The New Role of E-commerce Operation Management and Sustainability

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PREFACE

The FKP Undergraduate Colloquium 2022/2023 was held in as virtual on 30 January 2023 at Campus Kota, Universiti Malaysia Kelantan. It was a delightful event with all the final year undergraduate student participants had many fruitful discussions and exchanges that contributed to the success of the colloquium.

The main objective of the colloquium with the theme "5th Multidisciplinary Research on the Entrepreneurship and Business Colloquium 2022/2023" is to be a platform for students to present and publish their works as well as to share their research progress with their colleagues and experts. 18 papers for the field of E-commerce Operation Management and Sustainability from the Logistics and Distributive Trade students were presented during the colloquium.

All in all, the FKP Undergraduate Colloquium 2022/2023 was very successful. The editors would like to express gratitude to all participants and the committees that have helped in ensuring the smooth sailing of making the colloquium into a reality.

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The Study on the Factors Affecting Customer Satisfaction in E- commerce Logistics Service Quality in Kelantan

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Abstract:

To maintain market competitiveness, it is more important to create value in logistics services to satisfy customer expectations. Given the scarcity of research on logistics service quality, in this paper we wanted to investigate how logistics services quality effect customer satisfaction in Kelantan. This study was made to measure logistic service quality factors; information quality, product condition, customer service, and reverse logistic. This study used a quantitative research approach to assess logistic service quality in Kelantan, and 389 people took part in it. The collected data will be analysed using (IBM SPSS Statistics). Various data analysis methods, such as descriptive, reliability, and internal analyses, are performed on the data collected from the questionnaire survey. The findings show that the factors studied have a strong positive correlation with customer satisfaction. The findings suggested that knowledge had a significant impact on influencing customer satisfaction. The findings of this study point in the direction of determining the factors that influence customer satisfaction with reference to logistics service quality.

Keywords*: Customer Satisfaction, Customer Service, Information Quality, Product Condition, Reverse logistics*

1   Introduction

1.1   Background of Study

Millions of Malaysians who had become online consumers suddenly sparked exponential development in digital commerce, and retailers already using e-commerce platforms to operate their online business. These E-commerce companies need a large logistics operation to be able to reach every customer that orders using their website. Leuschner & Lambert claim that a focus on providing excellent service helps to boost both company image and client happiness. For this reason, service quality has emerged as a topic of discussion in professional and academic communities. Companies must identify and enhance customer perceptions of service quality to remain competitive. The field of logistics offers businesses a way to set themselves apart from rivals. Nevertheless, when customer expectations and experiences are compared, a picture of logistics service quality takes shape (Giao et al., 2020).

The condition of the order comprises several essential parts. On the one hand, contractual requirements must be met regarding the time, place, and specific delivery conditions. The state of the order means that they can change the courier service to meet the needs and requirements of every customer. Part of the order's dimension condition is ensuring the shipment is safe. As a dimension of the LSQ model, the quality of the information includes availability and easy access to information; accuracy, clarity, appropriate language, and a variety of ways to give information; the speed of information delivery; ability to keep in touch with the client throughout providing the service; and keeping track of user feedback.

In details, the speed of disposal of the product which does not match up to the swiftness of ordering. Specifically, the ordering speed may take of disposal of the product is deferred until the delivery of the product and it can take up to several days. However, maintaining customer service and relationship will be quite demanding. Companies are eager to develop global fulfilment operations in Malaysia to support their worldwide supply chain activities due to Malaysia's key geographical position and the country's rising embrace of technology, which makes the supply chain process flexible and efficient (Vinculum, 2022). Research that examines the calibre of logistics services in e-commerce and assesses how well the business performs in comparison to its rivals is still uncommon. Hence, this scope of this study is to determine which factors affect the customer satisfaction on E-commerce logistics service quality in Kelantan.

1.2 Problem Statement

Malaysia's e-commerce logistics market is in an early stage of development and fragmented, with over 1000 Express Logistics business delivering E-commerce shipment across the country. The COVID-19 outbreak has resulted in substantial shifts in consumer behaviour, creating new chances for every Malaysian SME to participate on the global stage.

A small percentage of buyers would not make an online purchase because they prefer to touch and use the product instead of viewing it on an e-commerce portal. Due to Malaysia's strategic geographic location and growing utilization of technology, businesses are willing to establish worldwide fulfilment operations in Malaysia.

1.3 Research Questions

1. What is the relationship between information quality and customer satisfaction on E- commerce logistics service quality in Kelantan?
2. What is the connection between product condition and customer satisfaction on E-commerce logistics service quality in Kelantan?
3. What is the relationship between customer service and customer satisfaction on E-commerce logistics service quality in Kelantan?
4. What is the relationship between reverse logistics and customer satisfaction on E-commerce logistics service quality in Kelantan?

1.4   Research Objectives

This research aims to achieve the following objectives:

1.   To determine the relationship between information quality and customer satisfaction on E- commerce logistics service quality in Kelantan.
2.   To identify the relationship between product condition and customer satisfaction on E- commerce logistics service quality in Kelantan.
3.   To discover the relationship between customer service and customer satisfaction on E- commerce logistics service quality in Kelantan.
4.   To recognize the relationship between reverse logistics and customer satisfaction on E- commerce logistics quality in Kelantan.

2   Literature Review

Customer satisfaction is based on a number of variables, including information quality, product condition, customer service and reverse logistics. The connection between these elements in brick-and-mortar businesses is the subject of some studies. Insufficient research has been done on the quality of e-commerce logistics services.

2.1   Previous Study

Customer satisfaction is critical for logistics companies seeking a competitive lead. If they fail to satisfy their customers' expectations, this function will be assumed by other sectors. When the service quality factors that customers consider most important are fulfilled or exceeded, customers are more likely to be satisfied with online shopping.

2.1.1   Customer Satisfaction

The primary goal of e-commerce is to offer customers high-quality services in a mobile and easily accessible format. Customer satisfaction is the result of the experiences customers have during the purchasing process (Pereira, Salgueiro, & Rita, 2016). When the service quality characteristics are thought to be most significant are fulfilled or exceeded, customers are more likely to be satisfied with online buying (Kong & Chow, 2015).

Finding the main components of service quality is crucial in order to forging a lasting relationship with consumers. The ability of businesses to understand customers' expectations is growing more attractive. Customers' dissatisfaction with logistics services will reflect negatively on e-commerce sellers' assessments of those services, which will then lead to a decline in sellers' satisfaction.

2.1.2   Information Quality

The outcome of a platform, such as the financial statement system's information quality, can be used to illustrate information quality in general. In this study, information quality refers to how well the application's creator-made content is presented to users and how well it is retained by them.

In order to satisfy customers, particularly those who shop online, the quality of the information is the key factor. High-quality information systems in the context of e-

commerce increase the customers' intention to use the services. Hapsari et al. (2017) looked into this and discovered that the customer value had a direct and significant impact on customer satisfaction. In this model, the information quality acts as a stimulus and the customer experience and perceived value act as organisms.

2.1.3   Product Condition

In order to satisfy customers, particularly those who shop online, the quality of the information is the key factor. High-quality information systems in the context of e-commerce increase the customers' intention to use the services. In this model, the information quality acts as a stimulus and the customer experience and perceived value act as organisms. For the customer, the most crucial factors are the level of service and the timeliness of product delivery. Enterprises may also efficiently manage warehousing and distribution using IT.

2.1.4   Customer Service

The quality of the service provided is an important factor in determining the level of satisfaction a company's customers feel about the products or services they purchase. As a result, effective tools to evaluate customer service are extremely useful for businesses that generate all or part of their revenue through the provision of a service. The concept of quality shifts and morphs depending on the approach used to address transcendental experience, product, manufacturing, value, and user. Services can be physical goods as well as anything that is added to an intangible service or provided separately (Zulkarnain Kedah, 2015).

2.1.5   Reverse Logistics

The transfer of products or parts from the production process up through transportation to the customers is referred to as logistics. Reverse logistics is the exact opposite system in which things begin with the end of customers and they return their way to the manufacturer or the retailer for refurbishment, disposal, or otherwise.

