

# FACTORS THAT INFLUENCES THE USES OF E-HAILING AS PUBLIC TRANSPORTATION FOR UNIVERSITY STUDENTS IN EAST COAST, MALAYSIA

Muhammad Hanafi Bin Ibrahim, Mat Yunoh, M.N.

Faculty of Entrepreneurship and Business,  
University Malaysia Kelantan,  
Malaysia.

Email: [hanafi.a17a0276@siswa.umk.edu.my](mailto:hanafi.a17a0276@siswa.umk.edu.my) , [naqib@umk.edu.my](mailto:naqib@umk.edu.my)

## Abstract:

*In this advance era where technology evolve vastly, other industry also evolve. A significant change has occurred in transportation industry in Asian country including Malaysia. The emergence of mobile transportation application has led to increase in demand for e-hailing services. E-hailing services are demand in a community including to university students. This study aims to bridge the gap by examine the factors that influence the uses of e-hailing as public transportation, particularly in relation to university students in East Coast, Malaysia. This study is a quantitative research and using a non-probability convenience sampling. Software Science for Social Science (SPSS) are used to analyze data collected from 379 university students. The target respondents are focusing in three university that is University Malaysia Kelantan (UMK), University Malaysia Pahang (UMP), and University Malaysia Terengganu (UMT). The results indicate that price, safety and marketing are significant to the intention to use e-hailing services among university students. The outcomes of this study will provides a better understanding e-hailing company to improve the services and attract more university students and potential customers to use e-hailing services.*

*Keywords: Intention, Marketing, Price, Safety, University Students*

## 1 Introduction

According to Mennecke and Strader (2003), mobile commerce or m-commerce refers to the activities via mobile devices such as smartphones or personal digital assistants. This lead to many ways of innovation. Mobility has become the new way of innovation (Hou, Zhao, Zhao, & Zhang, 2016). With this a disruptive technology advances happened on the transportation industry around the world and ride sharing or known as e-hailing been introduced. E-hailing service or ride sharing service is a services that matches passengers with private drivers via websites and mobile applications utilizing a location sharing systems (Ubaidillah, Yi, Hassan, Ali, & Hwang, 2019). E-hailing services such as GrabCar, My Car and Maxim are not only popular among university students but also in community. This is because, this services is easy to access at the time wanted, the price and method of payment and detail about the drivers are shown, also because it can pick customers and dropped the customers at the locations choose by the customers. The integration of the global mobile positioning system (GPS) and electronic payment along with the continuous need for flexible travel has caused the Grab e-hailing service to become one of the most prominent on-demand private driver platforms (Ubaidillah, Nar, Hamdan, Liwan, & Ismail, 2019).

There is a problem statement in this research that is price of the e-hailing serviced. Perceived price is defined as an individual belief of the price in relation to the quality of the product (Calabuiget al., 2014). University students and other customers will definitely choosing service that offered the cheapest price. Another problem is safety. University students

also will think about their safety when choosing an e-hailing services. Key indicators for traveler is service quality, trip attributes, journey time and information related to transfers (Ceder, Chowdhury, Taghipouran, & Olsen, 2013). According to Teo, Mustafa, and Rozi (2018), E-hailing were noted several cases relating to safety concerns such as driver misconduct and misbehavior, sexual harassment and assault, price overcharging and mishaps due to accidents during the journey. It's important for e-hailing company to make sure that the customer safety is guarantee.

This study aims to bridge the gap by examine the factors that influence the uses of e-hailing as public transportation, particularly in relation to university students in East Coast, Malaysia. The importance of this research is to identify the most important factors between price, safety, and marketing that influences the use of e-hailing services as public transportation.

This research has three objective that is to examine the relationship between price and the intention to use e-hailing as public transportation for university students in East Coast, Malaysia. The second objective is to examine the relationship between safety and the intention to use e-hailing as public transportation for university students in East Coast, Malaysia. The third objective is to examine the relationship between marketing and the intention to use e-hailing as public transportation for university students in East Coast, Malaysia.

## **1.2 Significance of Study**

Through this study, university students will realize the factors that influences or the reason for them to choosing e-hailing as transportation to go to the places they want. They will consider a factors such as price, safety and marketing to choose e-haling services. For example, university students will compare between two e-hailing company service price and they definitely will choose a lower price. However, university students also can use this factors to consider using other type of transportation such as public transportation like public bus and train.

