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The Satisfaction Factors on Online Food Delivery Service: A Case Study: Residents of Klang Valley, Malaysia

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Abstract
Customer's satisfaction, delivery time inefficiency, expensive delivery fee, and limited delivery distance are all challenges faced when using an online food delivery service platform. The main objective of this study is to examine the relationship between customers' satisfaction who have used and experienced online food delivery services and the independent variables which are; ease of use, availability, and privacy. The other objective is to identify which factors (ease of use, availability and privacy) significantly affect Klang Valley residents' satisfaction on online food delivery service. The data were collected through online questionnaires from a snowball sample of 400 Klang Valley residents. In order to reach the respondents, the questionnaires were delivered online using Google Form. The data are analyzed by using the Pearson's Correlation Coefficient and Multiple Linear Regression. The Pearson's correlation coefficient found that there is a significant relationship between customers' satisfaction towards online food delivery services. Additionally, the findings of the Multiple Linear Regression analysis indicate that all the factors have a significant impact on customers' satisfaction towards online food delivery services. The researcher's recommendation is to look at the relationships between riders' views toward consumers and what they think of online food delivery services. The other recommendation is to broaden the target group and apply this type of study to different environments.
Keywords: Customer's Satisfaction, Food Delivery Service, Pearson's Correlation Coefficient, Multiple Linear Regression.

Introduction
Background of Study
Online food delivery services run as intermediaries between sellers and customers using online platforms. Formation of online food delivery service is one of the appreciable initiatives for some individuals. This is because there was a moment when meals could only be bought directly in person or by calling restaurants directly to place orders even before pickup or using their delivery service.

Nowadays, online food delivery services have been enhanced by using websites and in-app ordering as a platform and it will be very beneficial to people who are busy working. Due to the increasing working population and those time-crunched work-life societies in town areas, the concept of meal delivery is swiftly getting popular.

In addition, the online food delivery services are gradually and steadily influencing the food beverages sector by maintaining their businesses. Customer satisfaction is greatly influenced by the tangibility factors of service, meal quality and food pricing, according to research conducted by (Ha et al., 2010; Nicolaides, 2008). Furthermore, to retain and persuade customers online, the salesperson should maintain the quality of food in order to receive a favourable response. Therefore, to get a significant position, every service company must provide quality service to boost client satisfaction

In addition, customer reliability has specifically been investigated in the context of online platforms McKnight et al (2002), since its existence supports the maintenance of long-term customer connections. Moreover, customers just like the adjustability of ordering food online because it reduces the burden of terrible traffic or severe weather conditions (Ha et al., 2010).

Problem Statement
Online food delivery has been one of the most important services especially since the COVID-19 pandemic first hit in early 2020. Although the pandemic has made many changes since then, one thing about the "new normal" that has become permanently set in the local landscape is the food delivery services (Abirami, 2021).

Since most of the food and beverages (FB) businesses are not allowed to have people dining in, customers a have to take outs from their preferred restaurants through online food delivery services like Foodpanda and GrabFood (Nayan & Hassan, 2020). It is widely used and shows the positive acceleration especially towards the growth of the online food delivery market revenue. According to Hooi et. al (2021), there is 18.6% of the development on that online food delivery market from 2017 until 2021 has been recorded. Another study shows that the growth of this market would be kept up to 11% for every year (Eu et al., 2021).

Despite the definite growth, there still rises problems which affect customer satisfaction. Service quality is a common problem related to online food delivery services. It is proven by the level of customer satisfaction either positively or negatively towards the services (Raj et al., 2021). Excellent services provided by the online food delivery companies would become the customer's earliest option to order the food. As the way to use the services is through gadgets, there are some features needed to achieve users' satisfaction because it involves the disclosure of personal information, information quality and can also be time-consuming.
This study's aim is to define the relationship between service quality and customer satisfaction as it is becoming increasingly popular and demanding, particularly in Klang Valley, Malaysia. Everyone knows that online food delivery services make a statement regarding their punctuality in delivering customers' food and beverages. However, some of them are unable to fulfil their promises because of unexpected and unavoidable circumstances, such as obstacles at every location due to Movement Control Orders (MCO). Customers who anticipate their meal to arrive on time may be disappointed if they must wait a bit longer. This might impact the image of the business as well as its revenue. To achieve the highest

customer satisfaction, service providers must concentrate on service quality, with the ultimate aim of food delivery services being maximal customer satisfaction rather than profit (Nicolaides, 2008).