The transfer of products or parts from the production process up through transportation to the customers is referred to as logistics. Reverse logistics is the exact opposite system in which things begin with the end of customers and they return their way to the manufacturer or the retailer for refurbishment, disposal, or otherwise. The previous study highlighted that E- commerce's well-managed reverse logistics systems will positively impact customer satisfaction (Hafez et al., 2021). Reverse logistics has become an important topic in e-commerce since it may create income while also satisfying online customers (Ezura & Jalil, 2019). Parcel returns may be triggered by significant variations between the actual product and the product description, as well as by human mistakes on the part of online sellers.

2.2   Hypotheses Statement

There are four (4) hypotheses are shown below:

H_1: There is a positive relationship between information quality and customer satisfaction on E-commerce logistics service quality in Kelantan.

H_2: There is a positive relationship between product condition and customer satisfaction on E- commerce logistics service quality in Kelantan.

H_3: There is a positive relationship between customer service and customer satisfaction on E- commerce logistics service quality in Kelantan.

H_4: There is a positive relationship between reverse logistics and customer satisfaction on E- commerce logistics service quality in Kelantan.

2.3 Research Framework

A new framework in Figure 1 is formulated based on the factors affecting customer satisfaction on e-commerce logistics service quality in Kelantan. The research model is described based on the literature review overview and interpretation since there are variables that factors affecting customer satisfaction on E- commerce Logistics Service Quality. The framework design is the description that refers to the relationship between dependent variable (Customer Satisfaction) and independent variables (information quality, product condition, customer service and reverse logistics).
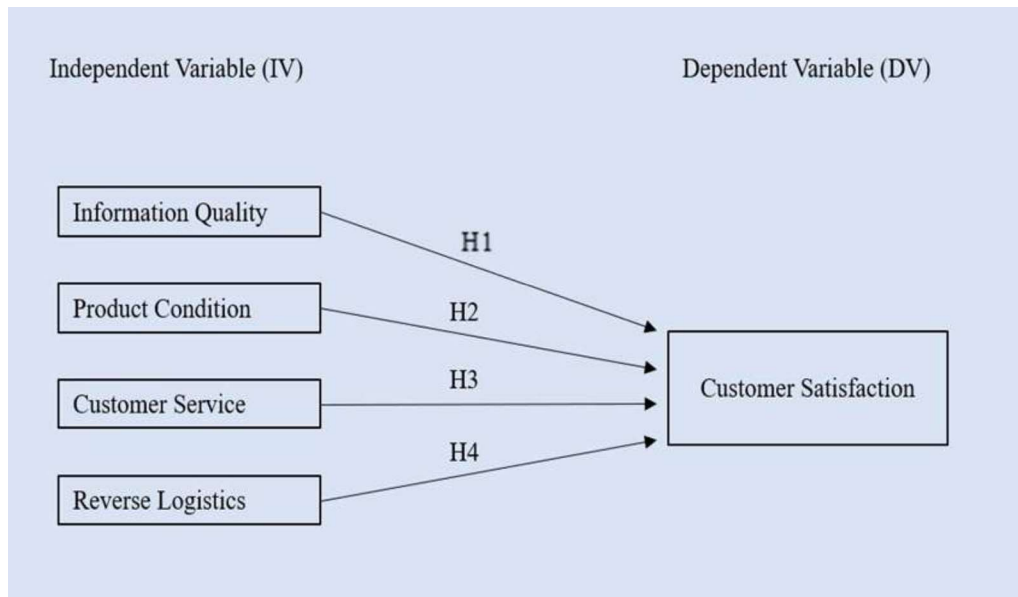
Figure 1: Research framework for the factors affecting customer satisfaction on e- commerce logistics service quality in Kelantan.

3 Materials and Methods

3.1 Introduction

This research paper will discuss the study on the factors affecting customer satisfaction on e-commerce logistics service quality in Kelantan. The information and data required from the target population can be acquired via data collection techniques. This chapter is also used to get information by making a survey and sending it to a good sample.

3.2   Research Design

The questionnaire's goal is to describe the relationship between factors influencing the quality of e-commerce logistics services and their ability to satisfy customers in Kelantan. We use statistical analysis of the data to test the hypotheses we've made and come to a conclusion. In addition, a descriptive approach is also used to strengthen the results of the study.

3.3   Data Collection Methods

The data collection method can be divided into two types which is primary data collection and secondary data collection. Data collection refers to the process of collecting information from various sources in order to solve the study problem, verify the study hypothesis, and determine the results of a study. This study is based on primary data collection, which is typical of quantitative research. Data was collected by a variety of methods, including but not limited to: surveys, physical examinations, observations, mail-in questionnaires, online databases, telephone interviews, in-person interviews, online forums, focus groups, and case studies.

3.4   Sample Size

The study's target population is people who live in the Malaysian state of Kelantan. The questionnaires will be used to perform a quantitative survey with a target audience of about 384 respondents. In this state, there are thought to be 2.001 million people living. Sampling is a crucial component of quantitative analysis because it enables the researcher to quickly gather enough data. Based on the Krejcie & Morgan3 table, a sample size of 384 respondents was obtained for this analysis. Each questionnaire is sent out separately, and responders are required to react based on their initial impressions. A well-planned survey's main objective is to gather a sample that is accurately representative of the total population. The benefit of random sampling is that it enables researchers to extract a significant amount of data from their body of knowledge. This enables scientists to emphasise how their discoveries have a significant impact on the population.

4   Results and Discussion

4.1   Introduction

SPSS, the Statistical Package for the Social Sciences software was used to analyse the data from a total of 389 respondents in this study. SPSS software allows researchers to analyse data and test hypotheses through many types of statistical tests. The data were analysed using demographic analysis, descriptive analysis, reliability test, normality test, correlation analysis, and multiple linear regression.

4.2   Demographic Profile of Respondents

The demographic profile of was analysed by using the frequency distribution in SPSS. A frequency distribution table is used to show the frequency of each category's data in an organized way. Table 4.1 illustrate the summary of the demographic characteristics profile of the respondents. Based on the table, the majority of the respondents are female, which is 239 (61.4%) while male only 150 (38.6%) in the total of 389

respondents. There are six groups participated in this survey which are 18 respondents from 19 years old and below (4.6%), 224 respondents from 20-29 years old (57.6%). 83 respondents from 30-39 years old (21.3%), 51 respondents from 40-49 years old (13.1%), 12 respondents from 50-59 years old (3.1%), and 1 respondent from 60 years old and above (0.3%). The four race groups included Malay (N=148, 38.0%), Chinese (N=80, 20.6%), Indian (N=151, 38.8%), and others (N=10, 2.6%).

Regarding the academic qualification, 38 respondents were at SPM level (9.8%), 92 respondents were at STPM or Diploma level (23.7%), 211 respondents were at Degree level (54.2%), 33 respondents were at Postgraduate (Master and Ph.D.) level (8.5%), and 15 respondents were at other levels (3.9%). The distribution of the occupation was 44 respondents worked in the government sector (11.3%), 97 respondents worked in the private sector (24.9%), 62 respondents were self-employed (15.9%), 179 respondents were students (46.0%), and the remaining 7 respondents were unemployed (1.8%). Next, the monthly income was recorded as follows, 150 respondents were below RM1000 (38.6%), 56 respondents were RM1000 to RM1999 (14.4%), 96 respondents were RM2000 to RM 2999 (24.7%), 61 respondents were RM3000 to RM3999 (15.7%), and 26 respondents were RM4000 and above (6.7%).

Respondents were asked about the frequency they visit E-commerce platforms, where 55.3% of 389 respondents recorded monthly, followed by 25.7% of respondents visiting weekly, 14.9% of respondents visiting every day, and 4.1% of respondents never visiting. Besides, there are 69.7% of 389 respondents purchase online every month, 15.4% of respondents purchase online every week, 10.0% of respondents purchase online daily, and the remaining 4.9% of respondents never purchase online. Shopee has the highest number used by 218 respondents (56.0%), followed by 67 respondents who used LAZADA (17.2%), 65 respondents who used other shopping platforms (16.7%), and 39 respondents who used Zalora (10.0%).

