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**MASTER OF BUSINESS ADMINISTRATION**

**A Study on the Structural Relations  
among Factors Influencing the Adoption Intention of  
Grab Ride-Hailing Service in Vietnam**

**The Graduate School  
of the University of Ulsan**

**Department of Business Administration**

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**A Study on the Structural Relations  
among Factors Influencing the Adoption Intention of  
Grab Ride-Hailing Service in Vietnam**

Supervisor: Ju-sik Park

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By

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**A Study on the Structural Relations among  
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## **ABSTRACT**

The ride-hailing service is considered an exploding transportation tool throughout Vietnam. While most of citizens in big cities have accepted ride-hailing service, there are still a significant number of non-users in small and non-cities. Analyzing the factors that influence the adoption intention toward Grab ride-hailing service in Vietnam is especially critical to encourage the usage of this service. This paper proposes the structural framework based on the combination between the theory of perceived value, perceived risks and theory of innovation acceptance to predict the adoption intention of nonusers. The perceived value is measured by utilitarian benefits and hedonic benefits (perceived usefulness (PU) and perceived ease of use (PEOU) – the former, perceived enjoyment – the latter). The perceived risk is conceptualized by three variables: privacy risk, security risk, and performance risk. Subjective norms also support the adoption intention. The new variable automobile dependency is added to examine its positive impact on adoption intention. The data were collected in Vietnam, the respondents are non-users or indirect users of Grab ride-hailing service from small or non-cities. The result shows that perceived usefulness, perceived ease of use, perceived enjoyment, subjective norms directly affect perceived value, which directly affect the adoption intention. Additionally, perceived risk also significantly impacts the adoption intention and moderates the relationship between perceived value and adoption intention. Finally, the automobile dependency influences the adoption intention of Grab ride-hailing service.



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## **CHAPTER I INTRODUCTION**

While motorcycles are often used for leisure purposes in most developed countries, they are a major form of transport in many developing countries (Lin et al., 2001; Nguyen-Phuoc et al., 2019). Along with a growing level of motorization, motorcycle ownership, and use have been increasing rapidly in developing countries over the past decade (Tuan and Mateo-Babiano, 2013; Akaateba et al., 2014). Motorbike taxis provide a common form of public transport in low and middle-income countries (Akinlade and Brieger, 2003; Sopranzetti, 2012; Tuan and Mateo-Babiano, 2013; Lan et al., 2013; Oginni et al., 2007), offering a reliable, flexible, and low-cost form of mobility (Iles, 2005).

Furthermore, the scientific and technological revolution has brought a drastic change worldwide. The application of information technology in economic activity creates tremendous benefits for the whole society. The advent of the Internet is a precondition for the digitization of economic activities. The Internet is no longer a means of simple techniques that have become a new environment of all economic activity, social, culture, education is effective. The transmission system of the news on the network quickly really helps the business process. Technological revolution gives rise of the appearance to the modern economic model, based on Internet connectivity, creating new business models. Ride-hailing service is one of the emerging business models in recent times.

In Vietnam, most people ride motorbikes daily, which is comfortable for work. Therefore, the traffic force in Vietnam is very crowded. Ride-hailing services or tech bike presents a whole new prospect of technological manipulation – the advanced view

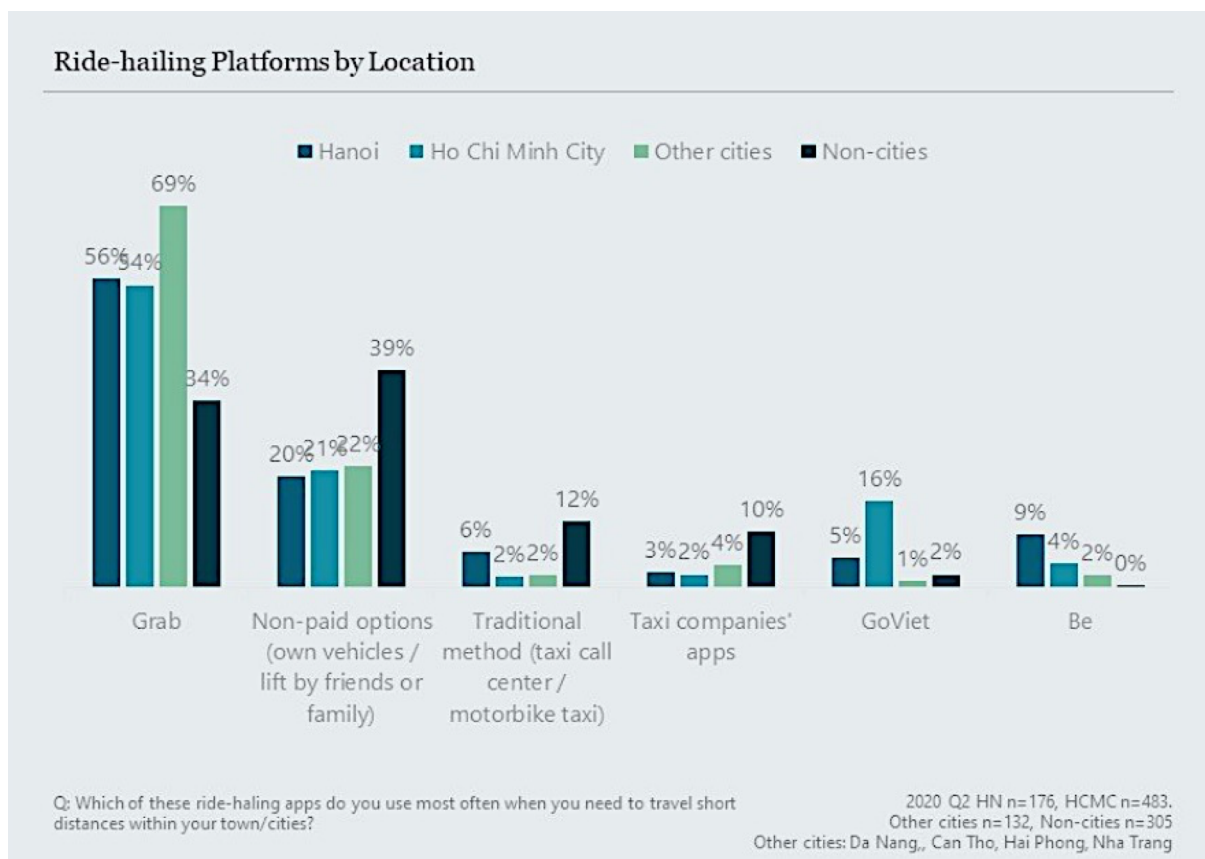
with 4.0 technology. The world is increasingly booming on the computer network, people can quickly communicate and connect with each other more easily through a variety of Internet services. The field of high technology applications is given precedence, that is an inevitable trend. Ride-hailing services have really made a huge achievement in transportation services in Vietnam.

This form of service is developing in Vietnam and other countries in different speeds and levels. In the developed countries, it has become popular, while in the developing countries, it is being studied more and applied in every inch of life. However, in terms of academic studies, many previous researches are accomplished for the e-commerce field, not a lot of ride-hailing services (bike and taxi) studies are implemented in developing countries, especially in Vietnam.

Some Western countries have operated online-enabled platforms for transportation and achieved great results. Especially, in developing countries, through these applications, numerous problems are solved, the strength of it promotes itself rapidly developing to enjoy a digital economy. And Vietnam is in the integration process, thus Vietnam is not outside the technological transportation trends. Even though app-based transportation is no longer a new issue in Vietnam, there are many problems that had not been understood, especially the nature and benefits of tech bike, and the effective application of it, the factors of customers' perception. Hence, the development of online-enabled transportation platforms in Vietnam is still facing many difficulties and obstacles.

The ride-hailing services become the new norm of Vietnamese who are living in big cities in Vietnam such as Hanoi, Hochiminh, etc. However, the usage percentage in

other cities and provinces in Vietnam still counts a smaller segment in total usage number. In the report of ride-hailing services by location in Q2, 2020, in small cities and non-cities, non-paid options of transportation or traditional methods such as taxi call center or motorbike taxi account for a huge number of local citizens. To be compared with the coverage of Grab service throughout Vietnam within 36 cities and provinces, the percentage of users from cities except for Hanoi, Hochiminh, Danang, Haiphong, and Nhatrang is insignificant. There are nonusers who are in small cities and non-cities. What are their motivations that cause the adoption intention toward the ride-hailing services in general and Grab service in particular? The research aims to analyze the perception of nonusers toward Grab ride-hailing service adoption intention.



**Figure 1. Ride-hailing Platforms by Location in Vietnam (2020)**

This research is conducted in the aspect of the perception of consumers about the value which ride-hailing services could offer to consumers – perceived value. Perceived value is a factor influencing consumer decision making which is behavioral intention toward an innovation (Chen and Lin, 2015). In addition, I also apply theories to explain customers' behavioral intention of new technology, for instance, Diffusion of Innovations Theory (DIT), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), and The Unified Theory of Acceptance and Use of Technology Model (UTAUT). The perceived ease of use and perceived usefulness are considered components as utilitarian benefits affecting consumers' perceived value and adoption intention toward tech bike services. Moreover, enjoyment as a hedonic benefit has positive influences on service quality (Dabholkar, 1996). So, the hedonic element also is included in the determinant set of factors influencing the perceived value. In other segments, for instance, banking or e-services, the perceived risk has a negative effect on the intention to try new technology, Ruyter et al. (2001). The construct of users' perceived risk is included privacy risk, security risk, and performance risk, which is supposed to influence users' perceived value. In addition, perceived risk is considered as the moderator of the relationship between the perceived value and adoption intention toward Grab ride-hailing service. Subjective norms and automobile dependency is needed to predict the intention toward the innovation of transportation in Vietnam.

The research focuses on factors that impact consumers' intention to use ride-hailing services in Vietnam and which degree of perception of consumers toward the value those services provide them. Following that, management could imply into strategic

plans to enrich the value offered to users to encourage non-users adopting Grab ride-hailing service.

## **CHAPTER II LITERATURE REVIEW**

### **2.1 Ride-hailing services in Vietnam**

#### **2.1.1 Definition of ride-hailing services**

Ride-hailing services could be defined as a smartphone application that allows users to order a motorbike or car ride from professional or part-time drivers (Clewlow and Mishra, 2017). This application requires users' global positioning system (GPS) to track down the current locations of passengers and drivers. Passengers require a ride by using the app to entering their pick-up place and destination. Then, the app will suggest different riding plans with different conditions and fees. For instance, hailing a motorbike ride will cheaper than a car one. Passengers also can choose various types of cars based on their preferences. Next, they book a ride and wait for the driver. Those apps also provide other information such as waiting times, drivers' statistics, and feedbacks. In short, ride-hailing services provider is the third party that connects passengers and drivers. Besides full-time, professional drivers, people who own cars or motorbikes want to earn more for living could join as part-time drivers.

Ride-hailing services have generated lots of benefits for customers. The benefits of price by technological transportation is much inexpensive than a traditional motorcycle taxi. Along with that, the service users do not need to bargain the price with drivers, the price is listed on the application. Customers also are awarded a discount price. In addition, instead of going to find traditional motorbikes, customers only need a smartphone to install the transportation application and utilize this application to get the drivers of motorbikes or cars in default of waiting times. The application additionally displays the information of riders such as name, age, vehicle registration, and their score



– evaluation from previous passengers. Customers also control their route when using services, which constructs the assurance for passengers. In fact, ride-hailing services have brought a cutting-edge lifestyle to consumers.