Next, this study also provides information for e-hailing company to improve the e-hailing services. With this research e-hailing company such as grab and maxim will able to realizes the reason for university students to choose service that provided. E-hailing company can try to see if services provided are lacked any of this factors (price, safety and marketing) or facing problem, they can add or improve the factors to attract customers.

This study are not only giving impacts to the university students and e-hailing company but also to the community. Community can be influences by the trends from the social media marketing and trying e-hailing services or a family that don't have own transportation also likely to use e-hailing services as well. So the factors such as price, safety and marketing might influence or can be consider by them to choose e-hailing services they wanted. Maybe can choose e-hailing services that offer high price but safety are guarantee or choosing e-hailing services that offer lower price but the safety is just moderate.

Last but not least, the result of the study from this research also will able to help future researcher from related field by give information about factors that influences the uses of e-hailing service as public transportation for university students. Furthermore, it is also a good opportunity to push the ability in producing a good research rather than fulfilling the requirements for complementing studies.

## **2 Literature Review**

### **2.1 Intention to Use E-Hailing Services**

Intention can be described as “a thing intended, a plan or aim” (Ubaidillah, Nar, et al., 2019). Behavioral intention is defined as the intention of a person decision, plan or commitment to achieve a goal or carry out an action (Fayolle & Gailly, 2015). According to Lin (2017), satisfaction with facilities, service satisfaction, ride convenience, and service quality from strong motivators of passenger intention to ride and re-ride public transportation. E-hailing companies also must identify the factors that can influence the intentions to ride or use e-hailing services. From a previous study many factor of intentions to use e-hailing services have been found such as subjective norms, ease to use, accessibility, convenience and reliability. Passenger preference for this e-hailing mode was driven by other factor such e-hailing fare, travel companions, and passengers characteristics (Zhong, Ye, Wang, & Li, 2018). To maintain and attract more customers to use e-hailing services, method such as giving out promotion code and ensure a comfortable and enjoyment journey to customers can lead to intention to use and re-use e-hailing services.

### **2.2 Price**

Price is a very important factor that customers focusing when purchasing products or services. Perceived price is defined as an individual belief of the price in relation to the quality of the product (Calabuiget al., 2014). Perceived price in ride-sharing services is basically referring to the fares of the service charged to the passengers (Teo et al., 2018). Even in transportation industry such as e-hailing services, customers still focusing on the price. According to the (Brewer, Button, & Hensher, 2001), price is a vital indicator that affects affordability in relation to the fares charged and the service provided in transportation industry. Customers sometimes need to go or travel to a distant place but sometimes they had a limited budget, like university students, they usually will choosing e-hailing services that provide the lowest price but have a good quality. E-hailing services usually will giving a promotion codes to the customers, so they can uses e-hailing services with lower fares. According to the Ubaidillah, Yi, et al. (2019) the effects of price may influences the intention to use an e-hailing services.

### **2.3 Safety**

Safety is an important things that must be focusing by the e-hailing services and e-hailing drivers. Customers always focusing on price but that doesn't meant that they ignore about their safety. Customers want to feel protected when using the e-hailing services. According to Teo et al. (2018), Customers always had some doubts on the safety when using the ride-sharing services especially about driver, passengers privacy, vehicle conditions as well as insurance coverage. So it's important that e-hailing companies must overcome this problem to make sure customers trusting the services. Grab e-hailing services has implemented some initiatives to protect passenger safety, Example, grab drivers have to prove their certificate liability insurance and have no criminal record (Ubaidillah, Nar, et al., 2019). Grab also

promises to keep the personal data and information of customers in a safe and secure condition (Grab, 2017).

## 2.4 Marketing

Marketing can be defined as exchanges, conversations, and interventions to improve the quality of goods and services as well as to obtain some benefits (Iwu, 2009). Social media is something that people nowadays used. It is easily to influence and spread news using social media. The rise of social media has given companies the opportunity to engage with and listen to their customers while also allowing them to advertise their products (Ubaidillah, Yi, et al., 2019). Many Company have using social media as a platform of marketing by advertising and many other ways. Content marketing is defined as a strategic marketing approach focused on creating and distributing valuable, consistent and relevant content to attract and retain a clearly defined audience and to drive profitable customer actions (Baltes, 2015). Social media have been used as a platform of content marketing with many roles and tools to approach and attract customers to used e-hailing services. Role of social media marketing through platforms such as Facebook, Instagram, Twitter, and communication applications such as WhatsApp, Telegram, Line and Wechat (Ubaidillah, Yi, et al., 2019). University students are consider as generation z or millennia’s that always spending most of their time playing social media so they will easily noticed the content marketing of e-hailing services. This will attract them to try and used e-hailing services. Exposure to social media marketing may influence the intention to use an e-hailing services (Ubaidillah, Yi, et al., 2019).