Table 1: Summary of Demographic Characteristic Profile

Characteristics	Frequency (N=389) (Respondents)	Percentage (%)
Gender		
Male	150	38.6
Female	239	61.4
Age		
19 years old and below	18	4.6
20-29 years old	224	57.6
30-39 years old	83	21.3
40-49 years old	51	13.1
50-59 years old	12	3.1
60 years old and above	1	0.3
Academic Qualification		
SPM	38	9.8
STPM or Diploma	92	23.7
Degree	211	54.2
Postgraduate (Master and PhD)	33	8.5
Others	15	3.9

Race		
Malay	148	38.0
Chinese	80	20.6
Indian	151	38.8
Others	10	2.6
Marital Status		
Single	233	59.9
Married	141	36.2
Divorced	8	2.1
Widow	7	1.8
Occupation		
Government Sector	44	11.3
Private Sector	97	24.9
Self-employed	62	15.9
Student	179	46.0
Unemployed	7	1.8
Monthly Income		
Below RM1000	150	38.6
RM1000-RM1999	56	14.4
RM2000-RM2999	96	24.7
RM3000-RM3999	61	15.7
RM4000 and above	26	6.7
How often you visit E-commerce platforms?		
Everyday	58	14.9
Weekly	100	25.7
Monthly	215	55.3
Never	16	4.1
How often do you purchase online?		
Everyday	39	10.0
Weekly	60	15.4
Monthly	271	69.7
Never	19	4.9
Which online shopping platform you used the most?		
Lazada	67	17.2
Zalora	39	10.0
Shopee	218	56.0
Others	65	16.7

4.3 Descriptive Statistics Analysis

Descriptive Statistics is a fairly straightforward process that can easily translate into results in a distribution of frequency, and overall averages. It also establishes standard deviation.

Table 2: Summary of Descriptive Analysis

Variables	N	Mean	Standard Deviation
Customer Satisfaction	389	4.125	0.0338
Information Quality	389	4.117	0.0338
Product Condition	389	4.171	0.0334
Customer Service	389	4.116	0.0327
Reverse Logistics	389	4.133	0.0340

Table 2 shows the summary of the descriptive analysis on the total dimensions of the variable, standard deviation was noticed to be small ranging from 0.0327 to 0.0340

which presents that the data are well dispersed and closely distributed to the mean. Whereas means seem to be more various from 4.116 to 4.171.

4.4   Reliability and Validity Test

Reliability test was calculated to analyse the scale data from questionnaires and determine whether it is reliable. The reliability test is commonly used to measures the Likert questions to identify the reliability. In the reliability test, Cronbach's alpha will use to determine the alpha value of the scale. If Cronbach's alpha value is more than 0.70 and above, it indicates an elevated level of reliability meanwhile an alpha value is lower than 0.70 are unacceptable.

Table 3: Summary of Reliability Analysis

Variables	No. of Items	Cronbach'sAlpha	Strength of Association
Customer Satisfaction	5	0.864	Very Good
InformationQuality	5	0.885	Very Good
Product Condition	5	0.899	Very Good
Customer Service	5	0.895	Very Good
Reverse Logistics	5	0.892	Very Good

Table 3 illustrates the reliability test coefficient alpha from overall reliability, which includes sending the questionnaires to 389 respondents. The Cronbach's alpha value of the independent variables (information quality, product condition, customer service, and reverse logistics) was recorded as 0.885, 0.899, 0.895, and 0.892 respectively. The dependent variable (customer satisfaction) was recorded at 0.864 for Cronbach's Alpha. Since all Cronbach's alpha values are higher than 0.7, there is a very good strength of association in the reliability test.

4.5   Spearman Correlation Analysis

In this study, since the data are not normally distributed, Spearman Correlation analysis was used to explore the degree of association between study variables for hypotheses testing. The objective of this test is to determine whether the correlation coefficient is statically and significant and to identify which hypothesis should accept and reject. According to Schobert (2018), to classify the link between variables as "moderate" or "strong". If the relationship is significant, the researchers must decide what strength of association is acceptable. The correlation is a significant if the p-value is less than 0.01 level (2-tailed).

Table 4: Spearman Correlation Analysis

		DV	IV1	IV2	IV3	IV4
DV	Correlation Coefficient	1.000	.637**	.623**	.621**	.581**
	Sig. (2-tailed)	.	.000	.000	.000	.000
	N	389	389	389	389	389
IV1	Correlation Coefficient	.637**	1.000	.808**	.751**	.676**
	Sig. (2-tailed)	.000	.	.000	.000	.000
	N	389	389	389	389	389
IV2	Correlation Coefficient	.623**	.808**	1.000	.844**	.799**
	Sig. (2-tailed)	.000	.000	.	.000	.000
	N	389	389	389	389	389
IV3	Correlation Coefficient	.621**	.751**	.844**	1.000	.820**
	Sig. (2-tailed)	.000	.000	.000	.	.000
	N	389	389	389	389	389
IV4	Correlation Coefficient	.581**	.676**	.799**	.820**	1.000
	Sig. (2-tailed)	.000	.000	.000	.000	.
	N	389	389	389	389	389

**. Correlation is significant at the 0.01 level (2-tailed).
IV1 = Information Quality   DV = Customer Satisfaction
IV2 = Product Condition
IV3 = Customer Service
IV4 = Reverse Logistics

4.6   Hypothesis Testing

4.6.1   Information Quality

H_1: There is a positive relationship between information quality and customer satisfaction on E-commerce logistics service quality in Kelantan.

Based on Table 4, the significance level, 0.000 is less than 0.01, and the Spearman correlation coefficient is recorded as highly significant. The value of the correlation coefficient is 0.637 indicating that there is a positive moderate relationship between information quality and customer satisfaction on E-commerce logistics services quality in Kelantan. So, H_1 is accepted.

4.6.2   Product Condition

H_2: There is a positive relationship between product condition and customer satisfaction on E- commerce logistics service quality in Kelantan.

Based on Table 4, the significance level, 0.000 is less than 0.01, and the Spearman correlation coefficient is recorded as highly significant. The value of the correlation coefficient is 0.623 indicating that there is a positive moderate relationship between information quality and customer satisfaction on E-commerce logistics services quality in Kelantan. So, H_2 is accepted.

4.6.3   Customer Service

H_3: There is a positive relationship between customer service and customer satisfaction on E- commerce logistics service quality in Kelantan.

Based on Table 4, the significance level, 0.000 is less than 0.01, and the Spearman correlation coefficient is recorded as highly significant. The value of the correlation coefficient is 0.621 indicating that there is a positive moderate relationship between information quality and customer satisfaction on E-commerce logistics services quality in Kelantan. So, H_3 is accepted.

4.6.4   Reverse Logistics

H_4: There is a positive relationship between customer service and customer satisfaction on E- commerce logistics service quality in Kelantan.

Based on Table 4, the significance level, 0.000 is less than 0.01, and the Spearman correlation coefficient is recorded as highly significant. The value of the correlation coefficient is 0.581 indicating that there is a positive moderate relationship between information quality and customer satisfaction on E-commerce logistics services quality in Kelantan. So, H_4 is accepted.

4.7   Multiple Linear Regression

In this research, an analysis of multiple linear regression was examined to determine the linear relationship between dependent variable and independent variables. Multiple linear regression has more specific calculations compared to simple linear regression, which it can involve more than one independent variables in evaluating the relationship between the two variables. This is because multiple linear regressions can calculate more complicated relationships and have more consideration.

Table 5 Modal Summary

Model	R	R Square	Adjusted R Square	Std. Error of theEstimate
1	.733^a	.538	.533	.45589

a. Predictors: (Constant), information quality, product condition, customer service, reverse logistics
b. Dependent Variable: Customer satisfaction on E-commerce logistics service quality in Kelantan

Table 5 labelled Model Summary provided overviews of the result of primary interest are the values of R and R Square, which are 0.733 and 0.538 respectively. This R value interpret that there is a high positive relationship between information quality, product condition, customer service, reverse logistics and customer satisfaction on E-commerce logistics services quality in Kelantan. Meanwhile, The R Square value indicates that 53.8% of the variance in customer satisfaction on E-commerce logistics services quality in Kelantan can be predicted from the variables information quality, product condition, customer service, and reverse logistics. The remaining 46.2% of the variance was explained by other factors.

Table 6: ANOVA

	Model	Sum of Squares	Df.	Mean Square	F	Sig.
1	Regression	92.799	4	23.200	111.624	.000^b
	Residual	79.809	384	.208		
	Total	172.608	388			

a.   Dependent Variable: Customer satisfaction on E-commerce logistics service quality in Kelantan
b.   Predictors: (Constant), information quality, product condition, customer service, reverse logistics

Based on the Table 6, the p-value is 0.000, which it is less than significant level of 0.05. The group of variables information quality, product condition, customer service, and reverse logistics can be used to reliably predict customer satisfaction on E-commerce logistics service quality in Kelantan (dependent variable). Therefore, this Regression effect is statically significant indicating that prediction of the dependent variable is accomplished better can be done.