Although it balances opposite forces, American Express stated the percentage of customers cancelling the purchase is 50% influenced by the poor service experience (Batra, 2021). It happens as it did not meet user expectations. Ease of use, availability, and privacy will be analysed as these factors are well drawn by previous study which refers to the relationship between e-service quality and e-satisfaction (Teeban Raj et al., 2021). Therefore, we would like to study about the significant factor that could possibly impact Klang Valley residents' satisfaction on online food delivery services.

Research Objectives
1. To examine the relationship between Klang Valley residents' satisfaction and ease of use, availability and privacy on online food delivery service.
2. To identify which factors (ease of use, availability and privacy) significantly affect Klang Valley residents' satisfaction on online food delivery service.

Methodology
Description of Data
This study referred the framework adopted by a study from (Teeban Raj et al., 2021). The purpose of this study is to identify the factors affecting customers' satisfaction on online food delivery service of the Klang Valley residents of Malaysia. Therefore, researchers will be implementing online questionnaires to gather primary data .

Research Population and Sample
The target population for this study is residents of the Klang Valley, Malaysia. The current population of Klang Valley in 2022 is 8,420,000 (MacroTrends,2022). The size of the sample is 400 residents in Klang Valley, Malaysia. A study by (Susanti et al., 2019) suggests that the value obtained is by using the Slovin's Formula to find sample size. The formula is as shown below ,

$$n = \frac{N}{1 + N(e^2)}$$

The sample is selected using a snowball sampling as the research was conducted during the pandemic covid-19 period and unavailability of the sample frame.

Research Instrument
The research instrument used in this study is an online questionnaire. The online questionnaire was developed based on the article 'Factors Affecting Customer Satisfaction and Loyalty in Online Food Delivery Service during the COVID-19 Pandemic : Its Relation with Open Innovation. Table 2.1 below shows the summary of questionnaire.

Table 2.1

The Summary of Questionnaire by Section

| Type of Questions	Section	Variable	Scale of Measurements	Sources

Multiple choice question	Demographic Profile	- Gender
		- Age
		  - Areas in Klang Valley you reside in
		- Monthly income
		  - Frequency of use online food delivery service
		- Frequently used online food delivery service
			Nominal	-

Likert-scale questions	Ease of Use	Ease of use of the food delivery service application	Interval	(Prasetyo et. al., 2021)
	Availability	Information available when ordering food online	Interval	(Prasetyo et. al., 2021)
	Privacy	Customer's privacy and security	Interval	(Prasetyo et. al., 2021)
	Satisfaction	Customer's satisfaction towards use of online food delivery service	Interval	(Prasetyo et. al., 2021)

Theoretical Framework
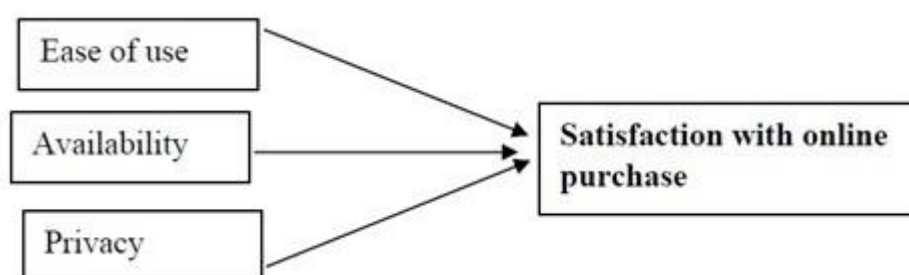
Figure 2.1: Theoretical Framework

It can be shown in Figure 2.1, the dependent variable in this study is satisfaction with online purchase and it depends on the independent variables which are ease of use, availability and privacy. The theoretical framework was adopted from a study by (Teeban Raj et al., 2021).

