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Acceptance of e-Hailing System for Grocery Delivery Services in Urban Area

Ilham Mat Yajid[1], Kamarudin Ambak[2]*

[1]Faculty of Civil Engineering and Built Environment,
Universiti Tun Hussein Onn Malaysia, Batu Pahat, 86400, MALAYSIA

[2]Smart Driving Research Center, Faculty of Civil Engineering and Built Environment, Universiti Tun Hussein Onn Malaysia, 86400 Batu Pahat, johor, MALAYSIA

*Associate Professor, Faculty of Civil Engineering and Built Environment,
Universiti Tun Hussein Onn Malaysia

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Abstract: E-Hailing services provide sharing economy between customers and service provider. This system applying the use of technologies in the service that will give benefit to many parties especially on grocery delivery services. This study aims to determine the level of acceptance of customers towards e-Hailing system on grocery deliveries in urban areas. The objectives are to determine the contributing factor to the acceptance of grocery delivery services in urban areas and to evaluate the level of user acceptance between registered and unregistered company in providing such services. The questionnaire was distributed to the communities or residents in Klang Valley. The location of the study was focused on the Klang Valley where there are major cities that is suitable for this study. The online survey platform (Google Form) was used to design questions and was distributed to respondents for this study. The survey was distributed to 203 respondents. Survey questions are designed based on the Technology Acceptance Model (TAM). Descriptive, correlation and regression analysis were performed to analyze data obtained from the questionnaire. The findings showed that the factors that most contributed to the adoption of the e-Hailing system of grocery delivery services in urban areas is Perceived Ease of Use (PeOU), whereby the confidence of existing services is more efficient and safer. The companies that registered with The Company of Malaysia (SSM) are the preferred choice for consumers in the Klang Valley over companies not registered with SSM. There is a significant relationship between behavioral intent (BI) and the actual use of the system (ASU). Among the proposed improvements to grocery delivery services is to increase the number of rider of goods in a district to assist in the speed of delivery of goods and the delivery time of groceries to the consumers.

Keywords: e-Hailing, Grocery Deliveries, Technology Acceptance Model

*Corresponding author: kamarudin@uthm.edu.my

1.0 Introduction

The transportation and technology industry in Malaysia over the years has been moving forward and forward. Technological advancement has become one of the most important and necessary aspects of the business structure of commercial trade in economic partnerships in recent years [1]. This development has given rise to various systems that facilitate the affairs of the universal community such as the e-Hailing system. It is a transport service that uses an online application that appears in the transportation industry that involves interaction between customers and service providers. Apps that use the internet, such as smartphones, have altered how people conduct business and live their daily lives. On online platforms, users of this technology can share property, resources, time, and skills. [2] which is an economic system that drives economic partnership. In Malaysia, e-Hailing services have been used exclusively to reflect shared mobility services facilitated by applications [3].

e-Hailing system services are becoming more widespread not only in peninsular Malaysia but also active in Sabah and Sarawak. Among the services available in the e-Hailing system are the soaring grocery delivery services. Following the upgrade, several vehicles have become alternative vehicles and preferred for e-Hailing system users including motors, private vehicles or cars, and taxis. Other top companies such as Lalamove and AEON Delivery have begun to take steps by registering in the system [3]. The service is gaining more attention among users nowadays. Basically, this grocery delivery service is increasingly adopted by consumers around urban areas due to the rapid pace of development. The concept of e-Hailing services is related to shared mobility; e-distinct Hailing's characteristics are widely explored. The principle of sharing economies underpins the motivations for e-Hailing services. [4]. where traditional business markets are progressively replaced by more innovative, dynamic and intuitive platforms. This gradual change was caused by the rapid improvement of information technology and the internet, which drove convergence and further progress.

1.1 E-Hailing System

The term e-Hailing system refers to a transportation service whereby the user uses any form of technology and application such as mobile phone to do any online business involving services from service providers. A vehicle booking service using a mobile app that links passengers to nearby automobiles and involves fare payments is known as an e-Hailing system. [5]. Ride Sourcing is a mobile smartphone software that connects passengers to vehicles for hire. Passengers choose their location using GPS coordinates, are matched with the nearest driver, and an estimated cost (travel, driver rating, and time) is provided, all while using private automobiles. [6].