## 2.5 Research Framework

The diagram below show the relationship between independent variables and dependent variable. From the framework, independent variables in this research have three which are price, safety, and marketing. The dependent variables for this research is intention to use e-hailing.

### **THE FACTORS THAT INFLUENCES THE USES OF E-HAILING AS PUBLIC TRANSPORTATION FOR UNIVERSITY STUDENTS IN EAST COAST MALAYSIA**

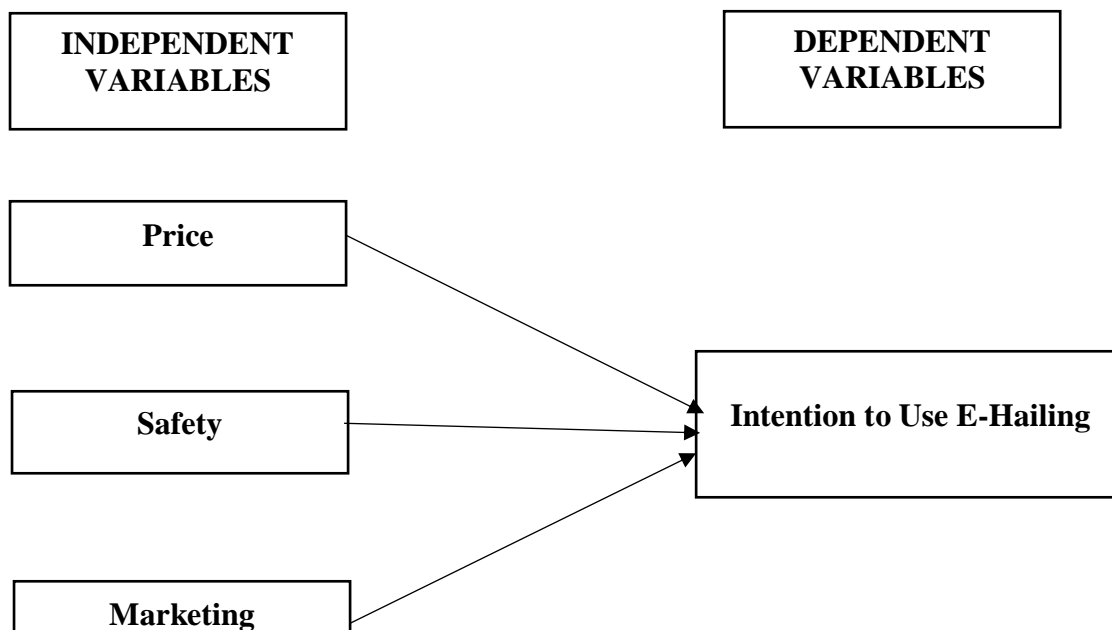


Figure 1: Research Framework for Dependent and Independent Variables.

## 2.6 Research Hypothesis

- H<sub>1</sub>: There is a significant relationship between price and the factors that influences the uses of e-hailing as public transportation for university students in East Coast, Malaysia.
- H<sub>2</sub>: There is a significant relationship between safety and the factors that influences the uses of e-hailing as public transportation for university students in East Coast, Malaysia.
- H<sub>3</sub>: There is a significant relationship between marketing and the factors that influences the uses of e-hailing as public transportation for university students in East Coast, Malaysia.

## 3 Research Methodology

This study are using a quantitative research design which is descriptive analysis and correlation research. Researcher are using non-probability convenience sampling method in collected the target respondents. The target respondents are based on the population targeted that is university students in East Coast, Malaysia. The target university is University Malaysia Kelantan (UMK), University Malaysia Pahang (UMP) and University Malaysia Terengganu (UMT). The total population from the three university is 31, 122 university students, so based on the table Krejcie and Morgan the sample size will be 379 students.

Questionnaire are created using Google form and distributed online that is through Whatsapp and e-mail. The questionnaire are also distributed by hand only to the University Malaysia Kelantan (UMK) students. The questionnaire are divided into 5 sections, section A is about demographic respondents, section B, C and D is about the independent variables that is price, safety and marketing. The last section, is section E is about the dependent variable that is intention to use e-hailing services.