#### 2.1.2 Vietnam market

In Vietnam, motorcycle is the main form of transportation. Vietnam, a communist-ruled country of 93 million, has about 45 million motorbikes, the highest rate of motorcycle ownership per capita in Southeast Asia. Some 3.1 million new motorbikes were sold last year. Nowadays, everyone has their mobile phones and inexpensive Internet access. Thus, most people in Vietnam cities can go online easily.

Vietnam is an emerging market including new experiences. Even though entering Vietnam market has to deal with difficulties; the market contains many interesting opportunities. Social economy Vietnam owns the tremendous growth potential that technology, app-based transportation can help to awaken and develop Vietnam technological potential, seek change, learn and continue to develop.

It just appeared recently, a technological application which is considered some kind of service to hail a car or a bike through smartphone such as the service of Uber and Grab. With development and development of technology, wherever they are, people can book a trip by car or motorbike easily. Inexpensive and convenience, ride-hailing service becomes alternative for traditional motorbike.

Beside technologies' features as safe, fast, accuracy and convenience that users experience on the application, advanced technologies also have artificial intelligence (AI), machine learning (machine learning), big data (big data). From the way people

use applications every day, application can analyze the data, reading and bring the right services to meet the actual needs at the right time to customers.

### 2.1.3 The development of ride-hailing services in small and non-cities in Vietnam

These years, ride-hailing service have become more common throughout Vietnam. Ride-hailing service providers expand their sharing economy business models to small and non-cities in Vietnam. The appearance of ride-hailing services brings several advantages for Vietnam transportation. Users have more substitutes with even lower price for their trip.

Previous time, the government regulation that allowed ride-hailing services could work only within 5 big cities restricted the development of ride-hailing services. Nowadays, the ride-hailing services could officially be accepted in other cities throughout Vietnam. The services' providers could expand their business if the infrastructure and construction in cities allow the operation of ride-hailing services. This, in turn, creates more opportunities for Vietnamese small or non-cities citizens to adopt the technological services. On the other hand, this is the chance for the economic development in small or non-cities.

Ride-hailing services have built the ecosystem which involves food delivery, parcel delivery, payment via e-pay. These features help users implement daily tasks easily and more convenient. The service users in big cities in Vietnam such as Hanoi, Hochiminh are familiar with this ecosystem. However, in small and non-cities, the users still get along with the traditional payment or cannot take all advantages of the application. In small and non-cities, the ride-hailing services currently encourage the nonusers to adopt

the services and use services as an ecosystem which is associated to their every inch of life.

## **2.2 Grab services**

Grab is a technology company is established in Malaysia in 2012 (Cheong and Kash, 2014). Grab provides the ride-hailing services in Southeast Asian countries such as Malaysia, Indonesia, Philippines, and Vietnam. Furthermore, Grab also makes delivery services available via its mobile app.

The more people use Internet in their daily lives, the more the development of online economic, especially the online services. According to the report in 2018 of Google and Temasek, the Internet economy in Southeast Asian countries reached the number 72 billion USD in the total gross merchandise value. The significant amount came from e-commerce and online travel booking, followings are online media and ride-hailing services.

Grab expanded to Philippines (Calvin, 2014), Singapore, and Thailand in 2013 (Digital News Asia, 2013). Grab first launched its service to Hochiminh City, Vietnam in 2014 (Do Anh Minh, 2014). By 2015, Grab service was used throughout Vietnam. Even though there are many rivals in the tech-bike market, Grab reached many achievements and took over Uber's assets in Southeast Asian area in 2018 (Danielle Keeton-Olsen, 2018).

Covid-19 pandemic delivers the crisis toward worldwide economy. However, it becomes both challenge and opportunity for Grab service. People under the lockdown situation and online services help them to adapt with the social distancing lifestyle. Delivery has become a new norm to citizens.

### **2.3 Perceived value**

Perceived value which is the fundamental term in marketing field is illustrated as “the consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given” (Holbrook, 1999; Woodruff, 1997; Zeithaml, 1988). In other words, the perceived value can be regarded as the trade-off relationship between the offering provider and the buyer. When customers consider to make decision to buy goods or services, they review the benefits they will receive and the cost they have to pay off.

Furthermore, perceived value is consisted of multiple aspects of value they are able to acquire. Thus, different constructs are applied to measure consumers’ perceived value, such as qualitative and quantitative, objective and subjective (Schechter, 1984). Other researchers, Monroe (1990), Dodds et al. (1991), Naumann and Jackson (1999), defined perceived value equals the ratio of perceived benefits and perceived sacrifice. As in the study of Hallowell, in Croinin et a., (2000), perceived value is simplified as the ratio of perceived quality relative to the price.

Previous academic papers measured the perceived value by examine the perceived benefits which are made up of utilitarian benefits and hedonic benefits (Lim and Ang, 2008). Utilitarian benefits are defined as the utility of the offering, such as the efficiency and ease of use. Hedonic benefits focus on the enjoyment and fun can be acquired from goods or services.

## **2.4 Technology adoption intention**

### **2.4.1 Diffusion of innovations Theory (DIT)**

Everett Rogers (1995) defined Diffusion of innovations is “the process by which an innovation is communicated over time among the participants in a social system”. New ideas are coming up every day. Therefore, how they are spread and adopted is explained by Diffusion of innovation.

Spreading a new idea depends on the innovation, communication channels, time, and a social system (Rogers, 1995). Consumers cannot make decisions without considering others’ opinions. Those might be provided by their family, friends. Especially, in the digital world, media and opinion makers also influence consumers’ decisions making process. Opinion leader, electronic social networks, and organization are three key social systems. There are two types of leader monomorphic and polymorphic (Merton, 1957). In overall, leaders have expertise in a field or multi field. And they have high level influence on their followers. Thanks to Internet, we have more social network, for instance, Facebook, Instagram, YouTube, etc. Innovation can be spread faster and wider.

Innovations – potential adopters – consider the technology benefits when they approach the innovation. Regardless of the difficulties during the innovation observation and learning, potential adopters likely to adopt the innovation (Rogers, 1962). Innovators are eager for accomplishing knowledge. Of individual adopters, the ability and motivation will affect the innovation adoption process (Eveland, 1986).

#### 2.4.2 Theory of Planned Behavior (TPB)

Theory of Reasoned Action (TRA) is the origin of Theory of Planned Behavior (TPB) (Ajzen & Fishbein, 1980). The theory explains human behavioral intention in various situation.

Both TRA and TPB include key variables behavioral intention and subjective norms. Behavioral intention is people's readiness to perform behavior. Subjective norms are belief about surrounding people's judgement about the behavior. Subjective norms could be from the peer group or family members. TRA aforementioned that behavioral intention guides actual behavior. TPB is TRA adding perceived behavioral control (Ajzen, 1991). According to Ajzen (1991), perceived behavioral control is come from self-efficacy. In Badura's social cognitive theory (1997), people perform an act when they require a particular outcome.

#### 2.4.3 Technology Acceptance Model (TAM)

Technology acceptance model (TAM) was the development of Theory of Reasoned Action (TRA) (Davis, 1989; Samaradiwakara & Gunawardena, 2014).

Basic TAM model explains the users' acceptance of technology through two attributes: perceived usefulness (PU) and perceived ease of use (PEU). Perceived usefulness is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989). Ease of use is "the degree to which a person belief that using a particular system would be free of effort" (Davis, 1989). Moreover, the perceived ease of use also affects the perceived usefulness and mediate its effect (Davis, 1989). Most of researchers use TAM model to investigate the adoption of an innovation (Venkatesh et al., 2003). Weijters, Schillewaert, Rangarajan, and Falk

(2005) found out that PU and PEO impact the consumers' attitude toward the innovation.

Monswé, Dellaert, & Ruyter (2004) considered the enjoyment also affect consumers' behavior toward the adoption of innovation. There is a positive relationship between the hedonic aspect associated with technology and consumers' adoption of technology as self-scanning in the study by Weijers et al. (2005). Another investigation approved above relationship such as by Dabholkar and Bagozzi (2002) and by Elliott and Speck (2005). Venkatesh et al. (2003) proposed the unified theory of acceptance and use of technology model (UTAUT) which is used for analyzing technology acceptance. The UTAUT model consists performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), behavioral intention (BI) to use the system, and usage behavior. The performance expectancy and effort expectancy are perceived usefulness and ease of use when encounter new technologies.

According to Chen (2017), UTAUT2 also includes facilitating conditions, hedonic motivation, price value, habit and perceived ease of use and usefulness. Wang (2010) stated that perceived value impact behavioral intention; however, perceived playfulness executes minor effects on behavioral intention. In other research relating to the behavioral intention toward learning by mobile, perceived enjoyment, self-efficacy, and perceived risk conduct the behavior of students to adopting technologies into their education (Chao, 2019).

#### 2.4.4 Extended TAM

Perceived risk is believed as a variable included in TAM model by Cox (1967). Consumer will produce the subjective thoughts of consequences based on anything that

can be observed (Bettman, 1973). In consumer behavior study, perceived risk is consumers' judgement of negative consequences. In the study of Ruyter et al. (2001), perceived service quality and the intention to use e-services are reduced by perceived risk. In other words, perceived risk is shown to affect the technology adoption of consumers.

## **2.5 Perceived risk**

Consumers experience the uncertainty when they cannot predict the consequences of using a product or service (Cox and Rich, 1964). According Fishbein and Ajzen (1975), consumers are aware of the personal losses in the context of using SSTs. In many researches on the e-services, perceived risk is a precedent to estimate the consumer behavior in consumer decision-making process. Perceived risk possesses a role as an obstacle to participate in adoption intention (Jacoby and Kaplan, 1972; Featherman and Pavlou, 2003; Luo et al., 2010; Kim et al., 2008; Cheng and Huang, 2013; Thakur and Srivastava, 2014; Martins et al., 2014). The adoption of new technology may let consumers experience the technological risk relating to the security of personal information, etc. Moreover, SSTs is the utilization technology without face-to-face communication, that also increases consumers perception of risk. Previous studied investigated perceived risk as a factor that affects intention to buy (Ha and Stoel, 2009), intention to use (Yoon, 2011), and behavioral intention (Cheng and Chu, 2013; Park and Blenkinsopp, 2009).

Sharing economy might expose consumers to more risks than the traditional transaction. The perceived risk is operationalized as multidimensional construct including financial risks, privacy risks, performance risks, and psychological risks (Zhu



et al., 2017). When the transaction of e-service is completed online, consumers may concern their personal information will be attacked, which is the risk of leaked information. When consumers involving in using transaction, the concern of personal property and performance of the service providers – safety or some compensation for the losses is measured to influence into the decision of adoption ride-hailing service (Zhu et al., 2017; Hwang and Griffiths, 2017).

The dimensions of perceived risk are divided based on the e-service transactions. In online context, the risks are involved financial risk, privacy risks, performance risk, time risk, social risk, psychological risk, and overall risk (Featherman and Pavlou, 2003). In other research of Yang et al. (2015b), the security risk is added in the context of money transfer context. The background of policy also impacts the perceived risk when complementing sharing economy transaction. According to Cheng (2016) and Zhu et al. (2017), in China, the legal risks is also included into the ride-sharing service perceived risk.