Pilot Study
Pilot study is one that is conducted prior to the main study. It is carried out on a smaller scale than the primary or full-scale study. In other words, the pilot study is critical for improving

the quality and efficiency of the main study. As for this study, a pilot study was done by distributing questionnaires to a random group of people from Klang Valley consisting of 40 respondents. These 40 people were chosen randomly from each district in Klang Valley. The data were collected and prepared for analysis using Statistical Package for Social Science (SPSS) Software to determine the pilot study's reliability. The actual study begins once the reliability has been computed and approved.

Data Analysis
Reliability Test
The constancy of scale is referred to as reliability. Whenever a test is repeated at the same time and produces relatively similar results, it is said to be reliable. Meanwhile, an observation, questionnaire, examination or other measurement process will be provided to the tests. The Cronbach Alpha value was used to evaluate the questionnaire's reliability. Hence, Cronbach's alpha test is used to determine the reliability of multiple questions of Likert-scale surveys. The item is regarded as acceptable if the alpha value is in between 0.6 and 0.8. A scale of 0.8 or higher is required for better results. The following is a rule of thumb for determining alpha:

Table 2.2
Rules of Thumb of Cronbach's Alpha Coefficient Size

Cronbach's Alpha	Internal Consistency
$\alpha \leqslant 1.0$	Excellent Reliability
$0.8 \leqslant \alpha \leqslant 0.9$	Good Reliability
$0.7 \leqslant \alpha < 0.8$	Acceptable Reliability
$0.6 \leqslant \alpha < 0.7$	Questionable Reliability
$0.5 \leqslant \alpha < 0.6$	Poor Reliability
$\alpha < 0.5$	Unacceptable Reliability

According to Table 2.2, Cronbach's alpha value should be between 0.7 and 1.0 for all the questions in questionnaires to be acceptable. Meanwhile, for values between 0.5 and 0.7 indicates that the reliability is questionable reliability and poor reliability, whilst alpha value less than 0.5 indicates that the questions are unacceptable reliability (Koonce & Kelly, 2014).

Pearson's Correlation Coefficient
According to the F-statistic, an overall p-value of less than 0.05 usually indicates that the model as a whole is significant. Meanwhile, Pearson's Correlation Coefficient is a statistical method to measure the type of the relationship, the strength of the relationship and the linear relationship between the independent variable (X) and the dependent variable (Y). It is the best method that can be used to study the type of data obtained in the form of scales or ratios. The formula for the Pearson's Correlation Coefficient value is as follows

$$r = \frac{SS_{yy}}{\sqrt{SS_{xx}SS_{yy}}} \quad (2.1)$$

The strength of correlation can be generally defined as follows
Table 2.3
Rules of Thumb of Pearson's Correlation Coefficient

Pearson correlation coefficient, r	The strength of correlation
$\pm 0.81 < |r| < \pm 1.00$	Strongest
$\pm 0.61 < |r| < \pm 0.80$	Strong
$\pm 0.41 < |r| < \pm 0.60$	Moderate
$\pm 0.21 < |r| < \pm 0.40$	Weak
$\pm 0.00 < |r| < \pm 0.20$	Weak to No Relationship

Source : Hair, Ortinau, and Harrison (2010). Essentials of marketing research (2nd ed.).
New York: McGraw-Hill.

Multiple Linear Regression

Multiple linear regression is frequently referred to as a simple linear regression expansion. It is used when a variable's value must be predicted based on the values of two or more factors. The variable to be predicted is known as the dependent variable, and the variables used to forecast the value of the dependent variable are known as the independent variables.