Table 7: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.827	.159		5.185	.000	.513	1.141
	Information Quality	.289	.070	.289	4.147	.000	.152	.426
	Product Condition	.243	.091	.240	2.689	.007	.065	.421
	Customer Service	.134	.079	.130	1.692	.092	-.022	.290
	Reverse Logistics	.131	.060	.131	2.171	.031	.012	.249

Based on the Table 7, information quality, product condition, and reverse logistics are significant since the p-value is less than the significant value of 0.05. The customer service p- value is more than 0.05, so it is not a significant predictor for customer satisfaction on E- commerce logistics service quality in Kelantan.

Based on the Table 7, multiple linear regression model analysis result is shown. Beta coefficient explained the relative importance to the variance. Among the independent variables, information quality has ranked the highest Beta value which is 0.289. It indicates information quality is the most important variable to measure the factor of customer satisfaction on E- commerce logistics services quality in Kelantan. Besides, the Beta value ranking is followed by product condition (0.240), reverse logistics (0.131), and customer service (0.130).

Hence, the equation model for the study can be defined as:

Customer Satisfaction = 0.827 + 0.289 (Information Quality) + 0.243 (Product Condition) + 0.131 (Reverse Logistics)

The model above illustrated information quality had the greatest impact on the customer satisfaction on E-commerce logistics service quality in Kelantan. In details, every unit increase in information quality will result an increase 0.289 for each of dependent variables (customer satisfaction), at the same time other variables remained constant. Besides, for every unit increase in product condition will result in an increase 0.243 for each dependent variable (customer satisfaction) simultaneously other variables remain unchanged. Lastly, the Increasing every unit of reverse logistics will increase 0.131 unit of customer satisfaction on E-commerce logistics service quality in Kelantan.

5   Conclusion and Future Research

In order to conclude, this study aims to identify the variables that affect Kelantan's E-commerce logistics service quality and how they affect customer satisfaction. Prior research in Chapters 1–3 has primarily looked into the variables that affect customer satisfaction with the calibre of e-commerce logistics services. The result shows that the factor that influencing customer satisfaction on E-commerce logistics service quality in Kelantan have four critical relationships namely information quality, product condition, customer service and reverse logistics with dependent variable which is customer satisfaction. All the factor is having a critical relationship to the research tittle which is the factors affecting customer satisfaction on E-commerce logistics service quality in Kelantan.

For this research, the researcher uses four independent variables which are information quality, product condition, customer service and reverse logistics and one dependent variable which is customer satisfaction. In the future, another researcher can check out other articles to find more variables that are related to this one and that can help them with their research. The other variables can help the study to go further as a recommendation. To direct this study, the researcher has offered a set of easy and clear questionnaires. Moreover, there are just five questions per variable in the test. A clearer language and better explanations for each question can be used in future research to improve surveys and gain the trust of respondents. In this study, customer's satisfaction among the E-commerce logistics service quality were used by the researcher. Research on this topic can be improved by including various types of customer's satisfaction factors that are available for E-commerce logistics service quality. Consequently, the study's results can include more participants from a wide range of E-commerce logistics users in Kelantan.

Finally, the results of the review based on the preferred elements that affect customer satisfaction among e-commerce in Kelantan can be applied in a number of ways. The best services are provided for customer fulfilment through e-commerce management. Numerous online marketplaces, including Shopee, Lazada, and others, are constantly changing their offerings to better serve client needs. Customers also claim that management offers the best e- commerce implementation in terms of customer service, information quality, product condition, and reverse logistics. All E-Commerce administration must have the satisfaction of the customer as its primary goal. E-commerce is necessary in the contemporary environment to enable individuals to obtain their needs without having to travel.

6   Acknowledgements

Next, we want to show our gratefulness to Encik Abdul Aziz Bin Mat Hassan for his cordial and continuous support in providing various data and information during this research.

Our appreciation does not stop here as our Dean of Faculty Entrepreneurship and Business that given us this assignment of research. Through this research, we have gained more knowledge about business in logistics, we would like to give our special thanks and inexpressible greets to our classmates for giving us good advice, suggestion, inspiration, and support. Special thanks to our lovely family; our parents, brothers, and sisters for spiritually supporting us throughout writing this thesis. Lastly, we must mention the wonderful working environment and group commitment that every participant showed during this research has enabled us to learn and gain experiences working together as one team.

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The Effect of E-Commerce's Service Quality on Reverse Logistics towards Customer Satisfaction in Malaysia

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Abstract:
Most companies that offer reverse logistic services face obstacles due to the lack of poor e-commerce service quality. This has a great impact on customer satisfaction. Sellers find that the use of reverse logistic services is increasing day by day. While user satisfaction with the service is decreasing. The purpose of this study is to examine the effect of e-commerce service quality on reverse logistics on customer satisfaction. The objectives of this study are to determine the relationship of service team support and reverse logistic towards customer satisfaction. Second, to identify the relationship between site return friendliness and reverse logistic towards customer satisfaction. Third, to identify the relationship between return diligence and reverse logistic towards customer satisfaction. There were 115 consumers who have been involve as respondents in this research. Data which obtained from questionnaire were analysis by using SPSS. This study provided numerical data about the effect of e-commerce service quality on reverse logistics on customer satisfaction. The findings revealed that all variables in the study have positive correlation with customer satisfaction. Finally, the analysis of key findings, discussion of this study, implication and limitation of study and suggestion for future research also presented in end of the study.

Keywords: E-Commerce, Reverse Logistics, Service Quality, Customer Satisfaction

1 Introduction

Due to the spread of the COVID-19 epidemic witnessed a shift in consumer trends that encouraged businesses to explore new strategies to interact with consumers and facilitate the transaction process. This not only led to a strong adoption of e-commerce among local small and medium enterprises (SMEs), but also created a new market segment for the industry. Malaysia remains one of the main e-Commerce markets in ASEAN based on the expected growth in gross merchandise value (GMV) which was able to reach USD 11.4 billion last year which is a six percent increase from year to year. Operational definitions explain the terms used in this study, and the organisation of the research tells the reader how this study is put together. According to Risher (2020) there are three main characteristics of modern ecommerce are easy online choice exploration, quick shipping, and reliable product returns, with the final characteristic frequently taking centre stage. Product returns have recently grown to be a crucial

aspect of every company's commercial operation, largely because of the pricing and demand uncertainties they come with (Ambilkar, 2022). However, the logistics of delivery and the decreased resale value of the returned goods frequently result in large losses for businesses (Joshi et al., 2018). As a result, businesses have been forced to review and frequently modify their product return policies with an emphasis on cost reduction.

Reverse logistics involves transporting goods back to their origin after they have been delivered. It is applicable to items that are defective, extra, or those that customers have returned. With the use of reverse logistics, businesses may recover lost funds, reduce costs, and improve customer service (Tech Target, 2017). To provide more competitive after-sales services, reduce manufacturing costs, improve customer happiness, moderate storage costs, generate new sources of revenue, and recover defective parts, among other benefits, reverse logistics must be considered (Garcia, 2021). For now, reverse logistics do not work as it is supposed to which leads to dissatisfaction among customers. This is due to the lack of poor ecommerce service quality. In this proposal of study, several factors such as service team support, site return friendliness and return diligence are used to determine the quality of reverse logistics towards customer satisfaction. The objective of this study is to determine the relationship of service team support and reverse logistic towards customer satisfaction in Malaysia. Second, to identify the relationship site's return friendliness and reverse logistic towards customer satisfaction in Malaysia. Third, to identify the interrelation between return diligence and reverse logistic towards customer satisfaction in Malaysia.

2 Literature Review

2.1 Customer Satisfaction

As competition in the service sector continues to increase, the ability of companies to understand their customers and ensure that they are satisfied with the services they receive is becoming more and more evident. Customer satisfaction is currently one of the most important factors for a company's success. Customer satisfaction refers to an overall evaluation of the experience of purchasing and utilising a product or service over time (Fornell et al., 1996).