The perceived privacy risk is the possible damage or the use of personal information without persuasive reasons (Nyshadham, 2000; Gao et al., 2015). Private information is used for benefits that create the risk toward users, which is the main factors that users consider to hesitate to accept sharing economy or ride-hailing service in particular (Lee et al., 2018). The security risk is defined as the possibility of losing property during service usage or personal injury (Thakur and Srivastava, 2014 and Lee et al., 2016). Performance risk or functional risks is the concern of performance of ride-hailing service including the performance of driver and bike or car are used. The users of e-

service have to take the perceived risk into account carefully (Hawapi et al., 2017; Birinci et al., 2018; Chang and Wang, 2018).

## **2.6 Subjective norm**

Subjective norm is the perceived social pressure to behave in a particular way and the motivation to comply with others' views (Ajzen, 1991; O'Neal, 2007). Subjective norm in Theory of Planned Behavior is the belief about people opinions to agree or disagree of the behavior. Subjective norms can affect the degree of pressure when an individual engages in a behavior.

As Ravis and Sheeran defined (2003), subjective norms are the significant judgement from people who are important to the individual is examined the adoption behavior (e.g. family, friends, colleagues, and others).

Some previous studies measured the relation between subjective norms toward buying behavior. Tarkiainen and Sundqvist (2005) indicated that subjective norms significantly affect the attitude of buying organic food.

## **2.7 Automobile dependency**

Automobile dependency or car dependency is widespread studied in transportation research and policy literature, there are few existing researches in marketing terms. The term "automobile dependency" is understood in different concepts by different scholars (Gorham, 2012, Lucas and Jones, 2009, Mo.Ve. Association, 2008). In this paper, the definition of automobile dependency is the individual pattern or attitude when they consider which kinds of transportation to use for their trips.

Automobile dependency or automobile oriented transportation is defined as the pattern that citizens prefer using the automobile vehicle than other alternatives (Victoria

Transport Policy Institute, 2019). The dependency on motorbike and car make people feel difficult to complete their tasks and activities without using automobile transportation. In other words, a city that assumes motorcycles or cars as the primary vehicles for travels (non-work and work trips included), the automobile dependency is the lifestyle. Hence, there are no real other options for passengers.

According to Farrington et al. (1998), the automobile dependence has two sorts. The conscious dependence and the structural dependence, the first is the individual who depends on the automobiles could consider other kinds of transportation and the latter is the individual who relies on automobiles due to lack of suitable substitutes. The conscious dependence is the behavior of consumers to choose familiar transportation methods to them, while the structural dependence is caused by the contextual factors.

This research considers the automobile dependency as an individual is likely to use automobile to accomplish their activities and they are not able to complete their trip without automobile transportation.

## **2.8 Existing studies about adoption intention towards ride-hailing services**

When ride-hailing services have become popular in developed and developing countries, there are lots of previous researches investigating the adoption intention of ride-hailing services. Ride-hailing services are acknowledged as a new technology, which applied UTAUT model and TAM model to analyze the adoption behavior. Critical factors, such as perceived ease of use, perceived usefulness, subjective norms, behavioral intention, and actual of use are included in most of previous researches. Besides, some studies measured the factors of adoption intention based on the perceived benefits and sacrifices. Moreover, scholars had brought new variables to reflect the

characteristics of study aimed areas as well as improve the basic model, like perceived risk, personal innovativeness, environmental concern, and car ownership.

Following are previous researches proposed factors influencing adoption intention toward ride-hailing services in some countries.

**Table 1. Existing studies about adoption intention toward ride-hailing services**

Researches	Area	Factors
P. T. Giang, P. T. Trang, and V. T. Yen (2017)	Vietnam	Perceived ease of use, perceived usefulness, attitude, subjective norms, perceived behavior control, behavioral intention
Wang, Y., Wang, S., Wang, J., Wei, J., & Wang, C. (2018)	China	Perceived ease of use, perceived usefulness, perceived risk, personal innovativeness, environmental awareness, behavioral intention
Anggi G., Dionisius W. D., Ivan O., Jeanifer G., Sfenrianto S. (2019)	Indonesia	Perceived ease of use, perceived usefulness, perceived risk, personal innovativeness, behavioral intention, actual of use
Marc-Oliver S., Oliver W., Max L., Wiebke W., Marvi J., and Michael H. B. (2019)	Germany	Perceived compatibility, perceived usefulness, perceived ease of use, perceived safety, attitude toward use, subjective norms, behavioral intention to use
Acheampong, R. A., Siiba, A., Okyere, D. K., & Tuffour, J. P. (2020)	Ghana	Factors driving adoption of ride-hailing services and actual use patterns of this new form of mobility: perceived ease of use, perceived benefits (instrumental and hedonic), car ownership and use,

		environmental attitude, technology attitude, perceived safety risks
Ke L. and Xuefen W. (2020)	China	Perceived usefulness, perceived enjoyment, social image, perceived fee, perceived risk, perceived sacrifices, perceived value, subjective norms, policy support, behavioral intention  Some control variables: age, gender, car ownership, usage frequency

## CHAPTER III HYPOTHESIS DEVELOPMENT

Developers employ the technological foundation for the ride-hailing services, they use math algorithms to computerize the input information to create the travel services. Hence, to explain and understand the consumers adoption intention toward the new kind services supported by advanced technology, I apply above theories detailed in literature review to propose following hypothesis.

### 3.1 Perceived benefits and Perceived value

#### 3.1.1 Perceived ease of use and Perceived usefulness (Utilitarian benefits)

As TAM model, the users' acceptance of technology is given an explanation through two attributes: perceived usefulness (PU) and perceived ease of use (PEU) (Davis, 1989). TAM model explains that the adoption of new technology is affected by the perception of its benefits and ease of use. Perceived ease of use is the consumer belief of the effortless when using technology (Davis, 1989). Perceived ease of use refers to consumer belief of their ability of using new technologies.

The perceived usefulness is the consumer belief of the importance of appliance of technology, Davis (1989). The usefulness is the belief of using technology help customers shorten waiting time and reducing cost they have to trade off (Rayle, 2016). Perceived usefulness, in other words, perceived benefits are the extend consumers believe their tasks or activities will be enhanced by applying new technologies. Naiwumbwe (2012) found the impact of perceived ease of use on perceived usefulness in case of the use of smartphone in fund transfer. When users feel the technological services easy to use, they will feel those bring more usefulness (Davis, 2000).

**H1: Perceived Ease of Use has positive impact on Perceived Usefulness**

Perceived ease of use is the customers' perception of effortlessness when they use ride-hailing services. If the barrier of new technology is simplified and overcome, the sacrifice of approaching services will be reduced.

People have to pay their effort to accomplish the tasks or activities. However, effort is a finite resource which is spent based on the importance of the tasks and the involvement of the users (Radner and Rothschild, 1975).

Perceived ease of use of ride-hailing services can be defined as the utilitarian benefits. When the nonusers first time involving in using Grab ride-hailing service, the ability to learn the operation of ride-hailing service application and to use the service with less of effort, which is the "ease" coming from the consciousness of the nonusers. If they feel freeing of difficulties when they adopt the new technology, they are likely to evaluate the ride-hailing service brings them extra benefits, which increases the perceived value toward the service.

An application that is easy to use will be easily accepted due to the more benefits it brings to the users. If using Grab ride-hailing service is paid by less effort, nonusers easily to accept it as a new transportation substitutes. Thus, the hypothesis can be depicted as:

**H2: Perceived Ease of Use has positive impact on Perceived Value of Grab ride-hailing service**

The belief of using a new technology will enhance the performance of individuals is regarded as perceived usefulness. Perceived usefulness is indicated by the advantages when using tech-bike like the convenience, reducing waiting time, saving time for

traveling. It relates to job effectiveness, productivity of the technology to an individual's task.

Perceived usefulness of ride-hailing services can be defined as the utilitarian benefits. The perceived usefulness is revealed as utilitarian benefits of effective communication alternatives in message service research (Kim et al, 2008). Utilitarian effect is the advantages of using SSTs such as saving time and cost in procedure (Heijden, 2004). Consumers use tech-bike to approach the destination in shorter time. Consumers know in advance the information of their choices. In this study, the perceived usefulness which is the advantages which help users save time to achieve their objectives, then the perception of value of the services will be strengthen. The perceived usefulness is involved in the perceived benefits of customers toward ride-hailing services. Yang, Yu, Zo, Choi (2015) analyzing the perceived benefits which contain perceived usefulness have impact on consumers' perceived value of using wearable devices.

### **H3: Perceived Usefulness has positive impact on Perceived Value of Grab ride-hailing service**

#### **3.1.2 Perceived enjoyment and Perceived value (Hedonic benefits)**

Perceived value can be accumulated by both utilitarian and hedonic value. Holbrook (1999) explained extrinsic value as functioning or utilitarian benefits and intrinsic value as the enjoyment. Perceived enjoyment is defined "the extent to which the activity of using the computer system is perceived to be personally enjoyable in its own right" (Davis et al., 1992). The feeling enjoyment or hedonic benefits is the joyfulness of using services, which is the motivation to potential behavior. Hence, this study investigates hedonic benefits in particularly is the enjoyment's influence on perceived value of using



ride-hailing services. Perceived enjoyment is experimented as a benefit that influences the perceived value (Kim et al., 2007). The enjoyment during exploring the innovation adjoin the value to encourage user adopt the technology. According to Park and Chen (2017), adopting innovative IT products are influenced by the effect of joyfulness. Following hypothesis is proposed:

**H4: Perceived Enjoyment has positive impact on Perceived Value of Grab ride-hailing service**

### **3.2 Perceived value and Adoption intention**

Perceived value is a familiar concept in marketing research. Perceived value is the difference between perceived benefits and sacrifice (Dodds et al., 1991). According to Schechter (1984), perceived value is conceptualized by qualitative and quantitative. Customers will evaluate the choices based on what they have to trade to get their needs or wants.

Perceived value is the antecedent of consumer decision making process, which is confirmed in many previous researches. For instance, Kim (2013) confirmed the positive relationship between perceived value and mobile engagement intention in a study of mobile user engagement. The relationship is confirmed in other studies and different fields: blogging (Chen and Lin, 2015), the adoption of location-based services (Yu et.al, 2013). The enjoyment factor included in perceived value also indicate a positive influence on customer's intention to use products (Turel et al, 2010).

This study focuses on the positive impact of perceived benefits on customers' perceived value, which will affect the behavior intention, especially, the behavioral intention of ride-hailing services. Consumers' perception of great value when they use

the technological services instead of tradition services will form the intention to adopt the innovation. Thus, we suppose:

**H5: The Perceived Value will positively affect Adoption Intention toward Grab ride-hailing service**

### **3.3 Perceived risk and Adoption intention**

Perceived risk is defined as the degree of uncertainty about a service of consumers (Dowling and Staelin, 1994). Research of Snoj, Korda, and Mumel (2004) showed that perceived risk including financially, functional risks, technical aspects of risks and social risks.

Consumers experience the uncertainty when they cannot predict the consequences of using a product or service (Cox and Rich, 1964). According Fishbein and Ajzen (1975), consumers are aware of the personal losses in the context of using technology. The adoption of new technology may let consumers experience the technological risk relating to the security of personal information, etc. Moreover, ride-hailing service is the utilization technology firstly without communication, that also increases consumers perception of risk. Previous studied investigated perceived risk as a factor that affects intention to buy (Ha and Stoel 2009), intention to use (Yoon 2011), and behavioral intention (Cheng and Chu 2013; Park and Blenkinsopp 2009).