1.2 Grocery Deliveries Service

GrabMart is one of the products manufactured by Grab company that can be used by consumers to place any grocery orders in a few simple steps [7]. Foodpanda company through its app has taken the right action by giving discount codes to users who make any purchases in its app [8]. The two companies did some little to help in increasing the percentage usage of e-Hailing system from the local community. Discounts are a very common marketing strategy for attracting consumers. Lalamove provides a wide selection of services such as parcel delivery, vehicle ordering and including grocery delivery to consumers.

1.3 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was developed by Davis, Bagozzi and Warshaw (1989) to describe user acceptance of technology [9]. This theory suggests that Perceived Usefulness (PU) and Perceived Ease of Use (PeOU) are external factors of behavioral acceptance. These two elements are usually used as determinants of user attitude and behavioral intentions over the use of information systems. This theory is the most used model for studying the acceptance of e-Hailing technology [10].

TAM suggests that PeOU and PU are the two most important factors in explaining the use of the technology. PeOU is the perception that a particular system or technology is easy to use, while PU is the extent to which an individual believes that using technology will improve his or her performance [9].

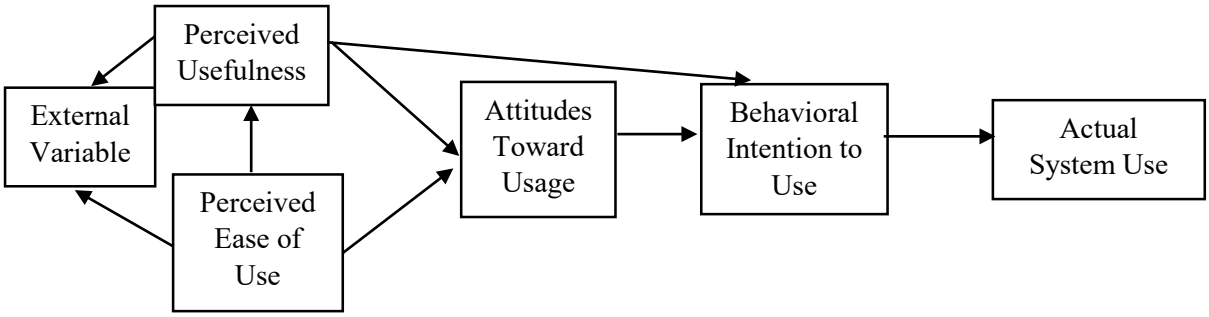


Figure 1: Technology Acceptance Model (TAM) [9]

2. Materials and Methods

The study focuses on e-Hailing users' acceptance towards grocery delivery in Klang Valley. The Technology Acceptance Model used to determine the relationship between its components.

2.1 Materials

In this study, the quantitative method was employed to collect data through a questionnaire. TAM components were used to create and form the questionnaire. The questionnaire has been divided into three sections, each with its own set of questions. Likert scale questions on third part is based on TAM was developed to justify the satisfaction of users towards grocery delivery services in Klang Valley. The part of questionnaire are as follows:

- Part A: Demographic information
- Part B: Respondent's experience
- Part C: Respondent's acceptance

2.2 Methods

The pilot study was be used in this study at first phase. The questionnaire was distributed to 30 random respondents. Before conducting the real study, the pilot study needs to be done first to determine the reliability and validity of the designed question in the questionnaire. This reliability study allows researchers to recognize the weakness of the questionnaire and may be used to improve it. The reliability of Alfa Cronboach is one of the most widely used reliability measures in social sciences and organizations. The reliability of Alfa Cronbach describes the total (or average) reliability of a measurement that can represent a questionnaire or test. The Alpha Cronboach coefficient ranges from 0.1 to 0.9 of which 0.7 and above are considered acceptable and excellent for study. Statistical Package for Science Social (SPSS) version of 26.0 was used in this study. The coefficient value for this pilot study is 0.876 which means the designed questionnaire can achieve aim of this study.

For this study, Klang Valley residents will be the target respondents to collect the necessary data. The population in the Klang Valley is more than 100 thousand population where the appropriate sample size is 384 samples according to method proposed by [11]. However, a sample size of 200 is sufficient to conduct a study. Thompson [12] suggested that at least 200 respondents must be sampled to achieve a stable solution. Total of 203 respond has been collected throughout the questionnaire and be analyzed in 3 types of analysis. The raw data was analyzed using descriptive, correlation, and regression analysis to get the results. Descriptive analysis provides an easy summary of the sample or data collection that has been created. The summary is as in the form of statistics, visuals, and graphs that are easy to understand. Correlation is a measure of how similar two variables are. A change in the magnitude of

one variable in a data set is associated with a change in the magnitude of another variable, either with the same characteristic (positive correlation) or with the opposite direction or characteristic (negative correlation). This regression analysis showed the relationship between the two variables in the form of equations [13].