To analyse the data collected, Statistical Package from Social Science (SPSS) version 26 are used. The analysis used is frequency and pie chart to interpreted the demographic section, Cronbach's alpha are used to measure the reliability. Descriptive analysis are used to measure the mean. The last analysis used is spearman's analysis to show the strength of association between dependent and independent variables.

## 4 Research Findings and Data Analysis

### 4.1 Demographic Profile

Table 1: Demographic Profile of Respondents

Variables	Frequency	Percentage %
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<b>Gender</b>		
Female	210	55.40
Male	169	44.60
<b>Total</b>	<b>379</b>	<b>100 %</b>
<b>Age</b>		
19-22	228	60.20
23-26	144	38.0
27-30	6	1.60
Above 31	1	0.30
<b>Total</b>	<b>379</b>	<b>100 %</b>
<b>Religion</b>		
Buddhist	47	12.40
Hindu	35	9.20
Islam	290	76.50
Others	7	1.80
<b>Total</b>	<b>379</b>	<b>100 %</b>
<b>Races</b>		
Chinese	47	12.40
Indian	35	10.80
Malay	290	74.70
Others	7	2.10
<b>Total</b>	<b>379</b>	<b>100 %</b>
<b>University</b>		
University Malaysia Kelantan (UMK)	140	36.90
University Malaysia Pahang (UMP)	121	31.90
University Malaysia Terengganu (UMT)	118	31.1
<b>Total</b>	<b>379</b>	<b>100 %</b>
<b>Education</b>		
Degree	345	91.0
Diploma	24	6.30
Master	7	1.80
Phd	3	0.80
<b>Total</b>	<b>379</b>	<b>100 %</b>
<b>Monthly Income</b>		
Below RM 1000	354	93.40
RM 1000 – RM 2000	21	5.50
RM 2000 – RM 3000	2	0.50
Above RM 3000	2	0.50
<b>Total</b>	<b>379</b>	<b>100 %</b>

The demographic profile of respondent as presented in table 1 indicated that the majority of respondent are female 55.40% from the age of 19 – 22 years old (60.20%). Most

of the respondents are Islam (76.50%) and Malay race (74.70%). The majority of students that participated in this questionnaire are from University Malaysia Kelantan (UMK) (36.90%) and study in degree (91%). Most of them are from income group below RM 1000 (93.40%).

#### 4.2 Descriptive (Mean) Analysis

Table 2: Price Descriptive (Mean) Analysis

Descriptive Statistic		
Question (IV <sub>1</sub> = Price)	N	Mean
I think I can save money if using e-hailing service.	379	4.36
I understand that the payment process of e-hailing service is more easy and effortless.	379	4.40
I'm willing to pay more time and money for e-hailing services.	379	4.17
Valid N (Listwise)	379	

Table 2 shows the summary of independent variables (price) mean analysis. From the table, it concludes that the question with the highest mean (4.40) is "I understand that the payment process of e-hailing service is more easy and effortless. The question with the lowest mean (4.17) is "I'm willing to pay more time and money for e-hailing service".

Table 3: Safety Descriptive (Mean) Analysis

Descriptive Statistic		
Question (IV <sub>2</sub> = Safety)	N	Mean
I feel safe when using e-hailing services because the booking transparency information are provided such as driver name and car plate number.	379	4.50
I feel secure when travelling use e-hailing services because the historic journey are recorded systematically.	379	4.49
I feel safe when traveling using e-hailing services because my location can be declare in social media.	379	4.46
I feel safe when using e-hailing services in the same road with other road users.	379	4.39
I concerned about the speed limits when using the e-hailing services.	379	4.38

Valid N (Listwise)	379	
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Table 3 shows the summary of independent variables (safety) mean analysis. From the table, it conclude that the question with the highest mean (4.50) is “I feel safe when using e-hailing services because the booking transparency information are provided such as driver name and car plate number”. The question with the lowest mean (4.38) is “I concerned about the speed limits when using the e-hailing services”.