#### **3.3.1 Privacy risk and Adoption intention**

The Internet-based transaction have to utilize users' information to customize and improve the customer experiences, which might pose the threat to user privacy (Lee et al, 2018). Ride-hailing service is built by the algorithm of user' allocation of transportation and the requirement of transportation. Therefore, all parties who join it

the ride-hailing service like passengers, drivers, and service providers have to reveal their personal information. Especially, passengers who are nonusers – new to the sharing economy – should consider to share their profiles, geolocation data, and bank card information (if they use pay by card instead of cash on delivery). Those kinds of risks related to the willing to adopt the technology of nonusers (Hong, 2017).

The nonusers who live in small or con-cities are familiar with the traditional transportation, such as their own bike or car. If they want to choose other transportations, they easily choose traditional taxis, or motorbike taxis who they get used to with them. Thus, the exposing of information to strangers pose the uncertainty, which reduce the users' perceived value of Grab ride-hailing service. The following hypothesis is proposed:

**H6: Privacy risk has negative impact on Adoption Intention of Grab ride-hailing service**

### 3.3.2 Security risk and Adoption intention

While considering using ride-hailing services, consumers might have the perception of the harm to their property or personal safety, which is mentioned as the security risk in the studies of Thakur and Srivastava (2014) and Lee et al. (2016).

Car-sharing or ride-hailing service without face-to-face communication or previous contact can lead to the risk of property or personal injury. Lee et al. (2018) researched the security risk can decrease the willingness to join in the sharing economy. The fear of consumers before ride-hailing acceptance due to the awareness of security incidents could happen such as robbery, rape, or even murder. Security refer to the perceived risk because the ride-hailing service requires the physical interaction after booking through

a smart device. The drivers have to provide their license to drive a vehicle for services. However, consumers always hesitate the certainty of information of drivers. The occurrence of those incidents has made nonusers less willing to adopting the technology.

In a nutshell, the security risk consisted of property and the personal safety are supposed negatively affect the nonusers' perceived value. The following hypothesis is stated:

**H7: Security risk has negative impact on Adoption Intention of Grab ride-hailing service**

### 3.3.3 Performance risk and Adoption intention

According to Luo et al. (2010), Martins et al. (2014), Yang et al., (2015a), Park and Tussyadiah (2017), perceived performance risk makes strong impact on consumer adoption intention. The users expect the performance based on their personal perception and also based on the advertisement. Consumers consider whether ride-hailing service can deliver what user expected or not.

The drivers are not totally professional drivers who are familiar with all the routes or have lots of experiences. Hence, their performance is not assured as the well-trained drivers. Passengers might not experience good trip with less trained drivers. Therefore, they will consider when making decision using Grab ride-hailing service.

The performance of the transportation used to give a ride for passengers is also reviewed as perceived risk. Drivers can register their own bike or car to use for provider Grab ride-hailing service. Considering their bike or car after long time using cannot

provide comfortable trip for users, passengers will hesitate to adopting ride-hailing service when they are uncertainty of the performance of the bike or car used.

I supposed the hypothesis:

**H8: Performance risk has negative impact on Adoption Intention of Grab ride-hailing service**

### 3.3.4 The moderating effect of Perceived risk

The findings from Chiu et al. (2014) have shown the relationship between perceived value and adoption intention may be adjusted by the influence of perceived risk in online shopping context. Other studies also indicated the moderating role of perceived risk in the purchase of environment-friendly products (Lai-Ming Tam, 2012; Chang and Tseng, 2013; Chiu et al., 2014; Kwok et al., 2015; Wu et al., 2015). When people perceive the positive value from the adopting new technology, they could consider the risk factors that involved in the decision-making are not strong as the perceived value they receive. Hence, the perceived risk might increase the influence of value perception toward adoption intention of Grab ride-hailing service. Following this, we proposed the moderator effect of perceived risk:

**H9a: Privacy risk positively moderates the relationship between perceived value and adoption intention of Grab ride-hailing service.**

**H9b: Security risk positively moderates the relationship between perceived value and adoption intention of Grab ride-hailing service.**

**H9c: Performance risk positively moderates the relationship between perceived value and adoption intention of Grab ride-hailing service.**

### **3.4 Subjective norms**

Subjective norm was defined in the TRA by Ajzen and Fishbein (1977). Venkatesh and Davis (2000) extended the Technology Acceptance Model by including subjective norm to explain users' behavioral intention. Consumers as human being is affected by others, for instance, their families, co-workers, friends.

People take others' recommendation due to the advantages of those suggestion or they perceive the act as the way they should act to appropriate within their social network. In this study, subjective norms affect the perceived value of users when they use technology. They can be considered belong to the "modern" social network when they use technology. It causes the immediately behavioral intention without the mediator perceived value. Using a new technology can be seen more prestige in their social network or have higher social status (Rogers, 1995). The finding of Sarker and Well (2003) explained the perception of using mobile technology since mobile technology is a novel thing, hence using it helps to upgrade themselves.

**H10: Subjective norm has positive impact on Perceived Value of Grab ride-hailing service**

**H11: Subjective norm has positive impact on Adoption Intention toward Grab ride-hailing service**

### **3.5 Automobile dependency**

A car dependent person is whose life demands only car and who cannot imagine their trip using any other transportations (Ray Brindle, 2003). Zang (2006) and Turcotte (2008) described that automobile dependence is using automobile is the only choice as the available travel mode.

Other researchers could focus on the high usage of automobile comparing with other transportation alternatives. When people favor to use automobile because of their choice or there are non-existent options, this is the dependence on automobile usage.

The motorcycle and car using play an undeniable role in people's lives. Especially in small or non-cities, there are not various kinds of transportation can be alternatives for motorcycles or cars. Therefore, the car dependency in small cities and non-cities is expected higher than other places. The automobile dependence become lifestyle of citizens where they cannot fulfill their tasks without motorcycles or cars.

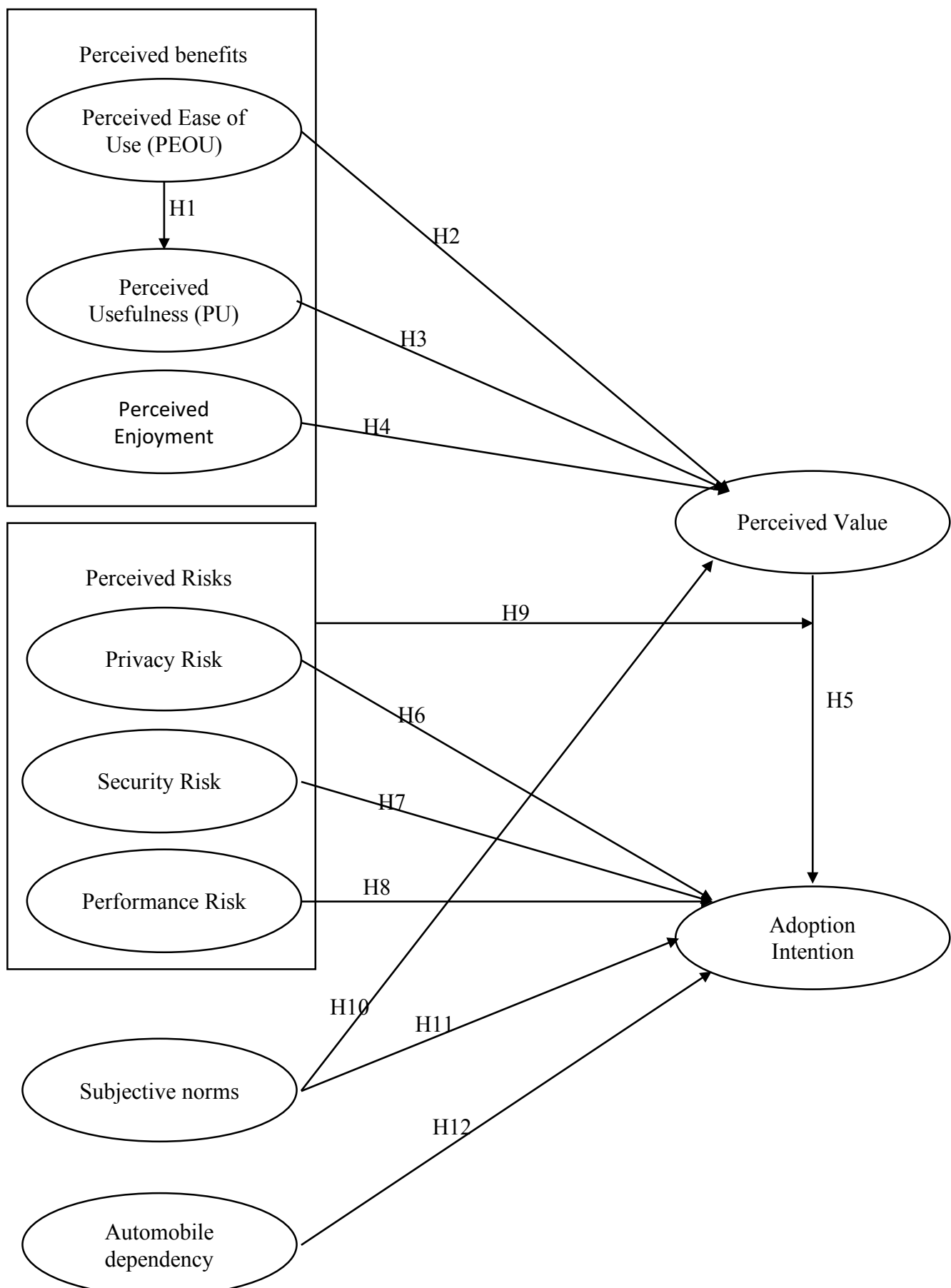
In small or non-cities, passengers who do not involve in the public transport or there are no other reasonable alternatives can choose ride-hailing services which offer others transportation way using motorbike or cars, this is suitable to the automobile dependency trend in small or non-cities in Vietnam. Therefore, automobile dependency influences the adoption intention of ride-hailing services in general or Grab ride-hailing service in particular. Nonusers who live in small and no-cities is expected to have automobile dependency would have higher adoption intention toward ride-hailing service. Following the above explanation, we supposed that:

**H12: Automobile dependency has positive impact on Adoption Intention toward Grab ride-hailing service**

Figure 2 illustrates the research model for the study of factors that influence the adoption intention of Grab ride-hailing service in Vietnam. the perceived benefits from the ratio creating perceived value are entered this research model. Theory of Planned Behavior (TPB) and Technology Acceptance Model (TAM) are applied to explore the perceived benefits of Grab ride-hailing service. Variables are chosen such as perceived

usefulness, perceived ease of use, subjective norms and adoption intention. In addition, Perceived risk are classified into three categories: privacy risk, security risk, and performance risk to figure out the obstacles that could lessen the adoption intention of nonusers of Grab ride-hailing service. I added the new variable automobile dependency to add the characteristics of Vietnamese citizens and the moderating effect of perceived risk on the relationship of perceived value and adoption intention.





**Figure 2. Research model**

## **CHAPTER IV METHODOLOGY**

### **4.1 Research method**

The questions are designed using the five-point Likert scale with 5=strongly agree and 1=strongly disagree to measure the factors influencing the adoption intention of Vietnamese citizens toward Grab ride-hailing services. SPSS and AMOS 25 were used to analyze the data. Gathered data was resolved by Cronbach's alpha and exploratory factor analysis (EFA) to test the reliability of collected data and look over the pattern of the measured items of each factor. AMOS was utilized to discover the directly path between factors and their relations. SPSS multi regression was applied to address the moderating effect of perceived risk to the relation of perceived value and adoption intention. According other scholars Baron & Kenny (198), Cramer & Ebrary (2003), the moderating effect of variables were investigated by using SPSS method.