Therefore, in general, the multiple regression equation of *y* on X_1, X_2, X_3,. ....X_k is given by: where it indicates:

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \qquad (3.2)$$

where it indicates

y = Klang Valley Residents satisfaction towards online food delivery services β_0, β_1, β_2, β_3 and β_4 are the regression parameter

X_1 = Ease of Use X_2 = Availability X_3 = Privacy
ε = is the random error with mean

Summary of Data Analysis Technique
Table 3.4
Summary of Data Analysis Technique

OBJECTIVES	METHOD OF ANALYSIS
To examine the relationship between Klang Valley residents' satisfaction and ease of use, availability, and privacy on online food delivery services.	Pearson's Correlation Coefficient
To identify which significant factors (ease of use, availability and privacy) affect Klang Valley residents' satisfaction on online food delivery service.	Multiple Linear Regression

As shown in Table 3.4, the first objective was to use Pearson's correlation coefficient to examine relationship between Klang Valley residents' satisfaction and esase of use, availability and privacy on online food delivery service. The second objective is identify the

significant factors affecting Klang Valley residents' satisfaction with online food delivery services using multiple linear regression.

Model Summary

The R-squared(R^2) scales from 0 to 1 and indicates the amount of variation in the outcome variable can be accounted for mostly by the model predictor variables (Kassambara, 2018). The correlation coefficient between the predicted values and the actual result values is represented by R^2 in multiple linear regression. The R^2 gauges how well the model fits the data. When the R^2 value is higher, it shows a better model. The number of independent variables included in the predictive model is corrected by adjusting the Adjusted R Square($R^2 adj$) value in the summary output.

Scatter Plot Matrix

Scatter plot matrices are an excellent approach to determine if there is a linear association between various variables. Each scatter plot in the matrix depicts the relationship between two variables, allowing multiple associations to be investigated in a single graph. These matrices of scatter plot can be obtained using SPSS.

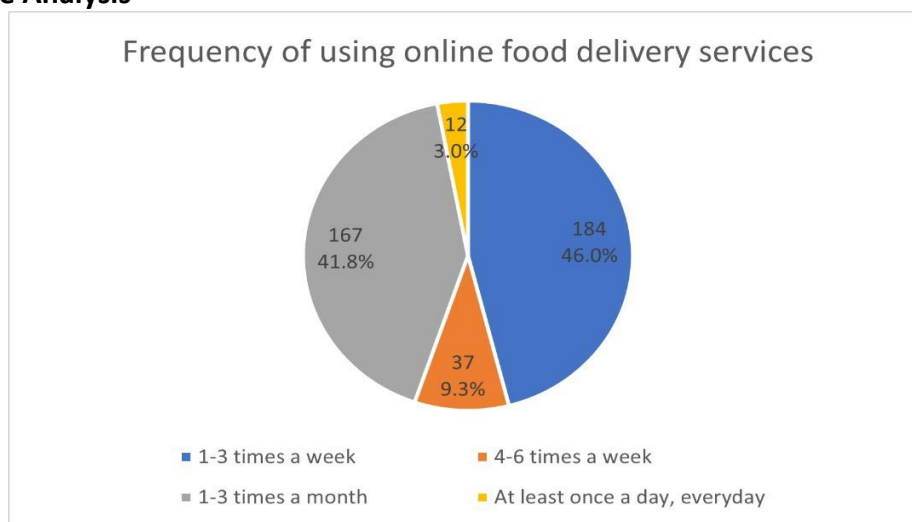## Results and Discussions
Descriptive Analysis

Figure 3.1: Pie Chart of Frequency of using online food delivery services

Figure 3.1 above displays a pie chart of frequency of using online food delivery services. Based on the pie chart, most respondents use online food delivery services about 1-3 times a week with 46% and 184 respondents. Meanwhile, the lowest was at least once a day, everyday with a percentage of 3% and 12 respondents.