Table 4: Marketing Descriptive (Mean) Analysis

Descriptive Statistic		
Question (IV <sub>3</sub> = Marketing)	N	Mean
I can easily understand the information and concept of e-hailing service.	379	4.45
From the marketing in social media I able to understand the advantages and figures of e-hailing services.	379	4.37
The information and marketing use by e-hailing come from various channels and resources.	379	4.39
It is easy for I to get and access the information of e-hailing services in my daily life.	379	4.40
The media attention receives on e-hailing marketing affect my willingness to use e-hailing services.	379	4.40
Valid N (Listwise)	379	

Table 4 illustrate the summary of independent variables (marketing) mean analysis. From the table, it conclude that the question with the highest mean (4.45) is “I can easily understand the information and concept of e-hailing service”. The question with the lowest mean (4.37) is “From the marketing in social media I able to understand the advantages and figures of e-hailing services”.

Table 5: Intention to Use Descriptive (Mean) Analysis

Descriptive Statistic		
Question (IV = Intention to Use)	N	Mean
I intend to look the e-hailing service online app in the future.	379	4.40
I intend to use e-hailing services in the future.	379	4.35
I will consider to use e-hailing services when I need transportation to go to my university or other places.	379	4.34



I think it is worth my time and money to use e-hailing services.	379	4.34
I will recommend others people such as family members and friends to use e-hailing services.	379	4.39
Valid N (Listwise)	379	

Table 5 shows the summary of dependent variables (intention to use) mean analysis. From the table, it conclude that the question with the highest mean (4.40) is “I intend to look the e-hailing service online app in the future”. The question with the lowest mean (4.34) is “I will consider to use e-hailing services when I need transportation to go to my university or other places” and “I think it is worth my time and money to use e-hailing services”.

Table 6: Dependent and Independent Variables Descriptive (Mean) Analysis

Descriptive Statistic					
Variables	Respondent (n)	Minimum	Maximum	Mean	Standard Deviation
Price	379	2.00	5.00	4.31	0.544
Safety	379	3.00	5.00	4.44	0.444
Marketing	379	3.20	5.00	4.41	0.443
Intention to use E-hailing	379	3.20	5.00	4.36	0.455

Table 6 illustrate the summary of dependent and independent variables mean analysis. From the table, it conclude that the question with the highest mean (4.44) is from the independent variable of safety. The question with the lowest mean (4.31) is from the independent variables of price. All the variables that is price, safety, marketing and intention to use indicates the level of mean strongly agree.

### 4.3 Reliability Analysis

Table 7: Reliability Analysis Test

Variables	Number of Items	Reliability Coefficient	Strength of Association
Price	3	0.720	Acceptable
Safety	5	0.835	Good
Marketing	5	0.853	Good
Intention to use E-hailing	5	0.872	Good

Table 7 shows the reliability analysis test for this research. Consists of independent and dependent variables with the total respondent of 379 respondents and the total number of items is 18. Independent variable of price reliability coefficient is 0.72 that means the strength of association is acceptable. Independent variables of safety (0.835), marketing (0.853) and dependent variable of intention to use (0.872) reliability coefficient is higher than 0.8 but lower

than 0.9. That means the strength of association good. In conclusion all the independent and dependent variables is reliable.

#### 4.4 Spearman's Correlation

Table 8: Spearman's Correlation Analysis

		Price	Safety	Marketing	Intention to Use
Price	Correlation Coefficient	1.000	.738**	.715**	.712**
	Sig. (2-tailed)	.	.000	.000	.000
	N	379	379	379	379
Safety	Correlation Coefficient	.738**	1.000	.790**	.785**
	Sig. (2-tailed)	.000	.	.000	.000
	N	379	379	379	379
Marketing	Correlation Coefficient	.715**	.790**	1.000	.840**
	Sig. (2-tailed)	.000	.000	.	.000
	N	379	379	379	379
Intention to Use	Correlation Coefficient	.712**	.785**	.840**	1.000
	Sig. (2-tailed)	.000	.000	.000	.
	N	379	379	379	379

\*p-value<0.05, spearman correlation analysis applied

Based on the table 4.2.1, there is a positive moderate – good significance relationship between price and intention to use s-hailing ( $p < 0.05$ ,  $r = 0.712$ ). Next, there is also a positive perfect significance relationship between safety and intention to use e-hailing ( $p < 0.05$ ,  $r = 0.785$ ). Marketing also have a positive perfect significance relationship with intention to use e-hailing ( $p < 0.05$ ,  $r = 0.840$ ).