### **4.2 Definition and measurement items of the construct**

#### **4.2.1 Perceived ease of use (Utilitarian benefits)**

Perceived ease of use regards to the effortless when using the new technology. Therefore, the perceived ease of use in this study is measured by the "ease" that is based on the consciousness of user when they firstly involve into using new technology. In other words, customers perception while adopting Grab ride-hailing service without much effort.

The measurement items of perceived usefulness were modified from the study of Nguyen, Su, Tran, Le, & Johnson (2020). Those are: (PEU1) Interaction with ride-hailing service does not require a lot of mental effort, (PEU2) Ride-hailing service is flexible to interact with, (PEU3) Learning to use ride-hailing service is easy for me.

#### 4.2.2 Perceived usefulness (Utilitarian benefits)

Perceived usefulness is the perception of person toward an innovation whether the new technology would bring them the usefulness to improve their performance (Davis, 2013). The usefulness is exposed by less consuming time, effectiveness, and support the users to achieve their tasks.

Grab ride-hailing service would enhance the performance of users' trips. Four items for measuring perceived usefulness were adapted from Davis, Bagozzi, and Warshaw (1989), Venkatesh and Bala (2008), Lu & Wang et al., (2020). Those are: (PU1) Ride-hailing service is very useful to my travel in general, (PU2) Ride-hailing service is convenient to my travel, (PU3) Ride-hailing service can improve the quality of my travel, (PU4) Ride-hailing service can save my time.

#### 4.2.3 Perceived enjoyment (Hedonic benefits)

The hedonic benefits focus on the pleasant experience users would possess when using Grab ride-hailing service. The hedonic benefits – perceived enjoyment was measured using three items from Kim, Chan, and Gupta (2007), Venkatesh and Bala (2008), Lu & Wang et al. (2020). Those 3 measurement items are: (PE1) The process of using ride hailing service is pleasant, (PE2) Using ride hailing service is enjoyable, (PE3) Using ride hailing service does not bore me.

#### 4.2.4 Privacy risk

The fear of users' personal information would be collected for misuse or could be harmful to users. The ride-hailing service requires to gather the information such as basic profiles, address or location to provide the drivers exactly the pick-up and drop-off places when they start the trip.

The measurement items of privacy risk were adapted from Featherman and Pavlou (2003), Malhotra et al. (2004) and Lee et al. (2016). Those are: (PR1) I am afraid that ride-hailing services collect too much my personal information, (PR2) I am afraid that ride-hailing services disclose my personal information, (PR3) I am afraid that sharing my personal information would lead to many uncertainties, (PR4) It would be a potential threat to my privacy disclosing personal information.

#### 4.2.5 Security risk

The security risk includes the uncertainties of physical harm or property. The users and drivers do not communicate face-to-face through the application, they are almost strangers to each other. When they start the trip, they associate in direct communication and physical connection, the fear of property safety or personal safety is rational. Consumers hesitate to using the service due to the negative circumstances happened during the trip with strangers.

There are 4 items of security risk which were used in this research, which are adopted from Featherman and Pavlou (2003) and Lee et al. (2016): (SR1) I am afraid that ride-hailing would be insecure, (SR2) I am afraid that ride-hailing would be unsafe, (SR3) I am afraid that ride-hailing would create risk of physical harms, (SR4) I am afraid that ride-hailing would not ensure my property.

#### 4.2.6 Performance risk

The performance of the trip might be different or lower than users' expectation. The drivers are not thoroughly well trained with great experiences. That, in turn, the users fear of the performance of their trip. Moreover, they are afraid of the unreached expectation performance would cause problems to their trip.

Performance risk measurement items were drawn from Featherman and Pavlou (2003) and Yang et al. (2015a): (PFR1) I am afraid the performance of trip not as I expect, (PFR2) I am afraid that the service would not perform well, (PFR3) I am afraid that the service might cause problems to my trip.

#### 4.2.7 Subjective norms

Subjective norms are the belief of users whether others would approve or disapproved ones' behavior. In other words, subjective norms are the perception of social pressure to behave and the motivation to cope with others' opinions, especially the views from important people to the object (Ajzen, 1991, Ravis and Sheeran, 2003, O'Neal, 2007).

There are initially 5 measurement items adapted from Venkatesh and Bala (2008), Yang, Yu, Zo, and Choi (2016), and Lu & Wang et al. (2020): (SN1) My family members/friends/colleagues recommend me to use ride-hailing service, (SN2) My social network has support me use ride-hailing service, (SN3) Using ride-hailing service shows the modern lifestyle, (SN4) Using ride-hailing service makes me feel special.

#### 4.2.8 Automobile dependency

Automobile dependency could be interpreted as the dependence on the automobile (motorcycles or cars) of citizens who are living in the small or non-cities. Users mostly use automobiles for their trips because they enjoy the trip by automobile or there are no other transportation alternatives. They are struggle when using others substitutes instead of automobiles. Their lifestyle relies on the automobile.

The measurement items were adapted from Acheampong, Siiba, Okyere, & Tuffour (2020) and added some new measurement items: (AD1) I have no appropriate

alternatives to driving, (AD2) It is impossible for me to use public transportation, (AD3) I prefer use automobile to other transportation.

#### 4.2.9 Perceived value

According to Holbrook (1999), Woodruff (1997), Zeithaml (1988), perceived value is the valuation of consumer to all aspects of product/service by the ratio between the benefits and the costs they receive from using that product/service.

The measurement scale was developed based on some existing measurements of perceived value from Zeithaml (1988), Lu & Wang et al. (2020): (PV1) Using ride-hailing service is beneficial compare with my effort, (PV2) Using ride-hailing service is worth to me, (PV3) Using ride-hailing service gives me good value.

#### 4.2.10 Adoption intention

The last variable is the customer behavior – the adoption intention of Grab ride-hailing service. The adoption intention of new technology is the willingness to use or buy a product/service in a specific situation (Lu et al., 2014). The adoption intention is also considered the willingness to suggest others to experience the product/service.

Measurement scales of adoption intention were modified from the research of Lu & Wang et al. (2020). Those are: (AI1) I intend to use ride-hailing services, (AI2) I would like to use ride-hailing services, (AI3) I will recommend others to use ride-hailing services, (AI4) Compared with traditional travel service, (AI5) I prefer ride-hailing services.

### 4.3 Data collection

The research was conducted by online questionnaires created by Google form to gather data during nearly one month in the spring 2021. At the beginning of the survey,

a brief description of Grab ride-hailing service in Vietnam which included the foundation information of Grab and step-by-step to register and use the service via mobile devices. Following that is the main part of the survey. The factors that influence the adoption intention of Vietnamese citizens toward Grab ride-hailing service. The questions in this part of the research are structured to measure by using the five-point Likert scale with 5=strongly agree and 1=strongly disagree. After finishing the compulsory questions to examine the construct that we supposed above, the demographic questions are displayed.

The survey received 255 respondents from 18-45 years old both males and females throughout Vietnam (both big cities, small cities, and non-cities). Almost of them are employees (at company, school, public office, etc). However, only 207 questionnaires are usable and will be used for further analysis.

#### **4.4 Description of the sample**

The demographic profiles including gender, age, occupation, location, monthly income, marriage status, and vehicles are presented in Table 2. In term of gender, the proportion of female is almost twice as much as male (61.5% vs. 38.5%). Over 50% of respondents were people between the age of 30 and 45. Most respondents are employees, which is account for 53.1%. The majority of respondents are who have income from 5.000.000vnd (218\$) to 10.000.000vnd (434), they account for about 55.9% in total. Only 15.4% of the population of respondents come from big cities such as Hanoi, Hochiminh, .... The rest of respondents live in small or non-cities (84.6%). Due to the familiar to technology, especially Grab ride-hailing services in big cities, the primary

objectives of this research to study the adoption intention of users in small and non-cities. Therefore, the demographic is suitable to conduct the factor analysis.

**Table 2. Description of Sample**

<b>Group</b>		<b>Sample (N=207)</b>	
		<b>Frequency</b>	<b>Percentage (%)</b>
Gender	Female	127	61.5%
	Male	80	38.5%
Age	18-30	51	24.5%
	30-45	109	52.4%
	Above 45	47	23.1%
Occupation	Students	23	11.2%
	Employees	110	53.1%
	Own business	20	9.8%
	Others	54	25.9%
Location	Big cities	32	15.4%
	Small or non-cities	175	84.6%
Marriage status	Single	54	25.9%
	Married	153	74.1%
Income	Under 5M VND	38	18.2%
	5M-10M VND	116	55.9%
	10M-20M VND	41	19.6%
	Above 20M VND	12	6.3%
Automobile owner	Yes	190	91.6%



	No	17	8.4%
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## CHAPTER V HYPOTHESIS TESTING

### 5.1 Reliability and validity of measurement items

I conduct testing of factors by using Cronbach's alpha coefficients.

In terms of empirical research, observed variables with item-total correlation less than 0.3 will be disqualified and scale selection criteria when Cronbach's Alpha is 0.6 or higher (Nunnally and Burnstein, 1994; Nguyen Khanh Duy et al., 2008).

Cronbach's Alpha coefficient  $> 0.6$ , so the scale meets the standard. At the same time, the observed variables have high variable-total correlation coefficients greater than 0.3, so the variables meet the requirements for reliability (except PR4, SR4, SN4, AI2 were deleted). All variables are good reliability. Therefore, the result of the questionnaires is suitable for the next step data analysis.

According to Garson (2003), the index Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) must be greater than 0.5 and  $\text{sig} < 0.05$  to show the factor analysis is appropriate. After running KMO and Bartlett's Test, the KMO = .805 is greater than 0.5 and  $\text{sig} = .000$  less than 0.05. Therefore, the data is appropriate to be utilized (Table 3).

**Table 3. KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.805
Bartlett's Test of Sphericity	Approx. Chi-Square	5074.64
	df	435
	Sig.	.000

Factor analysis was performed according to principal components with Varimax rotation. The results showed that 30 observed variables were grouped into 10 groups (PR4, SR4, SN4, AI2 were deleted). The Initial Eigenvalues of 10 factors are  $\geq 1$ .

Hence, those are included in the model. Value of cumulative variance extracted = 83.768% > 50%, which prove the suitability of model EFA (Table 4). Table 4 also shows 10 factors after running factor analysis.