Figure3. 2: Bar Chart of Frequency of most frequent online food delivery services used
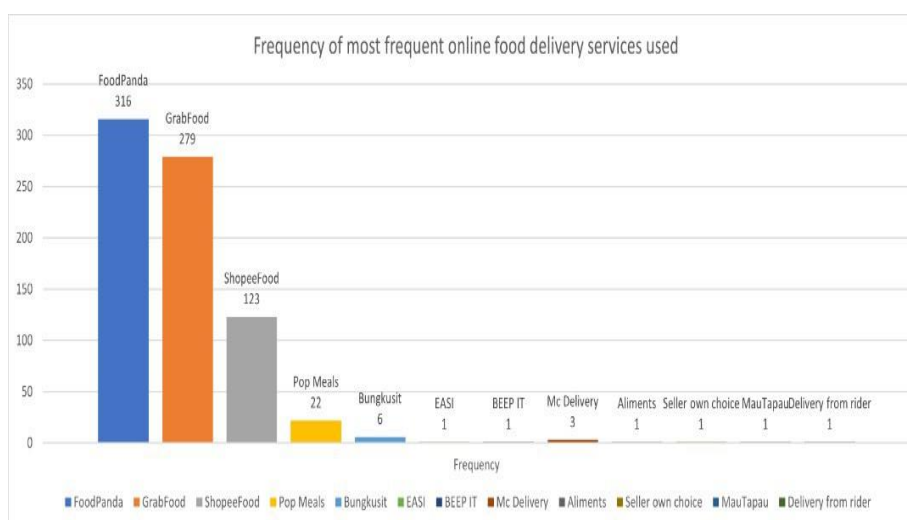

Figure 3.2 above shows a bar chart of the frequency of most frequent online food delivery services used. Based on the above bar chart, there are about 316 choices of Food Panda chosen by respondents, which indicates that it is the most frequent service used. Besides, other choices by respondents like Aliments, seller's own choice, MauTapau and delivery from rider share an equal value of one each.

Pearson's Correlation Regression

Table 3.1
Values of Pearson Correlation for Each Variable

Variables	Pearson correlation	Significance value
Ease of Use	0.731	0.0000
Availability	0.726	0.0000
Privacy	0.762	0.0000

The above table shows the significant relationship of each independent variable toward the dependent variable (Satisfaction) as well as the overall correlation. Besides, it shows that all independent variables (Ease of use, Availability and Privacy) have a significant relationship with the dependent variable (Satisfaction) since the level of significance is less than 0.05 (α = 0.05). In addition, all independent variables (Ease of use, Availability and Privacy) have a strong positive correlation. Therefore, this answers the first objective of the research.

Multiple Linear Regression
The research's second objective is to identify which significant factors among ease of use, availability and privacy affect Klang Valley residents' satisfaction on online food delivery services. Multiple linear regression methods have been used to examine the objective.

Model Adequacy Checking
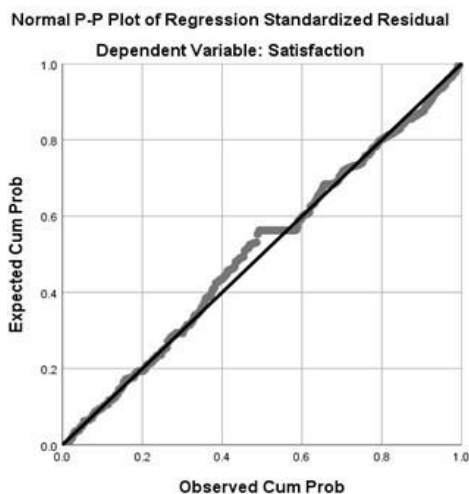## Normality of Error Term

Figure 3.3.1: Normal P-P Plot of Unstandardized Residual

A normal p-p plot of unstandardized residual is shown in Figure 3.3.1 to indicate if the distribution is normal and thus the fifth assumption of multiple linear regression about the error terms meets the normality assumption. Since the plots are dispersed over the straight line, it was clear from the plots that the error terms are approximately normally distributed. As a result, the normality of error terms were met.
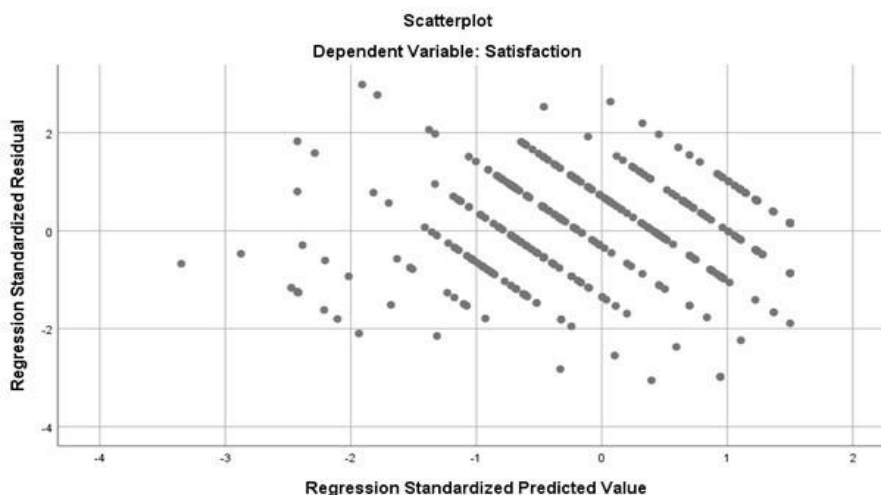
Homoscedasticity