2.3 Equations

Below is the equation that used in regression analysis. The analysis needs to be done to justify the relationship between the components in TAM.

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots\dots\dots + \beta_n x_n \qquad Eq.\ 1$$

Where;

Y	= Dependent variables (Behavioral Intention and Actual System Use)
$x_1, x_2, \dots x_n$	= Independent variables (Perceived Usefulness, Perceived Ease of Use)
β_0	= Constant
$\beta_1, \beta_2, \dots \beta_n$	= Regression coefficient for independent variables

3. Results and Discussion

Total 203 respondents have given their feedback for this study. The data was analyzed with descriptive, correlation, and regression analysis to perform the results.

3.1 Descriptive Analysis

Based on the feedback, 54.2% (110 respondents) is the female gender while 45.8% (93 respondents) is the male gender. The age category from 20 to 30 years old had the highest percentage of 72.4 % followed by age categories of 31 to 40 years (20.7%), over 40 years (4.4%) and under 20 years old (2.5%). A total of 137 people with 67.5% who responded were Malays. The Chinese were 14.3% and India (12.8%). Other races (5.4%) referred to respondents who were Malays, Chinese and Indians. The majority of Malay respondents responded to this study. Single status is the highest marital status when compared to other marital status at 63.1%. The second highest status was married (35.5%) and the latter was another status (1.5%) only. A total of 39.2% comprised respondents from Shah Alam district and the highest was from other district respondents. The percentage of respondents from other districts were from Klang district (17.2%), W.P Kuala Lumpur (11.8%), W.P Putrajaya (9.9%), Petaling Jaya (8.4%). Respondents in Cheras and Ampang districts had the same percentage of respondents (7.9%) followed by Subang Jaya (6.4%), Selayang (5.9%) and Sepang (5.4%). respondents from urban areas (83.7%) were more than the rural respondents (16.3%). Urban area respondents of 170 people responded to the survey compared to 33 from rural areas. Respondents (34.5%) were the highest respondents to the study. 32% from the private sector, 15.3% are self-employed, 12.3% in the government sector, 4.9% are housewives and 1% are pensioners. A total of 66 people (32.5%) of the 203 people who gave feedback were not aware that they were students or full-time housewives. Percentage of monthly income category from RM 2001 to RM 3000 (27.6%) followed by income of RM 3000 and above (20.2%). The income category with the lowest percentage (19.7%) was from RM 1000 to RM 2000.

Table 1: Respondent's demographic

Item	Frequency (n)	Percentage (%)
Gender		
Male	93	45.8
Female	110	54.2
Age		
Below 20 years old	5	2.5
20 to 30 years old	147	72.4
31 to 40 years old	42	20.7
Above 40 years old	9	4.4
Race		
Malay	137	67.5
Chinese	29	14.3
Indian	26	12.8
Other	11	5.4
Married Status		
Single	128	63.1
Married	72	35.5
Others	3	1.5
District in Klang Valley		
W.P Kuala Lumpur	24	11.8
W.P Putrajaya	20	9.9
Klang	35	17.2
Cheras	16	7.9
Shah Alam	39	19.2
Subang Jaya	13	6.4
Petaling Jaya	17	8.4
Selayang	12	5.9
Ampang	16	7.9
Sepang	11	5.4
Location		
Urban	170	83.7
Rural	33	3.2
Occupation		
Student	70	34.5
Government sector	25	12.3
Private sector	65	32
Self-employed	31	15.3
Housewife	10	4.9
Retiree	2	1
Monthly income		
None	66	32.5
RM1000 to RM2000	40	19.7
RM2001 to RM3000	56	27.6
RM3000 and above	41	20.2