**Table 4. EFA analysis**

	Component										Eigen value	Cronbach Alpha	% Variance	% Cumulative
	PU	PR	SR	AI	PFR	PE	PV	SN	PEU	AD				
PU2	.879	-.015	.011	.100	-.036	.000	.081	.115	.085	-.019	7.259	0.881	24.196	24.196
PU4	.855	.043	.008	.084	-.090	.166	.076	.100	.133	-.025				
PU3	.835	-.038	.029	-.019	-.196	.122	.088	.055	.110	.081				
PU1	.813	.013	-.100	.038	.074	-.070	.184	-.030	-.145	-.100				
PR2	.018	.945	.183	-.029	.146	.029	.074	.041	.007	.074	5.009	0.974	16.695	40.892
PR3	-.014	.940	.177	-.041	.138	.013	.069	.023	.029	.040				
PR1	.001	.931	.179	-.101	.145	-.019	.072	.038	.048	.066				
SR2	.006	.214	.919	-.093	.142	-.007	.027	.013	.010	.046	2.800	0.940	9.334	50.226
SR3	-.018	.144	.893	-.020	.222	-.023	.008	.067	-.030	-.050				
SR1	-.033	.187	.890	-.145	.200	.013	-.018	-.002	-.004	.024				
AI2	.065	-.097	-.125	.872	-.104	.242	.167	.155	.145	.081	1.977	0.951	6.591	56.817
AI1	.099	-.083	-.047	.864	-.143	.202	.135	.154	.114	.118				
AI3	.063	-.024	-.134	.863	-.066	.184	.185	.198	.124	.114				
PFR2	-.090	.165	.148	-.097	.896	-.001	-.081	-.015	-.052	.078	1.822	0.917	6.075	62.891
PFR3	-.082	.121	.199	-.071	.871	.036	.013	-.015	.012	.050				
PFR1	-.060	.140	.213	-.098	.868	-.043	-.128	.004	-.031	.096				
PE3	.138	.003	-.023	.164	.006	.855	.074	.095	.210	.122	1.656	0.876	5.521	68.413
PE2	.109	-.066	.019	.251	.024	.821	.151	.191	.144	.024				
PE1	-.036	.078	-.008	.181	-.018	.754	.206	.219	.151	-.044				
PV3	.112	.094	-.045	.107	-.054	.145	.855	.219	.149	.085	1.306	0.917	4.353	72.766
PV1	.187	.076	.025	.192	-.086	.119	.850	.195	-.034	.044				
PV2	.179	.069	.043	.171	-.072	.162	.831	.243	.048	.104				
SN1	.111	.037	.003	.143	.027	.084	.196	.853	.094	.086	1.204	0.862	4.014	76.780
SN2	.033	.004	-.017	.204	-.029	.171	.192	.833	.124	.119				
SN3	.112	.071	.115	.125	-.028	.264	.259	.742	.060	.075				
PEU3	.065	-.019	.077	.209	.084	-.025	.076	.175	.824	-.032	1.076	0.721	3.585	80.366
PEU2	.052	-.023	.044	.072	-.095	.366	.130	.029	.748	.094				
PEU1	.075	.149	-.175	.064	-.086	.312	-.052	.064	.660	.049				
AD1	-.103	.057	-.015	.092	.042	.200	.118	.098	-.032	.850	1.021	0.687	3.402	83.768
AD3	.040	.112	.033	.161	.178	-.108	.071	.141	.118	.808				

## 5.2 Structural Equations Modeling (SEM)

AMOS was used to measure Structural Equations Modeling (SEM) for variables.

The suitability of model is measured by the matrix between variables resulting from the proposed model. Structural Equation Modeling (SEM) is quantitative research technique that can also incorporates qualitative methods (Gigi Devault, 2018). SEM uses a series of measures to transmit how research hypotheses interpret the gathered data. The data would form the matrix of covariance between the measurement items. Therefore, SEM is used to show the path relationships between variables.

Firstly, the researcher measured Model Fit Indices.

According to Hu & Bentler (1999), a model is regarded as acceptable if:

CMIN/df  $\leq 3$  is good, CMIN/df  $\leq 5$  is acceptable

CFI  $\geq .90$  is good, CFI  $\geq .95$  is very good, and CFI  $\geq .80$  is acceptable

GFI  $\geq .90$  is good, GFI  $\geq .95$  is very good

RMSEA  $\leq .06$  is good, RMSEA  $\leq .08$  is acceptable

Table 5 below shows model fit indices that illustrate that the model is acceptable.

**Table 5. Model Fit**

CMIN/DF	GFI	TLI	CFI	RMSEA
2.060	.800	.906	.916	.072

SEM includes 10 variables: perceived ease of use (PEU), perceived usefulness (PU), perceived enjoyment (PE), privacy risk (PR), security risk (SR), performance risk (PFR), subjective norms (SN), automobile dependency (AD), perceived value (PV), and adoption intention (AI).

Table 6 shows P-value of coefficients between SN and PV; SN and AI have P-value = \*\*\*<.05. Therefore; SN significantly affects to PV, SN significantly effects on AI. The variable PU significant positively affect to PV (P-value = .001). The variable, AD, significantly impacts on AI with P-value = .024. PV also significant affect AI (P-value = .005).

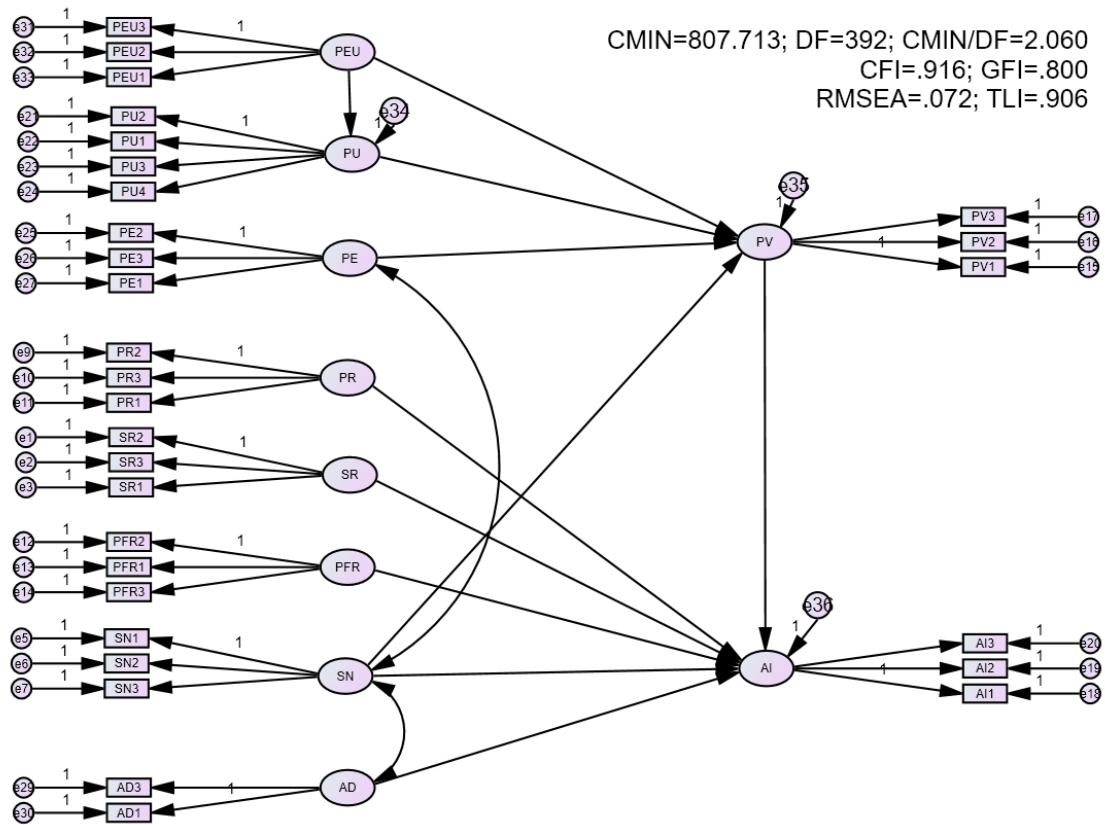
The other variables, PR, SR, PFR, significant negatively influence on AI (P-value of PR, SR, PFR are .038, .005, .042 respectively).

Nevertheless, PEU, PE not significantly impact on PV (P-value=.947, .078 in respectively).

Thus, from SEM analysis, we could approve H1, H3, H5, H6, H7, H8, and H10. Moreover, we could reject H2, H4.

**Table 6. Weights of paths**

			Estimate	S.E.	C.R.	P
PU	<---	PEU	.361	.124	2.906	.004
PV	<---	PEU	.008	.115	.066	.947
PV	<---	PU	.245	.075	3.268	.001
PV	<---	PE	.128	.073	1.760	.078
PV	<---	SN	.574	.097	5.900	***
AI	<---	PR	-.074	.036	-2.071	.038
AI	<---	SR	-.111	.040	-2.796	.005
AI	<---	PFR	-.081	.040	-2.036	.042
AI	<---	SN	.395	.105	3.756	***
AI	<---	AD	.191	.085	2.254	.024
AI	<---	PV	.232	.082	2.836	.005



**Figure 3. SEM**

### 5.3 Moderating effect of Privacy Risk

According to Cohen, West & Aiken (2003), the moderating effect of moderating variables on the relationship between independent and dependent variable are investigated by hierarchical multiple regression. The independent and dependent variables are entered the first model. Next, the moderator would be added into the second model. Finally, the interaction variable is entered the third model due to the moderating effect is explained by the interaction (Baron & Kenny, 1986). Therefore, the moderating effect of each perceived risk was analyzed by SPSS Hierarchical Method and Mean Centering technique in SPSS.

Firstly, the moderating effect of privacy risk is illustrated in Table 7.

The proposed model equation:  $Y = \beta_0 + \beta_1 * X_1 + \beta_2 * X_2 + \beta_3 X_1 * X_2 + \varepsilon$

**Table 7. Moderating effect of Privacy Risk**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.440	.233		10.480	.000
PV	.407	.062	.417	6.574	.000
2 (Constant)	2.719	.246		11.051	.000
PV	.434	.061	.445	7.075	.000
PR	-.122	.040	-.191	-3.040	.003
3 (Constant)	2.629	.242		10.879	.000
PV	.478	.061	.489	7.789	.000
PR	-.151	.040	-.237	-3.761	.000
C.PR.PV	.164	.049	.210	3.325	.001

Dependent Variable: AI

The proposed model is:

$$Y = \beta_0 + \beta_1 PV + \beta_2 PR + \beta_3 PV * PR + \varepsilon$$

The estimated model equation:

$$Y = 2.629 + 0.489 * PV - 0.237 * PR + 0.210 * PV * PR + \varepsilon$$

Where: Y: AI; PV: Mean of PV1, PV2; PR: Mean of PR1, PR2, PR3, and PR4

PV\*PR:C.PR.PV;  $\varepsilon$  : random error

From table 7, Sig. of C.PR.PV (PRxPV) is  $0.001 < 0.05$ . It means C.PR.PV variable is moderating variable; the moderating effect is positive to the relationship of perceived value and adopting intention, not negatively as the proposed hypothesis. Therefore, Hypothesis 9a is supported. The privacy risk would strengthen the relationship of perceived value and adoption. The non-users who perceive value of ride-hailing service vehemently would ignore their perceived privacy risk.

#### 5.4 Moderating effect of Security Risk

The proposed model equation:  $Y = \beta_0 + \beta_1 * X_1 + \beta_2 * X_2 + \beta_3 X_1 * X_2 + \varepsilon$

**Table 8. Moderating effect of Security Risk**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.440	.233		10.480	.000
PV	.407	.062	.417	6.574	.000
2 (Constant)	2.912	.263		11.053	.000
PV	.408	.060	.418	6.765	.000
SR	-.150	.043	-.217	-3.515	.001
3 (Constant)	2.849	.261		10.911	.000
PV	.429	.060	.440	7.148	.000
SR	-.155	.042	-.224	-3.675	.000
C.SR.PV	.144	.056	.159	2.575	.011

Dependent Variable: AI

The proposed model is:

$$Y = \beta_0 + \beta_1 PV + \beta_2 SR + \beta_3 PV * SR + \varepsilon$$

The estimated model equation:

$$Y = 2.849 + 0.440 * PV - 0.224 * SR + 0.159 * PV * SR + \varepsilon$$

Where: Y: AI; PV: Mean of PV1, PV2; SR: Mean of SR1, SR2, SR3, and SR4

PV\*SR:C.SR.PV;  $\varepsilon$  : random error

From table 8, Sig. of C.SR.PV (SRxPV) is  $0.011 < 0.05$ . It means C.SR.PV variable is moderating variable. Similar to the privacy risk, the moderating effect is positive to the relationship of perceived value and adopting intention, which did support the Hypothesis 9b.