Figure 3.3.2: Scatter plot of Residual against Predicted Value

According to Figure 3.3.2, the plots are scattered and fluctuate around zero value and show no obvious pattern. Besides, there is no apparent change in the variation of the residuals which indicates that the error has constant variance. Therefore, the homoscedasticity assumption is satisfied.

Independency

Table3.2 DurbinWatson

1.489

Based on Table 3.2 the value of Durbin-Watson is 1.489 approximately to 1.5. It indicates the value in the range of 1.5 to 2.5. It is clear from the value given in the preceding table that the error terms are independent of one another. In this model, there is no serial correlation issue.

General Fitness of The Final Model
According to Table 3.3 as the p-value is less than 0.05, it can be concluded that the model is significant in determining the Klang Valley residents' satisfaction on online food delivery services.

Table 3.3
Significant of Model

F -statistic	P-value
397.775	0.0000

Table 3.4 shows the model summary table that consisted of R^2, R^2adj and standard error of the estimate of the model. Based on the information stated on the table, the value of R Square, R^2 is 0.751. It indicates that 75.1% of the variability of Klang Valley residents'satisfaction on online delivery services is explained by the model above while the other 24.9% explained by other factors. Furthermore, the value of Adjusted R Square, R^2adj is 0.749. The value tells us that 74.9% of the variance in the Klang Valley residents' satisfaction on online food delivery services is explained by ease of use, availability and privacy while the other 25.1% explained by other factors.

Table 3.4
Model Summary Table

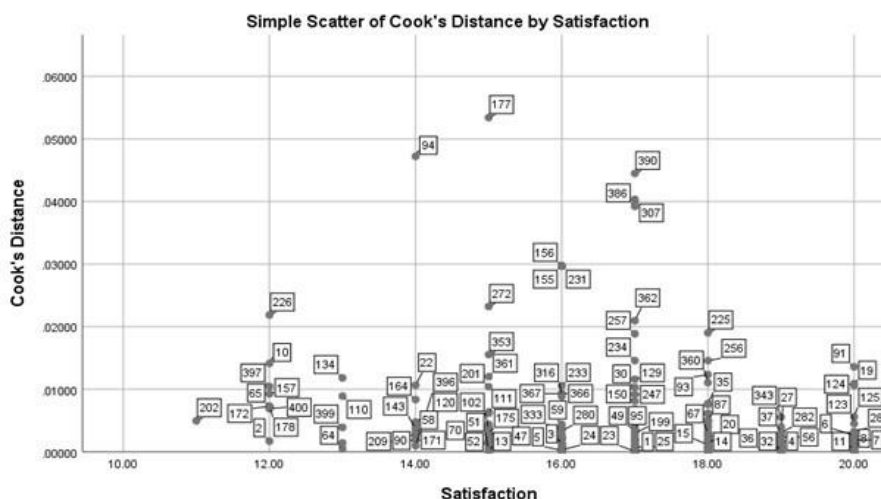| R-square	Adjusted R square
0.751	0.749

Checking for Outliers

Figure 3.3.3: Cook's Distance of Klang Valley residents satisfaction on online food delivery services

By referring to Figure 3.3.3, the observations 94 and 177 appear to be clearly more pointed than the majority of the others. Consequently, the two observations are eliminated from the dataset to prevent the points from affecting the study since they are away from the other points.