Customers frequently find value in comprehensive services that necessitate internal coordination between departments in charge of various components of the offering, such as the main good or service that makes up the offering, product documentation, etc. The e-commerce returns process is an important part of the customer experience. A seamless and easy returns process can create happy customers who are more likely to buy from your business again in the future. Conversely, a difficult or slow returns process can frustrate customers and affect their satisfaction with your business.

2.2 Service Team Support

In reverse logistics, providing service team support is one of the tasks that is beneficial and adds value. The objective is to maximise customer happiness by offering them more than just the basic services they demand. In addition to their core products, businesses and business organisations now offer additional services to customers. In reverse

logistics, these qualities of strong service team support also include agile flexibility, inventory control, cycle durations, and item return costs (Sajjanit & Rompho, 2019).

Using a reverse logistics supplier that appreciates service team support is essential for performance in addition to enhancing your experience working with a company. Providing excellent service team support in logistics may lead to long-term transportation savings, on-time delivery, peace of mind, delighted customers, and more time to focus on other elements of your organisation. On the other hand, inadequate service team support and logistical communication can lead to high prices or strained customer relationships (Lysenko-Ryba, 2017). A company that prioritises service team support should create and share a strategy for each delivery. Along the route, they should also give timely updates. The highest probability of success for each order you move is to adhere to these criteria.

2.3   Site's Return Friendliness

To begin a return, the customer must first visit the e-website tailer's or app, locate the return option, and then submit a return request. The degree to which a website or application can be used by a customer to perform a satisfactory return is defined as site return friendliness. Its scope includes three features which are ease of site returns, system accuracy returns, and real-time updates on returns. For site return ease, it's s refers to the ease with which a return product can be made via the company's mobile app or website. It has been observed that e-tailers place a high priority on websites or mobile applications that enable customers to easily find, evaluate, and purchase products, but do not optimise them sufficiently to facilitate returns.

Next is return accuracy. This method calculates how well the website's or app's return facilitation features work and how well the site provides accurate return information. Although the return page, like the search and buy pages, should be mobile-friendly and responsive. And the last factor is return diligence. Returns diligence is a measure of an e-tailer's responsiveness and dependability in terms of its return policy (Saxena et al., 2022). Moreover, returns due diligence can be referred by the degree to which an online retailer is willing to resolve customer return-related complaints, guarantee resolution, take action to resolve it, and resolve it quickly.

2.4   Return Diligence

Reverse logistics has become an important topic in e-commerce in recent years since it may create income while also satisfying online customers (Jalil, 2019). Returns diligence is a measure of an e-tailer's responsiveness and dependability in terms of its return policy (Saxena et al., 2022). Moreover, returns due diligence can be referred by the degree to which an online retailer is willing to resolve customer return-related complaints, guarantee resolution, take action to resolve it, and resolve it quickly. According to customer reports, inadequate replies to consumers' requests or complaints regarding returns, which are a sign of poor response, are indicative of an unreliable and incorrect return service, this can be seen as low dependability. There are a few impacts going to highlight through this regarding the relationship between return diligence and reverse logistics toward customer satisfaction. Specially attributes in return diligence, which is return service timeliness, return resolution speed and return service guarantee.

For return timeliness, it can be measured by measuring how quickly an online retailer processes returns and refunds after receiving a request from online customer (Saxena et al., 2022). n. The customer will be satisfied with the return services provided if they are delivered on time. Customer satisfaction is largely determined by timeliness (Samad et al., 2021). This change in consumer expectations may be brought on by the time-starved lifestyle, in which people value time as highly as they do money and seek for immediate satisfaction. Next is return resolution. This refers to the degree to which the e-tailer acts promptly or quickly in resolving return-related complaints (Saxena et al., 2022). Since returns often indicate a problem with a product, the company's ability to resolve the problem quickly may be important (Malone, 2004). For instance, depending on the demands of the customer, the location, or the quantity of returns, customer service may propose several choices for quicker return authorization to solve the problem. Thus, it can quickly solve the customer's return problem and it will improve the customer satisfaction.

And the last one is return service guarantee. return service guarantee can be definite by measures how well the online retailer is able to adhere to the guarantee that was offered to the consumer (Saxena et al., 2022). Furthermore, the extent to which the e-retailer can fulfil its commitments including performing returns as promised in the return policy. For example, if the e-policy tailer's states that a non-returnable goods can be returned if it is received in a damaged or defective condition, the e-tailer shall carry out such a return as specified in their policy and guarantee.

2.5   Research Framework
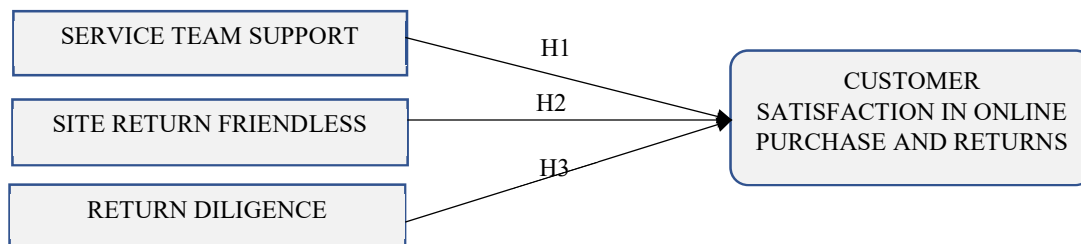
Figure 1: Theoretical Framework

The figure above shows the relationship between independent variables that are service team support, site return friendliness and return diligence and the dependent variable is customer satisfaction in online purchase and returns. Independent variables are the variables that can be manipulated by the researcher while dependent variable is the presumed effect and consequence. That is mean dependent variable can be influence by the independent variables.

3   Methodology

The study aims to investigate the effect of e-commerce's service quality on reverse logistics towards customer satisfaction in Malaysia. This study is carried out by quantitative research and 115 target respondents who have to answer the questionnaire. This study will use questionnaire to collect relevant data. The main instrument used in this study to collect variable data from respondents is the distribution of questionnaires.

Therefore, the researchers are using a non-probability sampling technique which is convenience sampling to select target respondents. This is because researchers are using unknown population and also focusing on those individuals that have made online purchase and with reverse logistics experience. This would be an advantage for researchers to carry out the survey in an easier way. The research instrument in this study was a questionnaire. All items in the questionnaire are designed in straightforward in order to prevent confusion for target respondents. Besides, the questionnaires are being prepared in two languages which are Malay and English.

The questionnaire contains five distinct components (A, B, C, D & E). Each part represents a different variable: Section A for Demographic profile of respondents, Section B is for customer satisfaction, Section C for service team support, Section D for return friendliness and Section E for return diligence. Each question was evaluating with a 6-point Likert scale. A 6-point Likert scale calculation was performed to estimate the individual's level of disagreement on a 6-point scale to quantify the outcome of the questionnaire answer scale. In this study, the researcher will utilize the agreement likert scale to evaluate the respondents' level of agreement and disagreement with statement. For instance, a Six-point Likert scale from 1 to 6 will be used for this researcher to obtain information from respondents. As a result, the questionnaire will use a likert scale with numbers 1 for Strongly Disagree, 2 for Disagree, 3 for Slightly Disagree, 4 for Slightly Agree, 5 for Agree and 6 for Strongly Agree.

In this study, IBM SPSS (Statistical Package for Social Science) be using. By using this software, it can help the researcher calculate the data in short time and can help the researcher to simplify quantitative analysis faster and easier. The statistical analyses for the study include the Descriptive analysis, Reliability test, Normality Analysis and Pearson's Correlation Analysis.

Reliability test is to identify the stability of questionnaire that can be supported for this study. Indeed, this test can identify the internal consistency of questionnaire for this study by measurement of Cronbach Alpha value. The researchers selected 30 target respondents in order to carry out this study. Based on Hair, Hult, Ringle, and Sarstedt (2016), the Cronbach Alpha value for all indicators must exceed 0.7 as consistency for this study.

Frequency analysis is to summarize demographic profile of target respondents in this study. Therefore, the researchers used frequency analysis to summary demographic profile for target respondents into frequency and percentage as well as illustrated in table form. Based on Hair et al. (2016), frequency analysis is capable for the researchers to transform data into useful information.

In addition, this study used Correlation Analysis to investigate the strength and the direction of the relationship as to how strong the relationship between the four variables in this study. Moreover, the researchers carried out paired sample t-test to compare the effect of e-commerce's service quality on reverse logistics towards customer satisfaction in Malaysia by identifying p-value.

