193				
	SI	Correlation Coefficient	.168*	.104	1.000			
		Sig. (2-tailed)	.019	.150	.			
		N	193	193	193			
	FC	Correlation Coefficient	.585**	.653**	.210**	1.000		
		Sig. (2-tailed)	.000	.000	.003	.		
		N	193	193	193	193		
	PR	Correlation Coefficient	.089	.001	.205**	.031	1.000	
		Sig. (2-tailed)	.217	.987	.004	.668	.	
		N	193	193	193	193	193	
	BI	Correlation Coefficient	.522**	.563**	.269**	.525**	.039	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.590	.
		N	193	193	193	193	193	193

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Model Summary of Malaysia Responses

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728[a]	.530	.517	.45645

ANOVA of Malaysia Responses

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.878	5	8.776	42.119	.000[b]
	Residual	38.962	187	.208		
	Total	82.839	192			

a. Dependent Variable: BI

b. Predictors: (Constant), PR, EE, SI, PE, FC

Coefficients of Malaysia Responses

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.498	.269		1.850	.066	-.033	1.030
	PE	.223	.073	.227	3.051	.003	.079	.368
	EE	.339	.079	.344	4.311	.000	.184	.494
	SI	.110	.042	.140	2.607	.010	.027	.193
	FC	.198	.084	.187	2.352	.020	.032	.364
	PR	-5.667E-5	.047	.000	-.001	.999	-.092	.092

a. Dependent Variable: BI

Appendix G

SPSS Output of Singapore Responses

Reliability Test Result for Singapore Responses

Construct	Mean	Standard Deviation	Cronbach's Alpha	No. of Items
PE	3.9832	0.95484	0.927	4
EE	4.1202	0.89088	0.954	4
SI	3.0673	1.22039	0.914	4
FC	3.9712	0.86904	0.931	4
PR	2.8702	1.06294	0.918	4
BI	3.8630	0.98402	0.917	4

Correlation Test Result of Singapore Responses

Correlations

			PE	EE	SI	FC	PR	BI
Spearman's rho	PE	Correlation Coefficient	1.000					
		Sig. (2-tailed)	.					
		N	104					
	EE	Correlation Coefficient	.649**	1.000				
		Sig. (2-tailed)	.000	.				
		N	104	104				
	SI	Correlation Coefficient	.557**	.440**	1.000			
		Sig. (2-tailed)	.000	.000	.			
		N	104	104	104			
	FC	Correlation Coefficient	.631**	.624**	.566**	1.000		
		Sig. (2-tailed)	.000	.000	.000	.		
		N	104	104	104	104		
	PR	Correlation Coefficient	-.412**	-.397**	-.303**	-.494**	1.000	
		Sig. (2-tailed)	.000	.000	.002	.000	.	
		N	104	104	104	104	104	
	BI	Correlation Coefficient	.619**	.642**	.598**	.621**	-.443**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.
		N	104	104	104	104	104	104

**. Correlation is significant at the 0.01 level (2-tailed).

Model Summary of Singapore Responses

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.868[a]	.754	.741	.50054

ANOVA of Singapore Responses

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.182	5	15.036	60.016	.000[b]
	Residual	24.553	98	.251		
	Total	99.735	103			

a. Dependent Variable: BI

b. Predictors: (Constant), PR, EE, SI, PE, FC

Coefficients of Singapore Responses

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.552	.369		1.496	.138	-.181	1.285
	PE	.580	.109	.563	5.349	.000	.365	.796
	EE	.143	.095	.129	1.510	.134	-.045	.330
	SI	.106	.052	.132	2.057	.042	.004	.209
	FC	.087	.124	.077	.703	.484	-.160	.334
	PR	-.091	.055	-.099	-1.671	.098	-.200	.017