Multicollinearity
Table 3.7
Collinearity Statistics

Variable	Tolerence	VIF
(Constant)		
Ease of Use	0.495	2.022
Availability	0.526	1.901
Privacy	0.600	1.666

Given the values of Tolerance and Variance Inflation Factor (VIF) in Table 3.5 which includes Klang Valley residents, indicates the most important factor influencing satisfaction on online food delivery services. There is no multicollinearity in the data since all the independent variance has values of tolerance greater than 0.1 and values of Variance Inflation Factor (VIF) lower than 10, proving that the second model adequacy assumption is satisfied.

Full Model Estimation
Table 3.8
Coefficient of Multiple Linear Regression

Variable	Coefficient	P-value
(Constant)	0.412	0.000
Ease of Use	0.029	0.000
Availability	0.026	0.000
Privacy	0.028	0.000

Based on Table 3.8, it shows that all independent variables included in the model are ease of use, availability and privacy which are important to the model. Meanwhile, the dependent variable is satisfaction. Hence, all independent variables are significant to the model since p-value is less than significant value (α = 0.05). Therefore, there is a significant relationship between satisfaction and ease of use, availability and privacy. It shows that the full model equation is as follows:

$$\hat{y} = 0.412 + 0.029 \, easeof use + 0.026 \, availability + 0.028 \, privacy$$

Conclusions and Recommendations
The first objective of this study is to examine the relationship between Klang Valley residents' satisfaction and ease of use, availability and privacy on online food delivery service by using Pearson's Correlation Coefficient. The Pearson's Correlation Coefficient measures the strength of linear relationship between two variables. From the analysis that has been made using Statistical Package for Social Sciences (SPSS), it was observed that the relationship of each independent variable which were ease of use, availability and privacy with dependent variable which is satisfaction, has a strong positive relationship since the Pearson correlation values are 0.731, 0.726 and 0.762 respectively.

Next, the Multiple Linear Regression was utilised to assess various factors for the second objective of determining which significant factors affect Klang Valley residents' satisfaction towards online food delivery services. However, there are assumptions to be met in Multiple Linear Regression. As a result, the Model Adequacy Checking procedure was utilised to determine whether the assumptions were met. The findings showed that all the three independent variables which are ease of use, availability and privacy are significant to the model. This is because all of the assumptions are met and values obtained are appropriate and within range. Based on the full model estimation, it is proven that the result obtained showed that all three independent variables which are ease of use, availability and privacy are all significant to the model. The full model equation is as follows:

$$\hat{y} = 0.412 + 0.029 \, easeof use + 0.026 \, availability + 0.028 \, privacy$$

Similar results were obtained in a study by Raj et al (2021) where 35 the research has satisfactorily addressed all three stated research questions and showed the existence of a significant relationship. All things considered, this study paints a clear picture of how ease of use, availability and privacy give impact towards Klang Valley residents' satisfaction towards online food delivery service.

Several suggestions and recommendations are thrown out for improvement in future research due to the limitations and difficulties that this study procedure encountered. The first recommendation that is advised is to investigate the connections between riders'

attitudes toward clients and customers' experience with online food delivery services. It is because customers who engage this service are primarily dealt with through riders. Due to that, it might affect how customers rate an online food delivery application depending on the services they provide, perhaps the interactivity of the riders. An online food delivery service's user base is subsequently impacted by the mentioned factor. Because there is no research based on this undertaken by any researcher, the services offered become less relevant to use as a result of the subpar service supplied to users. The next recommendation is to widen the target population using this research in a variety of areas. This action could help to identify the problem that might arise in a certain place. With the purpose that, online food delivery services could be improved from time to time. This study will also look into the factors that influence consumer satisfaction. Several 36 other variables linked to the dependent variable being examined may indeed be related using the same research in other contexts. The findings of this study can assist online meal delivery service businesses in promoting their services by supplying more sophisticated and up-to-date parts. Research done so that the application is easy to use and brings stability to users, who are the main source of feedback on their level of satisfaction with the services provided. This will benefit businesses in the long run.

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