Table 2 shows the respondent experience towards e-Hailing grocery delivery services in Klang Valley Majority of respondents made a reservation for groceries using a smartphone (90.1%) which is simply easy to access. The percentage of tablet devices (5.4%) and laptops (4.4%) is very distant when compared to smartphones. most respondents used it several times a week with a 39.9% percentage. 28.6% of the usage percentage was once a week while once a month it was 25.6%. There is only a slight percentage difference between the frequency once a week and once a month. As a result of this survey, the frequency of daily usage (5.9%) is a minority which means only a handful of respondents daily use

the e-Hailing grocery delivery service. The highest usage of services was from GrabMart services (55.7%) followed by Pandamart (50.2%), Lalamove (28.6%), Tesco Online (23.2%), Mydin Express (16.3%), JayaGrocer (15.8%), Happy Fresh (7.9%). Next, the percentage of use of other types of services is only 2.5%. Motorcycle transport (78.3%) is the highest consumption of transport. Car transport (19.2%) and vans (2.5%) were the respondents' choice as the transportation used to make goods. Majority respondents chose the delay in receiving orders (58.6%) as a common problem in using the service. The second and third common problems are expensive or unreasonable shipping costs (46.3%) and inaccurate order types (22.7%). Unsatisfactory levels of internet access (18.2%) were also a problem in their usage while other problems (6.5%). Companies that registered under Commission of Malaysia (SSM) (91.6%) as the preferred choice in providing grocery delivery services in the Klang Valley. Only a handful of companies are not registered with SSM (8.4%).

Table 2: Respondent's experience

Item	Frequency (n)	Percentage (%)
The type of device to make order (e-Hailing)		
Smartphone	183	90.1
Laptop	9	4.4
Tablet	11	5.4
Use of grocery delivery service (e-Hailing)		
Everyday	12	5.9
Once a week	58	25.6
Several times a week	81	39.9
Once a month	52	25.6
The type of grocery delivery service often uses (e-Hailing) (can choose more than one)		
GrabMart	113	55.7
Lalamove	58	28.6
Pandamart	102	50.2
Mydin Express	33	16.3
Tesco Online	47	23.2
Jaya Grocer	32	15.8
Happy Fresh	16	7.9
Other	3	2.5
The type of transportation e-Hailing service often uses		
Motorcycle	159	78.3
Car	39	19.2
Van	5	2.5
The problems often occur when use grocery delivery service (e-Hailing) (can choose more than one)		
The type of order receive is incorrect	46	22.7
The delivery price is high/ not affordable	94	46.3
Unsatisfactory internet access	37	18.2
Delay in receiving orders	119	58.6
Others	13	6.5
The company preferred to use		
Company registered under SSM	186	91.6
Company not registered under SSM	17	8.4

3.2 Correlation Analysis

Correlational analysis aims to find out the extent of the relationship between several variables. The correlation coefficient's value is limited between -1 and +1. This analysis has been conducted with two analyses between Perceived Usefulness (PU), Perceived Ease of Use (PeOU) and Behavioral Intention (BI). The results of the first correlation analysis showed a positive linear relationship between two independent variables which are the PU and PeOU at ($r = 0.632$) and significant on ($p < 0.01$). The association between dependent variables (Behavioral intention) and independent variables (PU and PeOU) similarly exhibits a positive linear relationship in the second analysis at ($r = 0.540$) and significant at ($p < 0.01$). The higher the r value, the stronger the correlation [14]. Table 3 shows the pearson correlation analysis for variables.

Table 3: Pearson Correlation Analysis for Variables

		Perceived Usefulness	Perceived Ease of Use	Behavioural Intention
Perceived Usefulness	Pearson Correlation	1	.632**	.540**
Perceived Ease of Use	Pearson Correlation	.632**	1	.605**
Behavioral Intention	Pearson Correlation	.540**	.605**	1

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

3.3 Regression Analysis

Based on the TAM model, there are two variables which are independent variables (PU and PeOU) and dependent variables (BI). Due to the existence of more than one item of an independent variable, multiple regression analysis was performed to obtain the results of the study.

3.3.1 Multiple Regression for Perceived Usefulness with Perceived Ease of Use and Behavioral Intention

The association between Perceived usefulness, Perceived Ease of Use, and Behavioural Intention was investigated using multiple regression analysis. The R value obtained is 0.407, while adjusted R square is 0.401 which shows approximately 40% change in independent variables (PU and PeOU) to dependent variables (BI). The summary of Analysis of Variance (ANOVA) displays some of the values for dependent variables (BI) and independent variables (PU and PeOU). These values include Mean Square for Residual (0.984) and F (68,721). A regression analysis shows a significant relationship ($p = 0.000^{b)}$ between dependent variable and independent variable. Beta-sensitive values are also the result of multiple regression analyses as shown in Table 4. The independent variable, PU ($\beta = 0.263$) and PeOU ($\beta = 0.439$). From the two beta values, it can be concluded that Perceived Ease of Use to be the dominant variable or better than Perceived Usefulness to be used in the study. Users will be more likely to use technology if they believe it will be valuable to them and that it will be simple to use. [15]. According to Ambak [16], states that PeOU be the more influential variable than PU to the intention of users towards the system.