## 5.5 Moderating effect of Performance Risk

The proposed model equation:  $Y = \beta_0 + \beta_1 * X_1 + \beta_2 * X_2 + \beta_3 X_1 * X_2 + \varepsilon$

**Table 9. Moderating effect of Performance Risk**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.440	.233		10.480	.000
PV	.407	.062	.417	6.574	.000
2 (Constant)	2.837	.270		10.495	.000
PV	.382	.062	.392	6.199	.000
PFR	-.120	.043	-.175	-2.770	.006
3 (Constant)	2.830	.270		10.467	.000
PV	.382	.062	.392	6.205	.000
PFR	-.115	.044	-.168	-2.640	.009
C.PFR.PV	.057	.055	.065	1.036	.301

Dependent Variable: AI

From table 11, Sig. of C.PFR.PV (PFRxPV) is  $0.301 > 0.05$ . It means C.CFR.PV variable is NOT a moderating variable. The performance risk would not moderate the relationship of perceived value and adoption intention. Performance risk would negative affect directly to the adopting intention. Nevertheless, high perceived performance risk would not diminish the effect of perceived value on adoption intention. Therefore, Hypothesis 9c was rejected.

## 5.6 Result

There are 12 hypotheses are analyzed, 9 of 12 hypotheses were approved completely. However, there are a hypothesis was approved partially. While PR and SR can moderate relationship between PV and AI positively, PFR cannot moderate it. There is a significant path between PEO and PU. There are significant paths between PU and PV. There are significant paths between PR, SR, PFR, and AI and a significant path between

PV and AI. The path between SN and PV or AI also were accepted. There is a significant path between AD and AI. There are non-significant paths among PEU, PE, and PV. The following table indicate these results.

**Table 10. Result of hypothesis**

<b>Hypothesis</b>	<b>Result</b>	<b>P-value</b>
H1. PEU → PU	Accepted	.004
H2. PEU → PV	Rejected	.947
H3. PU → PV	Accepted	.001
H4. PE → PV	Rejected	.078
H5. PV → AI	Accepted	.005
H6. PR → AI	Accepted	.038
H7. SR → AI	Accepted	.005
H8. PFR → AI	Accepted	.042
H9a. The moderating effect of PR	Accepted	.001
H9b. The moderating effect of SR	Accepted	.011
H9c. The moderating effect of PFR	Rejected	.301
H10. SN → PV	Accepted	***
H11. SN → AI	Accepted	***
H12. AD → AI	Accepted	.024

**Note:** \*\*\*: significant

Perceived ease of use and perceived enjoyment are insignificant affect perceived value. Because of the characteristics of respondents who are mostly from 30 to 45 years old, they might perceive the difficult when using the application. In addition, users

perceive performance risk without the relevant with the effect of perceived value on adoption intention. Users consider the performance risk affecting the adoption intention directly, not strengthen or weaken the relationship between the perceived value and adoption intention.

## CHAPTER VI CONCLUSION

### 6.1 Summary and discussion

This research had analyzed the factors that could influence the adoption intention of users toward Grab ride-hailing service. The factors supposed are perceived ease of use, perceived usefulness, perceived enjoyment, perceived value, subjective norms, automobile dependency, and adoption intention. The theory of technology acceptance, perceived value, and perceived risk were applied to propose hypotheses and construct model. This research tested the directly paths among variables and also the moderating effect of perceived risk to the relation between perceived value and adoption intention.

The results illustrate the effect of perceived ease of use on perceived usefulness is identical with the model of technology acceptance or TAM model (Davis, 1989; Samaradiwakara & Gunawardena, 2014). The perceived ease of use has the positive effect on the perceived usefulness. When users feel free of effort, they would attain more usefulness from the ride-hailing services. The perceived usefulness affects significantly to perceived value. Users perceive the benefits of ride-hailing services would increase their perception of value to the service.

The perceived risk in this study includes privacy risk, security risk, and performance risk. All sorts of perceived risk influence vehemently the adoption intention of users toward Grab ride-hailing service. Firstly, the expected respondents are mostly from small and non-cities, they are not familiar with technology in general and ride-hailing services in particularly. Therefore, they have perception about risk which might be supposed when using ride-hailing service. People who are utilizing the traditional

transportation might believe that the new technological service would bring them uncertainty about personal information, safety, and performance during their trip.

Subjective norms directly affect the perceived value and the adoption intention significantly. The users are affected by others who are important to them. People consider others suggestion about new lifestyle with using the technological invention.

Automobile dependency also impact positively on the adoption intention of Grab ride-hailing service. Vietnamese people rely strongly on the motorbikes or cars as transportation for daily life. Especially, in small or non-cities, there are not many alternatives for transportation. Thus, they could choose ride-hailing service which also provide a trip by motorcycles or cars. As the result, the automobile dependency affects the adoption intention of Grab ride-hailing service.

Nevertheless, perceived ease of use, and perceived enjoyment not significantly affect customers' perceived value. The respondents whose age averagely from 30 to 45 years old, they might feel difficult when first time approach the technological invention. It is also explanation to insignificant relationship between perceived ease of use and perceived value. Citizens who from small or non-cities have other traditional methods to acquire taxis or motorbike taxis by calling to some centers for booking vehicles. Hence, they might feel difficult with Grab. The booking service are carried out via mobile application which respondents are afraid of wrong bookings. Perceived enjoyment also insignificantly affects perceived value. They could not imagine whether the trip would be enjoyable or booking a trip via application would be exciting or not.

The uncertainty about the personal information and physical attack will impact their intention of using the ride-hailing service. In spite of that, the moderating effect of

performance risk are not significant. If people perceive the value of the service, they will use it, regardless of the uncertainty. People could minimize the risk to adopt the new technology if they consider the significant value offering to them.

## **6.2 Implication**

### **6.2.1 Theoretical implications**

First of all, the research confirmed the perceived value significant affects the adoption intention. Nonusers consider the value they could conscious before the adoption intention of new technology. The usefulness of new technology regarded as the perceived benefit is the crucial element impacts the perceived value. Subjective norms influence strongly to the perceived value as well as the adoption intention of ride-hailing services.

Secondly, the research considered perceived risks that negative affect the adoption intention. The perceived risk includes privacy risk, security risk, and performance risk, which are analyzed in this study to provide multi aspects of perceived risk when considering its effect to the adoption intention. This reflects the characteristics of Vietnamese citizens, especially in small or non-cities. They are not familiar with those ride-hailing services. Therefore, they would figure out the embedded risks could affect their experiences. Hence, the perceived risks lessen the adoption intention of new technology of nonusers.

The study tested the moderating effect of perceived risks on the relationship between the perceived value and adoption intention. The privacy risk and security risk positively moderate the relationship. Therefore, the perceived value vehemently impacts the adoption intention regardless of some perceived risks. On the other hand, performance

risk did not show the impact on the effect of perceived value to adoption intention. Nonusers consider separately perceived value and performance risk when they approach the technological services.

The new variable automobile dependency was also added to be able to describe the lifestyle characteristics. It can be considered in developing countries' small cities where lack of alternatives and the citizens depend on automobile for transportation. Nonusers who have the dependence on motorbikes or cars would appreciate the new ride-hailing services using automobile. Automobile dependency are conducted inquiry into the analyze of transportation solution for modern lifestyle in developing countries as Vietnam.

#### 6.2.2 Managerial implication

From the practical perspective, the study investigated the adoption intention of non-users from small and non-cities in Vietnam. The findings from this study can propose several implications for the managers of ride-hailing services when they create the relevant marketing strategies to expand the services in Vietnam small and non-cities. Firstly, three sources of perceived risks might discourage the adoption intention of new technological services. In this regard, marketing managers should consider the perceived risks of non-users when they have never approached the new method of transportation service via mobile application. The announcement of collected information, features that ensure the safety of the trip should be published and acknowledged. Thus, people could be more believable about the application and the services. They should control the performance or any circumstances that could happen to customers to convince them to overcome the risk perception.

Secondly, the concentration on marketing the innovation features and benefits on different medias could encourage consumers' perception of benefits, which would result in greater perceived value to using ride-hailing service. Because, nonusers, who still counter the perceived risks which discourage the adoption intention. Therefore, effective communication campaigns should be developed to strengthen the usefulness of ride-hailing services, such as improving the efficiency of the trip or saving time and money of users. Also, transportation alternatives solution or lifestyle issues should be promoted on mass media (TV, advertisement) and social media (Facebook, Zalo) to increase nonusers conscious about the ride-hailing services.

Thirdly, the mobile application also an obstacle to people who are not familiar to technology. Hence, the research and development department should improve the method to approaching the services. Providing more attractive displays and the well-defined guideline which could be acceptable effortlessly by non-users. It is vital to make improve the ease of use of new technology services, especially regarding to ride-hailing services via mobile application, the ease of use could impact the perception of usefulness.

Finally, the research findings come up with useful insights of characteristics of non-users, which supply the marketing managers to better understanding the factors of adoption intention of Grab ride-hailing service. With the market as small and non-cities which differ with big cities, the non-users are less sensitive with technology or they are afraid of using new service due to the potential risks. This knowledge helps to design the appropriate strategies to encounter the non-users' needs. For example, Grab should ensure the benefits and recovery for any problems to gain non-users' evaluation of



value. Companies who offer the service should have excellent service recovery which might encourage them to use the new service.

### **6.3 Limitation and research directions in the future**

The study also has some limitations. The survey is mostly conducted through author's friends and family members' friends in author's hometown, not all cities in Vietnam. Therefore, the research should collect information from other cities throughout Vietnam to achieve the data set more representative of the entire society. There are other types of risk should be investigated to better understanding the obstacles of technological service providers. This research focused on who never use the service and not directly use the application to get the service to analyze the adoption intention. Thus, there might be the influential difference between people who never use and the ones who already use the service through other's booking for them. The expectation and perception would be differed by experiences of the service. The future researches should consider two types of respondents to conduct different survey for them to get the perspectives from both.

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## QUESTIONNAIRES

### A. QUESTIONS FOR ANALYZING THE CONSTRUCT

Each question is measured by 5 Likert scale: (1). Strongly disagree; (2). Disagree, (3). Neutral, (4). Agree, (5). Strongly agree. The following are measurement items of each variable.