a. Dependent Variable: BI

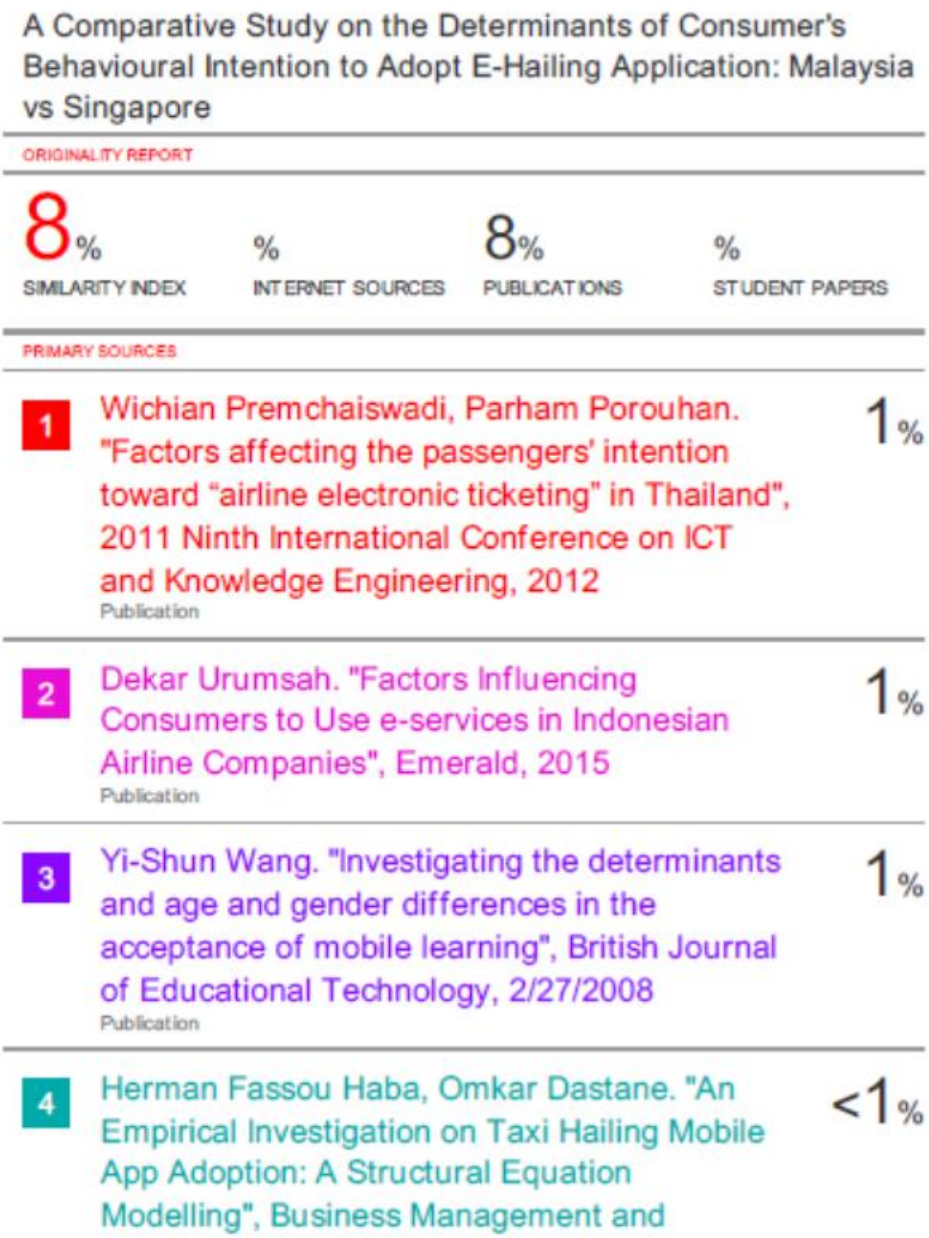
Appendix H

Summary of Findings

Hypothesis (H)	Malaysia	Singapore
H1: Performance expectancy has a significant and positive effect on behavioural intention to use an e-hailing application.	**Supported**	**Supported**
H2: Effort expectancy has a significant and positive effect on behavioural intention to use an e-hailing application.	**Supported**	Not Supported
H3: Social influence has a significant and positive impact on behavioural intention to use e-hailing application.	**Supported**	**Supported**
H4: Facilitating condition has a significant and positive impact on the behavioural intention to use an e-hailing application.	**Supported**	Not Supported
H5: Perceived risk has a significant and negative impact on the behavioural intention to use e-hailing application.	Not Supported	Not Supported

Appendix I

Turnitin Report



A Comparative Study on the Determinants of Consumer's Behavioural Intention to Adopt E-Hailing Application: Malaysia vs Singapore

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2	Dekar Urumsah. "Factors Influencing Consumers to Use e-services in Indonesian Airline Companies", Emerald, 2015 Publication	1%
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