4   Data Analysis and Findings

This section describes in detail the data obtained for the study as well as the technique utilized to analyze the data. It also addressed the study's findings. The questionnaire was issued to all respondents of e-commerce customers in Malaysia who use an online platform to buy products. This survey received 115 responses from respondent or online shopper.

4.1   Pilot Test

A pilot test is essentially a preliminary collection of information used to detect structural and instrumentation flaws, as well as to give intermediary data for the selection of a probability sample. Pre-testing refinement is carried out before to the final test. According to Johansson (2010), the sample size should be 30 or more to validate the test. Cronbach's Alpha coefficient was evaluated to check the effectiveness of the questionnaire by using 30 respondents who wanted to complete the questionnaire. The table below contains a brief case study:

Table 1: Reliability Test Coefficient Alpha from Overall Reliability (Pilot Test)

Variable	N	Number of Items	Cronbach's Alpha
Customer Satisfaction (DV)	30	4	0.909
Service Team Support (IV1)	30	4	0.906
Site Return Friendliness (1V2)	30	4	0.878
Return Diligence (IV3)	30	4	0.936

Since the variables had achieved 0.8 and above, this questionnaire is reliable to be used for this research. As a result, the reliability has proven that the respondent understood the question given in the questionnaire and the outcome is the questionnaire is accepted.

4.2   Normality Test

Table 2: Output from SPSS on Statistics of Skewness and Statistics Kurtosis

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Customer Satisfaction	115	-.712	.226	.506	.447
Service Team Support	115	-.776	.226	1.161	.447
Site's Return Friendliness	115	-.892	.226	1.772	.447
Return Diligence	115	-.921	.226	1.353	.447

A normality test is used to assess if a sample of the data falls within a conventional normal distribution (Mishra et al., 2019). Skewness and Kurtosis statistics were employed to determine the data's normality. Consequently, if the Skewness and Kurtosis values are between -1.96 and +1.96, then the distribution is considered normal.

For the Skewness of the customer satisfaction, service team support, site's return friendliness and return diligence which are -0.712, -0.776, -0.892 and -0.921 respectively. Meanwhile, for the Kurtosis values in the 4 variables are 0.506, 1.161, 1.772 and 1.353 respectively. In a conclusion, the values of Skewness and Kurtosis are indicated as a reasonably normal distribution because all the variables are in the range -1.96 and +1.96.

4.3 Demographic Profile of Respondents

There were 115 respondents was obtained from this study. The data shown in this chapter is the demographic profile of respondents, consisting of gender, age, race, marital status, occupation and state, input from respondents to identify the effect of e-commerce's service quality on reverse logistics towards customer satisfaction.

There were 45 (39.1%) of male respondents meanwhile 70 (60.9%) represented female respondents. It shows that female respondents are higher than male respondents in this research. Next, Age is divided into five categories. The first highest number of respondents are from age group 19-30 years old that is 101 (87.8%) then followed by 8 (7%) respondents from age group 31-40, 3 (2.6%) and the lowest frequency of respondents which is only 1 (0.9%) from age group 18 years old and below. The race of respondent's highest race of respondents is Malay that is 71 (61.7%). For Chinese and Indian there were 23 (20%) and 17 (14.8%) respondents respectively. And others are 4 (3.5%).

The marital status shows that 103 respondents which are equal to 89.6 % are single. Meanwhile, there are 12 respondents which equal to 10.4 % are married. Apart from that, occupation shows that the highest numbers of respondents with 90 (78.3%) are student while the second highest numbers of respondents with 12 (10.4%) are private sector. Meanwhile, there are self- employed, government sector and not working which are 8 (7%) respondents, 4 (3.5%) and 1 (0.9%) respondent respectively.

Moreover, respondents according to their state. It shows that the highest numbers of respondents with 17 (14.8%) are from Selangor while the second highest numbers of respondents with 15 (13%) are from Kuala Lumpur. The third highest is 14 (12.2%) are from Negeri Sembilan. Followed by Johor and Pahang collected the same number of respondents which is 12 (10.4). From Kedah and Kelantan also collected the same amount of respondent which is 8 (7%). Next is from Perak and Pulau Pinang are 7 (6.1%) of respondents. From Terengganu is 5 (4.3%) of respondents. From Melaka, Sabah and Sarawak recorded the same number of respondents at 3 (2.6%). And the last one is from Perlis 1 (0.9%).

Table 3: Respondent's Profile

Demography Profile	Characteristics	Frequency	Percent (%)
Gender	Male	45	39.1
	Female	70	60.9
Age	18 years old and below	1	0.9
	19-30 years old	101	87.8
	31-40 years old	8	7
	41-50 years old	3	2.6
	51-60 years old	2	1.7
Race	Chinese	23	20
	Indian	17	14.8
	Malay	71	61.7
	Others	4	3.5
Marital Status	Married	12	10.4
	Single	103	89.6

Occupation	Government Sector	4	3.5
	Private Sector	12	10.4
	Self-employed	8	7
	Student	90	78.3
	Not working	1	0.9
State	Johor	12	10.4
	Kedah	8	7
	Kelantan	8	7
	Kuala Lumpur	15	13
	Melaka	3	2.6
	Negeri Sembilan	14	12.2
	Pahang	12	10.4
	Perak	7	6.1
	Perlis	1	0.9
	Pulau Pinang	7	6.1
	Sabah	3	2.6
	Sarawak	3	2.6
	Selangor	17	14.8
	Terengganu	5	4.3
How Often You Purchase Online?	Everyday	1	0.9
	Weekly	23	20
	Monthly	89	77.4
	Never	2	1.7

4.4   Descriptive Analysis

Descriptive analytics is the process of identifying trends and correlations in current and historical data. It is frequently referred to as the most basic kind of data analysis since it highlights patterns and associations but does not delve deeper.

Table 4: The Levels of Mean

Level	Means
Strong agree	5.17 - 6
Agree	4.33 – 5.16
Slightly agree	3.50 – 4.32
Slightly Disagree	2.67 – 3.49
Disagree	1.83 – 2.66
Strongly disagree	1.00 – 1.82

The four variables evaluated in the descriptive analysis consist of the dependent variable and the independent variable. Table 5 provides the description of the mean and standard deviation. The highest mean value came from independent variable 2 based on the description, which was 4.82, where respondents agreed more for this variable, while the lowest mean value was 4.69 for each variable on DV, where respondents agreed lower with that variable in this study.

Table 5 Descriptive Statistics of DV and IVs

No.	Variables	N	Mean	Std. Deviation
1	Customer Satisfaction (DV)	115	4.6891	1.07986
2	Service Team Support (IV 1)	115	4.7478	0.94909
3	Site's Return Friendliness (IV 2)	115	4.8174	0.90037
4	Return Diligence (IV 3)	115	4.7283	0.94042

4.5   Hypothesis Testing

The Pearson Correlation Coefficient test, according to Makowski (2020), is used to measure the linear relationship between two numerical variables. As a result of the correlation coefficient test, we may assess whether certain hypotheses should be accepted or rejected. It's possible to use words like "moderate" or "strong" to describe the link between variables, according to Schober (2018). The correlation coefficient is depicted in the table below:

Table 6: Hypothesis Testing

Hypothesis	Results	Findings
H1: There is a significant relationship between Service Team Support and customer satisfaction in return logistics.	r = 0.834 p <.001	H1 is accepted
H2: There is a significant relationship between Site's Return friendliness and customer satisfaction in online purchasing and returns.	r = 0.873 p <.001	H2 is accepted
H3: There is a significant relationship between Return diligence and customer satisfaction in online purchasing and returns.	r = 0.769 p <.001	H3 is accepted

Based on the table, for the objective 1, the correlation coefficient of 0.834 suggested a strong positive correlation between service team support and customer satisfaction in return logistics. The p-value was <.001 which is less than significant level of 0.05. Meanwhile, the significant levels of both variables are .001 and it shows that both variables are highly significant. For the objective 2, the correlation coefficient of 0.873 suggested a strong positive correlation between site's return friendliness and customer satisfaction in online purchasing and returns. The p-value was <.001 which is less than significant level of 0.05. Meanwhile, the significant levels of both variables are .001 and it shows that both variables are highly significant. For the objective 3, the correlation coefficient of 0.769 suggested a strong positive correlation between return diligence and customer satisfaction in online purchasing and returns. The p-value was <.001 which is less than significant level of 0.05. Meanwhile, the significant levels of both variables are .001 and it shows that both variables are highly significant.