#### **Variable 1: Perceived ease of use**

1. Interaction with ride hailing service does not require a lot of mental effort
2. Ride hailing service is flexible to interact with
3. Learning to use ride hailing service is easy for me

#### **Variable 2: Perceived usefulness**

1. Ride hailing service is very useful to my travel in general
2. Ride hailing service is convenient to my travel
3. Ride hailing service can improve the quality of my travel
4. Ride hailing service can save my time

#### **Variable 3: Perceived enjoyment**

1. The process of using ride hailing service is pleasant
2. Using ride hailing service is enjoyable
3. Using ride hailing service does not bore me

#### **Variable 4: Privacy risk**

1. I am afraid that ride hailing services collect too much my personal information
2. I am afraid that ride hailing services disclose my personal information
3. I am afraid that sharing my personal information would lead to many uncertainties

4. It would be a potential threat to my privacy disclosing personal information

**Variable 5: Security risk**

1. I am afraid that ride-hailing would be insecure
2. I am afraid that ride-hailing would be unsafe
3. I am afraid that ride-hailing would create risk of physical harms
4. I am afraid that ride-hailing would not ensure my property

**Variable 6: Performance risks**

1. I am afraid the performance of trip not as I expect
2. I am afraid that the service would not perform well
3. I am afraid that the service might cause problems to my trip

**Variable 7: Subjective norms.**

1. My family members/friends/colleagues recommend me to use ride hailing service
2. My social network has support me use ride hailing service
3. Using ride hailing service shows the modern lifestyle
4. Using ride hailing service makes me feel special

**Variable 8: Automobile dependency**

1. I have no appropriate alternatives to driving
2. It is impossible for me to use public transportation
3. I prefer use automobile to other transportation

**Variable 9: Perceived value**

1. Using ride hailing service is beneficial compare with my effort
2. Using ride hailing service is worth to me

3. Using ride hailing service gives me good value

**Dependent variable: Adoption intention**

1. I intend to use ride hailing services
2. I would like to use ride hailing services
3. I will recommend others to use ride hailing services

**B. DEMOGRAPHIC QUESTIONS**

**Question 1: What is your gender?**

1. Male
2. Female
3. Others

**Question 2: What is your occupation?**

1. Students (undergraduates or graduates)
2. Employees (at company, school, public office, ...)
3. Own business
4. Others

**Question 3: How old are you?**

1. From 18 to 30
2. From 30 to 45
3. Above 45

**Question 4: Where do you live? \_\_\_\_\_**

**Question 5: What is your relationship status?**

1. Single
2. Married

**Question 6: How much is your income per month?**

1. Under 5M VND
2. From 5M to 10M VND
3. From 10M to 20M VND
4. Above 20M VND

**Question 7: Have you had any automobile (motorcycles or cars)?**

1. Yes
2. No

## CÂU HỎI KHẢO SÁT

Xin chào quý anh/chị!

Tôi là Nguyễn Lan Ngọc, sinh viên năm cuối khoa quản trị kinh doanh của trường Đại học Ulsan, Hàn Quốc. Tôi đang thực hiện nghiên cứu và thu thập dữ liệu cho đề tài: “Các nhân tố ảnh hưởng đến ý định sử dụng ứng dụng đặt xe công nghệ Grab ở Việt Nam”, bảng khảo sát này là một phần trong luận văn Thạc sĩ của tôi. Bảng câu hỏi này đưa ra câu hỏi với mục đích để có được phản hồi về ý định hành động của người chưa sử dụng trực tiếp ứng dụng đặt xe công nghệ Grab. Tôi xin hứa rằng dữ liệu thu được từ kết quả khảo sát không được sử dụng cho bất kì mục đích nào khác ngoài nghiên cứu này.

Ở đây không có câu trả lời chính xác cho mọi câu hỏi, mà tất cả thông tin đều hữu ích cho nghiên cứu. Các câu trả lời của quý anh/chị là một sự đóng góp rất lớn cho nghiên cứu của tôi, do vậy tôi rất mong anh/chị vui lòng dành thời gian để giúp tôi hoàn thành bảng câu hỏi khảo sát này. Tôi rất mong nhận được sự giúp đỡ của anh/chị!



Hình 1: Truy cập vào Ứng dụng

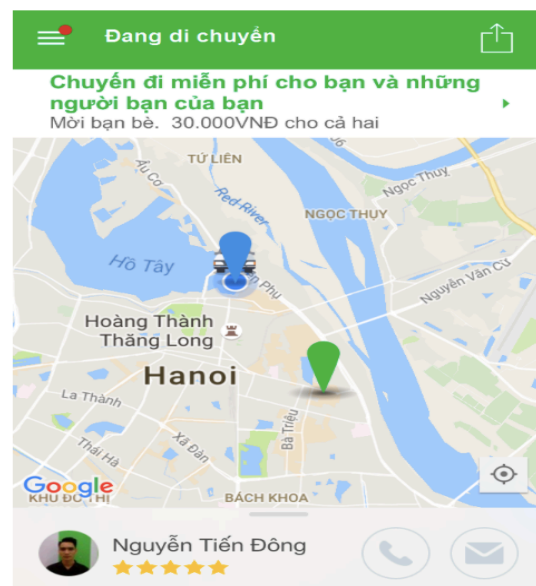


Hình 2: Nhập thông tin để đặt xe





**Hình 3: Tài xế di chuyển đến Điểm đón**



**Hình 4: Ứng dụng theo dõi quá trình cung cấp dịch vụ**

Sau đây tôi xin giải thích ngắn gọn về ứng dụng đặt xe công nghệ Grab: Ứng dụng giúp kết nối giữa nhà cung cấp dịch vụ vận tải và người có nhu cầu sử dụng dịch vụ vận tải (bao gồm xe hơi, xe máy, ứng dụng giao hàng, ...). Người dùng tải ứng dụng Grab về điện thoại; cung cấp các thông tin về họ và tên, số điện thoại, địa chỉ thư điện tử và ấn “Tiếp theo”; một mã kích hoạt sẽ được hệ thống của Grab tự động gửi đến số điện thoại đã được đăng ký; nhập mã kích hoạt vào ứng dụng Grab và bắt đầu sử dụng dịch vụ. Các bước thực hiện chuyến đi được minh họa trong hình ảnh dưới đây:

## A. CÂU HỎI LIÊN QUAN NGHIÊN CỨU

Anh/chị vui lòng cho biết mức độ đồng ý/không đồng ý của anh/chị với những phát biểu dưới đây (Đánh dấu vào các ô; trong đó, (1) Hoàn toàn không đồng ý, (2) Không đồng ý, (3) Trung lập (4) Đồng ý, (5) Hoàn toàn đồng ý)

Biến	Hoàn toàn không đồng ý	Không đồng ý	Trung lập	Đồng ý	Hoàn toàn đồng ý
<b>NHẬN THỨC VỀ TÍNH DỄ SỬ DỤNG</b>					
1. Tương tác với dịch vụ đặt xe không đòi hỏi nhiều nỗ lực	1	2	3	4	5
2. Dịch vụ đặt xe rất linh hoạt để sử dụng	1	2	3	4	5
3. Học cách sử dụng dịch vụ đặt xe rất dễ dàng đối với tôi	1	2	3	4	5
<b>NHẬN THỨC VỀ TÍNH HỮU ÍCH</b>					
1. Dịch vụ đặt xe rất hữu ích cho việc đi lại của tôi nói chung	1	2	3	4	5
2. Dịch vụ đặt xe thuận tiện cho việc đi lại của tôi	1	2	3	4	5
3. Dịch vụ đặt xe có thể cải thiện chất lượng chuyển đi của tôi	1	2	3	4	5
4. Dịch vụ đặt xe có thể tiết kiệm thời gian của tôi	1	2	3	4	5
<b>NHẬN THỨC VỀ SỰ VUI THÍCH</b>					

1. Quá trình sử dụng dịch vụ đặt xe rất dễ chịu	1	2	3	4	5
2. Sử dụng dịch vụ đặt xe thật thú vị	1	2	3	4	5
3. Sử dụng dịch vụ đặt xe không làm tôi buồn chán	1	2	3	4	5
<b>NHẬN THỨC VỀ RỦI RO QUYỀN RIÊNG TƯ</b>					
1. Tôi sợ rằng các dịch vụ đặt xe thu thập quá nhiều thông tin cá nhân của tôi	1	2	3	4	5
2. Tôi sợ rằng các dịch vụ đặt xe tiết lộ thông tin cá nhân của tôi	1	2	3	4	5
3. Tôi sợ rằng việc chia sẻ thông tin cá nhân của tôi sẽ dẫn đến nhiều điều sự không chắc chắn	1	2	3	4	5
4. Việc tiết lộ thông tin cá nhân của tôi sẽ là một mối đe dọa tiềm tàng đối với quyền riêng tư của tôi	1	2	3	4	5
<b>NHẬN THỨC VỀ RỦI RO SỰ AN TOÀN</b>					
1. Tôi sợ rằng dịch vụ đặt xe sẽ không đảm bảo	1	2	3	4	5
2. Tôi sợ rằng dịch vụ đặt xe sẽ không an toàn	1	2	3	4	5

3. Tôi sợ rằng việc gọi xe sẽ gây ra nguy cơ tổn hại về con người	1	2	3	4	5
4. Tôi sợ rằng việc gọi xe sẽ không đảm bảo tài sản	1	2	3	4	5
<b>NHẬN THỨC VỀ RỦI RO QUÁ TRÌNH THỰC HIỆN</b>					
1. Tôi sợ kết quả chuyến đi không như tôi mong đợi	1	2	3	4	5
2. Tôi sợ rằng dịch vụ sẽ không hoạt động tốt	1	2	3	4	5
3. Tôi sợ rằng dịch vụ có thể gây ra sự cố cho chuyến đi của tôi	1	2	3	4	5
<b>QUY CHUẨN CHỦ QUAN</b>					
1. Các thành viên trong gia đình / bạn bè / đồng nghiệp của tôi giới thiệu tôi sử dụng dịch vụ gọi xe	1	2	3	4	5
2. Mọi người xung quanh tôi đã ủng hộ tôi sử dụng dịch vụ gọi xe	1	2	3	4	5
3. Sử dụng dịch vụ gọi xe thể hiện phong cách sống hiện đại	1	2	3	4	5
4. Sử dụng dịch vụ gọi xe khiến tôi cảm thấy đặc biệt	1	2	3	4	5
<b>SỰ PHỤ THUỘC VÀO XE MÁY VÀ XE Ô TÔ</b>					

1. Tôi không có lựa chọn thay thế thích hợp cho lái xe	1	2	3	4	5
2. Tôi không thể sử dụng phương tiện giao thông công cộng	1	2	3	4	5
3. Tôi thích sử dụng ô tô/xe máy hơn các phương tiện giao thông khác	1	2	3	4	5
<b>NHẬN THỨC VỀ GIÁ TRỊ CỦA ỨNG DỤNG</b>					
1. Sử dụng dịch vụ gọi xe có lợi so với nỗ lực của tôi	1	2	3	4	5
2. Sử dụng dịch vụ gọi xe có giá trị đối với tôi	1	2	3	4	5
3. Sử dụng dịch vụ gọi xe mang lại cho tôi giá trị tốt	1	2	3	4	5
<b>Ý ĐỊNH SỬ DỤNG ỨNG DỤNG</b>					
1. Tôi có ý định sử dụng dịch vụ gọi xe	1	2	3	4	5
2. Tôi muốn sử dụng dịch vụ gọi xe	1	2	3	4	5
3. Tôi sẽ giới thiệu những người khác sử dụng dịch vụ gọi xe	1	2	3	4	5

## **B. THÔNG TIN CÁ NHÂN**

Câu 1. Giới tính của anh/chị là gì?

1. Nam
2. Nữ
3. Khác

Câu 2. Nghề nghiệp của anh/chị hiện tại là gì?

1. Học sinh, sinh viên.
2. Nhân viên, công nhân
3. Kinh doanh tự do
4. Khác

Câu 3. Anh/chị hiện nay bao nhiêu tuổi?

1. Từ 18-30
2. Từ 30-45
3. Trên 45

Câu 4: Anh/chị đang sống ở tỉnh/thành phố nào?

Câu 4: Tình trạng hôn nhân của anh/chị?

1. Độc thân
2. Đã kết hôn

Câu 5: Thu nhập trung bình một tháng của anh/chị?

1. Dưới 5 triệu vnd
2. Từ 5 triệu-10 triệu vnd
3. Từ 10 triệu-20 triệu vnd
4. Trên 20 triệu vnd

Câu 6. Anh/chị đã có ô tô/xe máy?

1. Đã có
2. Chưa có