table 4: Multiple regression coefficient for perceived usefulness with perceived ease of use and behavioral intention

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.915	.564		3.393	.001
	Perceived Usefulness	.147	.039	.263	3.740	.000
	Perceived Ease of Use	.247	.040	.439	6.252	.000

a. Dependent Variable: Behavioral Intention

3.3.2 Multiple Regression Analysis for Behavioral Intention with Actual System Use

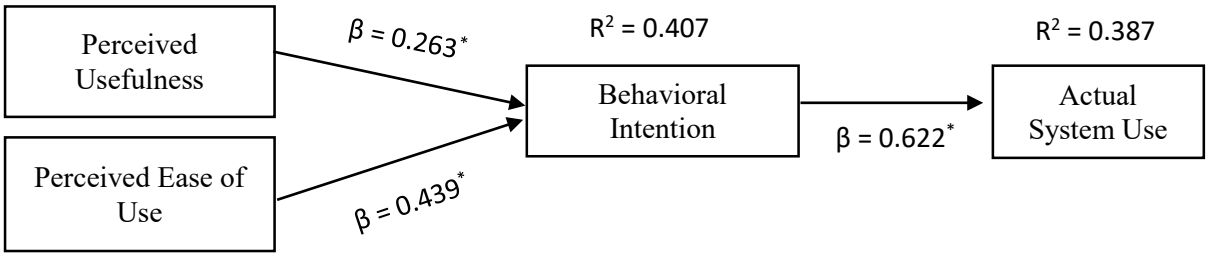
Regression analysis was also performed to determine the relationship between Behavioral Intention (BI) and Actual System Use (ASU). The value of R Square (0.387) signifies that 38% Behavioral Intention can explaining the Actual System Use. Based on the ANOVA summary, the relationship between the two variables is significant ($p = 0.000^{b)}$. Therefore, the relationship can be used to determine respondents' use of e-Hailing systems for grocery delivery services. The beta value ($\beta = 0.622$) indicates an excellent and strong relationship between the independent variable (Behavioral Intention) and the dependent variable (Actual System Use). The two variables are significant at ($p = 0.000$) which indicates that the variables can describe each other. Table 5 shows the multiple regression coefficient for Behavioral Intention with Actual System Use.

Table 5: Multiple Regression coefficient for Behavioral Intention with Actual System Use

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.171	.277		4.231	.000
	Behavioral Intention	.365	.032	.622	11.261	.000

a. Dependent Variable: Actual System Use

Based on the regression analysis, the Perceived Ease of Use was a dominant variables or factor that led to Behavioral Intention compared with Perceived Usefulness. The Behavioral intention and actual system use have a substantial link or significant. From this analysis, it was found that the TAM components relate each other, and it affect the residents in Klang Valley to use the grocery delivery services thru e-Hailing. User's behavior acceptance to use the system was affected by the intention of use [17].



note: *significant level at p<0.001

Figure 2: TAM component for e-Hailing system grocery delivery service

4. Conclusion

Finally, A contributing factor to the acceptance of grocery delivery services in urban areas is the confidence that existing services are more efficient and safer. Besides that, the second factor that contributes to it is that the service facilitates the day-to-day affairs of users. Time savings and internet access levels also influenced the acceptance of e-Hailing grocery delivery services. In general, the first objective of this study was achieved through the identification of the contributing factors mentioned. The second objective of the study was achieved through feedback on the respondents' experience for this survey. Companies registered with the Companies Commission of Malaysia (SSM) are the preferred choice as companies providing grocery delivery services in the Klang Valley. Some of the reasons for the selection are such that companies are recognized, easier and more reliable to buy goods, guaranteed and safe to buy, and low risk of fraud. The use of descriptive, correlation and regression analysis help in determining the correlation between factors people choose to use the e-Hailing system with their tendency to use the service system. The Technology Acceptance Model (TAM) is an easy-

to-use model to find out what factors influence the utilization of an e-Hailing system for grocery delivery in urban areas. Perceived Ease of Use (PeOU) is a stronger variable in influencing a person's inclinations. The tendency is towards the actual use of e-Hailing system on the service.

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