5   Discussion and Recommendation

5.1   Discussion

5.1.1   Service Team Support

Objective 1: To determine the relationship of Service Team Support and Reverse Logistic towards Customer Satisfaction in Malaysia.

In this study, there is a significant relationship between service team support and customer satisfaction in return logistics. Based on the analysis done, it was found that service team support has strong correlation relationship with the customer satisfaction in return logistic (r = 0.834, p < 0.001). Since the customer is the consumer, the hypothesis is approved. Therefore, the result is similar with the previous research by Kateryna Lysenko-Rybak, (2017) on service team support and return logistics, it has been agreed that the return processing is considered an extension of the product. In conclusion,

customers need help from the service team when it comes to reverse logistics. This will reduce uncertainty and ease the customers' worries. Also, the service team needs help in situations when a customer deserves to know everything.

5.1.2   Site's Return Friendliness

Objective 2: To identify the relationship between Site's Return Friendliness and Reverse Logistic towards Customer Satisfaction in Malaysia.

It shows that the site's return friendliness and customer satisfaction in online purchasing and returns has moderate positive relationship where r = 0.8.73 and p < 0.001. The finding shows that the Site's Return friendliness and customer satisfaction in online purchasing and returns are positively related. According to research that has been done by Returnlogic (2020a), has been observed that e-tailers place a high priority on websites or mobile applications that enable customers to easily find, evaluate, and purchase products.

5.1.3   Return Diligence

Objective 3: To identify the interrelation between Return Diligence and Reverse Logistic towards Customer Satisfaction in Malaysia.

The result shows the Return diligence and customer satisfaction in online purchasing and returns moderate positive correlation where r = 0.769 at p < 0.05. Based on the results, as we expect that the average customer is satisfied with the e-return service toward return diligence. Thus, the result is similar with previous research by Saxena et al. (2022), customers place a great value on how quickly resolution is delivered. Same goes to Oktaviasari and Rachma (2019), return service timeliness has a considerable beneficial influence on customer satisfaction. According to Samad et al., (2021), the customer will be satisfied with the return services provided if they are delivered on time. Customer satisfaction is largely determined by timeliness. On overall this hypothesis has proven that return diligence give positive impact on customer satisfaction in product return.

5.2   Recommendation or Suggestion for Future Research

This study has limitations, but the researchers' made recommendations for future research that may help other researchers. Researchers can examine how Malaysian e-commerce service quality affects reverse logistics and customer satisfaction. Researchers' biggest challenge is time. Questionnaires test the hypothesis that the dependent variable and independent factors are related. Because it may take time to sort through all these errors, no biased answers or same-scale responses were given. Future research may take longer to filter data and evaluate the ideal random scale. Some skip the online survey due to time constraints, while others rush. Comparable studies should use interview surveys. To help target respondents rank correctly, the researcher or student can explain each question. Qualitative methods help respondents understand and answer quickly. Researchers recommend adding variables to future research. Reverse logistics quality is assessed using three variables. Researchers can add responsibility, convenience, and remedies. Thus, accurate and relevant data can benefit future research.

6   Conclusion

Practitioners may benefit in several ways from the findings of the study. Based on the findings, it was found that there are strong significant between e-commerce service quality on reverse logistics towards customer satisfaction. This research concludes the key findings, discussions, implications, limitations and recommendations set out in Chapters 4 and 5. The Pearson Correlation Analysis showed that all variables, including Service Team Support, Site's Return Friendliness and Return Diligence had a significant positive relationship with the existence of customer satisfaction. Finally, the researcher also discussed some limitations encountered during the research, as well as some recommendations for improvement in future research. As a final word for this study, this study aims to give an overview to identify the effect of e-commerce's service quality on reverse logistics towards customer satisfaction.

7   Acknowledgements

We would like to express our sincere appreciation for the efforts of all group members who demonstrated responsibility throughout the research process. In addition, we would like to thank everyone who provided assistance and ideas in completing this research. We are grateful to University Malaysia Kelantan (UMK) for allowing us to study here. We have acquired a vast amount of knowledge and expertise that will be useful in future endeavours as a result of conducting this research. Despite the fact that we must continue to engage in online learning, UMK also provides us with access to the UMK Library Portal, which has been a great help in providing us with relevant documents and information to conduct efficient research. Our gratitude and appreciation are extended to everyone who contributed directly or indirectly to the preparation of this research. We hope that our research will benefit others through the knowledge we have gained along the way. Thank you so much.

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Acceptance of Touch'n Go RFID Usage among Highway User in Klang Valley

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Abstract:

The objective of this study is to gain a better understanding about the relationship between the acceptance of RFID using at toll and perceived usefulness (PU). Many researchers are attempting to find the Technology Acceptance Model (TAM) that impact later judgments in acceptance of RFID at toll in this field of study. The relationship between the acceptance of RFID using at toll and perceived ease of use (PEOU) is the focus of the research presented in this paper, which, according to the authors, adds value to research in the field of logistics. The behavioral intention to use (BIU) in RFID at toll also been evaluated. The paper contributes an online survey which will be undertaken. The targeted population for this survey will be the consumer from Klang Valley, Selangor. A sample size of 150 respondents will be conducted by our group and questionnaires will be distributed to the targeted sample size through the online social media platform. In this paper, we will utilize pilot test, frequency analysis, descriptive analysis, reliability analysis, normality test, and Pearson's Correlation Coefficient analysis to fulfil the research objective.

Keywords*: RFID at toll, Technology Acceptance Model (TAM), Perceived usefulness (PU), Perceived ease to use (PEOU), Behavioral intention to use (BIU)*

1   Introduction

1.1   Background of Study

RFID is a technology that belongs to the Automatic Identification and Data Capture family (AIDC). AIDC approaches require little to no human intervention because they automatically recognize objects, collect data about them, process the data and enter that data into computer systems. RFID systems accomplish this by utilizing radio waves. At its most basic, an RFID system consists of an RFID tag or smart label, an RFID reader, and an antenna. RFID tags have an integrated circuit and an antenna, which is used to transmit data to an RFID reader (also called an interrogator). The reader then converts the radio waves into a more useable type of data. Through a communications interface, the host computer system receives the data gathered from the tags and processes it.

The tag also contains the protective material that ties the parts together and protects them from various external causes. The protective substance is determined by the application. RFID-enabled employee ID badges, for example, are usually made of strong plastic, with the tag sandwiched between the layers. RFID tags are available in a variety of sizes and forms and can be passive or active. Passive tags are the most popular since they are smaller and less expensive to use. Passive tags must be "charged up" by the RFID reader before they may communicate data. Active RFID tags, as opposed to passive tags, include an internal power source, such as a battery, that allows them to send data continuously.

Smart labels, as opposed to RFID tags, combine RFID and barcode technology. They are made of an adhesive label with an RFID tag inlay placed into it, as well as a barcode or other printed data. While RFID tag programming takes longer and requires more complex equipment, smart labels may be programmed and printed instantaneously using desktop label printers. RFID technology is continuously evolving, and RFID label costs are falling in lockstep. This broadens the application of RFID technology to all industries and accelerates the development of RFID label read-write equipment. There are numerous RFID read-write devices on the market, however this has caused certain issues. For instance, the different read-write devices employ different interface communication methods, it takes longer to read RFID label material. Concrete flaw is evident, and the information stored in the reading tag was also required in the ID extra at the time.

1.2 Research Objectives

This research aims to achieve the following objectives:

1. To examine the relationship between perceived usefulness (PU) with behavioural intention to use (BIU).
2. To examine the relationship between perceived ease of use (PEOU) with behavioural intention to use (BIU).
3. To examine the relationship between behavioural intention to use (BIU) with acceptance of RFID at toll.

2 Literature Review

RFID has the potential to be a foundational technology for services and applications in which RFID tags linked to people and goods may automatically identify them. However, in order for RFID technology to be widely adopted by customers, there are issues that must be addressed. The use of RFID technology by corporations and government organizations, for example, raises worries about potential privacy violations and security risks to personal data. In response to such issues, this paper proposes and tests a theoretical model of consumer acceptance of RFID technology. The proposed model, which Technology Acceptance Model (TAM) based on current research, provides a theoretical framework for the major factors that impact whether consumers would accept RFID technology.