## 5 Discussion

### 5.1 Hypothesis Testing

Table 9: Hypothesis Testing

	Hypothesis	Significant value	Relationship strength	Accepted or Rejected

H <sub>1</sub>	There is a significant relationship between price and the factors that influences the uses of e-hailing as public transportation for university students in East Coast, Malaysia.	0.712	High	Hypothesis, H1 are accepted
H <sub>2</sub>	There is a significant relationship between safety and the factors that influences the uses of e-hailing as public transportation for university students in East Coast, Malaysia.	0.785	High	Hypothesis, H2 are accepted
H <sub>3</sub>	There is a significant relationship between marketing and the factors that influences the uses of e-hailing as public transportation for university students in East Coast, Malaysia.	0.840	High	Hypothesis, H3 are accepted

To conclude, the significance value for price, safety and marketing are 0.712, 0.785, and 0.840. All three significance value are between 0.71 – 0.90, this means that the significance value relationship strength are high with the dependent variables (intention to use e-hailing). This result shows that the three independent variables (price, safety and marketing) has a significance relationship with the dependent variables (intention to use e-hailing). Thus H1, H2 and H3 are accepted.

## 5.2 Price

**H<sub>1</sub>: There is a significant relationship between price and the factors that influences the uses of e-hailing as public transportation for university students in East Coast, Malaysia.**

Table 9 shows that, there is a significance relationship between price and the intention to use e-hailing. Based on the table 5.1,  $p = 0.00$ ,  $r = 0.712$ , study can conclude that there is a positive moderate – good significance relationship between price and the intention to use e-hailing as public transportation for university students in East Coast, Malaysia.

Price is a vital indicator that affects affordability in relation to the fares charged and the service provided in transportation industry (Brewer et al., 2001). Customers especially university students will consider price as a vital factor in choosing a transportation as budgeting is important for them. The lower the price offered to them, the higher the chances that university students will choose e-hailing service as transportation. Based on the previous study, price may have a significance impact on the intention to use an e-hailing services.

## 5.3 Safety

**H<sub>2</sub>: There is a significant relationship between safety and the factors that influences the uses of e-hailing as public transportation for university students in East Coast, Malaysia.**

Table 9 illustrate that, there is a significance relationship between safety and the intention to use e-hailing. Based on the table 5.1,  $p = 0.00$ ,  $r = 0.785$ , study can conclude that there is a

positive perfect significance relationship between safety and the intention to use e-hailing as public transportation for university students in East Coast, Malaysia.

Customers always had some doubts on the safety when using the ride-sharing services especially about driver, passenger privacy, vehicle conditions as well as insurance coverage (Teo et al., 2018). It is important to ensure that customers feel safe and protected when using an e-hailing services. E-hailing service must make sure that they implement the best safety and all the detail about customer personal information are secure properly. Based on the previous study, safety may have a significance impact on the intention to use an e-hailing services.

#### 5.4 Marketing

**H<sub>3</sub>: There is a significant relationship between marketing and the factors that influences the uses of e-hailing as public transportation for university students in East Coast, Malaysia.**

Table 9 shows that, there is a significance relationship between marketing and the intention to use e-hailing. Based on the table 5.1,  $p = 0.00$ ,  $r = 0.840$ , study can conclude that there is a positive perfect significance relationship between marketing and the intention to use e-hailing as public transportation for university students in East Coast, Malaysia.

Marketing is important not only to introduce products and services offered to customers but also to attract customers to purchased or try the products and serviced. There is many method and tools can be used to reach customers through marketing. Social media have been used as a platform of content marketing with many roles and tools to approach and attract customers to used e-hailing services. Role of social media marketing through platforms such as Facebook, Instagram, Twitter, and communication applications such as WhatsApp, Telegram, Line and Wechat (Ubaidillah, Yi, et al., 2019). Based on the previous study, marketing may have a significance impact on the intention to use an e-hailing services.

#### 6 Conclusion

This study examines the factors that influences the uses of e-hailing as public transportation for university students in East Coast, Malaysia. This study independent variables is price, safety and marketing are used to examine the relationship with the dependent variables that is intention to use e-hailing services. This study focusing on East Coast, Malaysia university students that is student in University Malaysia Kelantan (UMK), University Malaysia Pahang (UMP) and University Malaysia Terengganu (UMT). The sample size is 379 respondents.

The data from respondents are interpreted using cronbach's alpha to see the reliability, then demographic are interpreted using frequencies and pie chart by (%). After that, the data are interpreted using descriptive analysis and spearman's analysis to get the final result. Final result shows that hypothesis are testing and all the three independent variables (price, safety and marketing) has significance relationship with the dependent variables (intention to use).

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