2.1   Acceptance of RFID Using at Toll

An information systems theory called the technology acceptance model analyses how people come to accept and employ a technology. The point at which people really utilize a system is the end-user. The attitude, or overall opinion of the technology, has an impact on behavioral intention. According to the model , when people are exposed to new technology, a variety of factors have a role in how and when they will use it. According to Fred Davis, perceived usefulness is "the extent to which a person believes that utilizing a certain technology would enhance their ability to accomplish their work". It refers to a person's perception of the technology's utility for their intended use. Perceived ease of use is "the extent to which a person perceives that utilizing a given system would be free from effort". If the technology is simple to use, then the obstacles have been removed. No one is fond of something if it is difficult to use and has a confusing interface. The NPE has a closed toll system, which bills drivers according to the distance they travel between their check-in and exit stations.

2.2   Perceived of Usefulness (PU)

Perception is not only the passive receipt of these signals, but it is also shaped by the recipient's learning, memory, expectation, and attention. Sensory input is the process of converting low-level information into higher-level information. The subsequent process links a person's concepts and expectations, restorative and selective mechanisms, and perception. Therefore, with rapid progress and being at its peak, perception is very much emphasized by many manufacturers to improve their products or services. As a result of today's sophisticated world and society's perception, especially in the field of progress and technology, the RFID system has been introduced to facilitate all matters, whether face-to-face or online. In the dictionary, usefulness, advantage, comfort, ease, and fitness are all listed under the concept of convenience. The degree to which a consumer thinks using of Touch'n Go RFID device is comfortable, free perceived usefulness, or both, is characterize as the perceived convenience of using Touch'n Go RFID technology in the TAM.

2.3   Perceived Ease of Use (PEOU)

The degree to which a person believes that using a specific information technology system will be effortless. Users are more likely to accept an application that is perceived to be easier to use than another. A component of Davis' original TAM model measured through seven self-report questionnaire items defined as "the degree to which a person believes that using a particular system would be free of effort". One of the two key variables in the model of technology acceptance. People are more likely to use a technology if they believe it will make their job easier and be simpler to use. For instance, the EZ-Pass easy toll collection system continues to be extremely popular RFID applications because they provide customers more ease. Service convenience, according to Zhang and Prybutok, raises customer satisfaction levels and influences buying behaviour. Because of this, Touch'n Go RFID based technologies are more likely to be adopted if they make consumers' lives easier.

2.4   Behavioural Intention to Use (BIU)

Behavior intention is still a topic that is widely studied across many disciplines. Defined behavioural intentions as consumers' desires to behave in certain ways to own, dispose

of, and use products or services. Behavior intention, which leads to behavioural use, becomes an exciting and important thing to study across a wide range of research topics. Meanwhile, defines intention to use as "a strong desire to achieve what one desires and will not allow anything to interfere with the achievement of these goals". According to Heijden et al., an individual's attitude toward making online transactions is directly influenced by their perception of risk. In fact, their research shows that the influence of risk on attitudes regarding online purchases is orders of magnitude bigger than the influences of perceived usefulness and convenience of use combined. But unlike the privacy risk we suggest in this work, the "perceived risk" mentioned in their research is of a more generic type. Our study significantly contributes by emphasizing privacy risk, especially as it relates to the adoption of RFID technologies.

2.5 Hypothesis Statement

Figure 1 depicts a new framework based on the acceptance of Touch'n Go RFID usage among highway users in Klang Valley. Three (3) theories are provided below.

H1: Perceived usefulness (PU) will have a relationship on Behavioural intension to use (BIU).

H2: Perceived ease of use (PEOU) will have relationship on Behavioural intension to use (BIU).

H3: Behavioural intension to use (BIU) will have a relationship on acceptance of RFID using at toll.

2.6 Research Framework

Figure 1: Research framework for the acceptance Touch'n Go RFID usage among highway users in Klang Valley
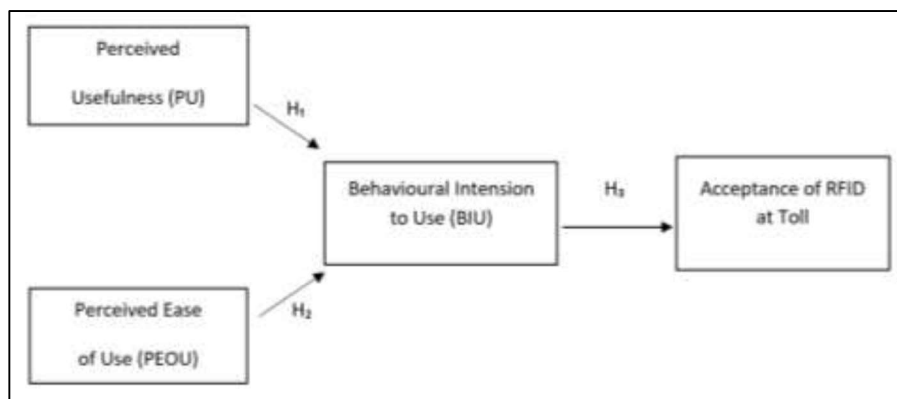
3 Methodology

The purpose of research design is to ensure that the data collected allows to answer the research problem in a clear and rational manner that can be implemented. The method of collecting data and measuring something depends on the unit of observation. Individuals, groups, nations, social phenomena can all be used as units of observation, just as units of analysis. identified speak about individual, group, organizational,

institutional, spatial, cultural and community units as units of analysis in social research are found to speak about practices, episodes, encounters, roles, relationships, groups, organizations, settlements, social worlds, lifestyles, and subculture as an appropriate unit of study.

Quantitative research methods use numbers and anything that can be measured to investigate phenomena and their relationships. To explain, predict and regulate phenomena, they are used to provide answers to questions about the relationship between measurable variables and hypotheses in quantitative tend to be well defined before collection data, making it more fixed and deductive. The questionnaire method will be used for this study. The purpose of the method is to collect more data on how the acceptance of RFID use at the toll among users in the Klang Valley, Selangor. This study aims to collect information from distributing questionnaires to residents in the Klang Valley regarding their acceptance of RFID at tolls, thus, we have chosen to use a quantitative research design for our study.

A population is a discrete group of people, animals, or things that can be identified by at least one common characteristic for the purposes of data collection and analysis in statistics and other areas of mathematics. Data from a sample is typically used to gather information about a large population. Although the researchers would not have a precise number, as long as the sample is large enough and the study is adequately controlled, they would have a good estimate. The focus of this study is on consumer regarding their acceptance of RFID using at toll, especially to the consumer that are close to the Klang Valley areas. The scope of the study is limited to 150 consumers who are in the urban area because they are already exposed to increasingly sophisticated technology, one of which is RFID at toll to facilitate or speed up a job.

A Research Instrument is a device used to collect, measure, and analyze data related to research interests. A research instrument, according to Yin, is a data collection tool. The researcher uses a questioner and an interview to collect data for this study. The researcher typically selects the Research Instrument, which is linked to the study methodology. We will use questionnaires as a research tool to collect information more easily and accurately from respondents. According to Ary, a questioner is a tool in which respondents provide written responses to questions or mark items that show their responses. In this study, the researcher collects data using a questionnaire to ensure that the responses are organized. The google form will be divided into five parts for this study, beginning with section A and ending with section E, which represent the independent variable and the dependent variable. Questions in the Google form are rated on a 5-point Likert scale, from strongly agree to strongly disagree. Our goal is to utilize a Likert scale to determine how much people agree or disagree with the statement.

The most important aspect of this study is data analysis. The data analysis collaborates with the analytical analysis and logical inference to obtain the details for data collection. Data analysis is used to evaluate patterns and relationships. The primary goal of data analysis is to investigate the significance of the data so that educated decisions are likely to be based on knowledge. Balkishan Sharma's research, data analysis transforms data into perceptions and facts and investigates the relationship between variables.

Understanding data analysis will help the researcher recognize the significance of the research process, which includes appraising hypothesis and statistical benefits related to the study's questions. Furthermore, in this study, the researcher will obtain prior data by using the computer software Statistical Programmer for Social Science (SPSS). The researcher employs SPSS to figure and calculate the data that was obtained in a shorter amount of time and to shorten the quantitative analysis in the simplest method and possible ways. SPSS will assist the researcher in deciphering the quantitative research data. The statistical analysis for this study included the pilot test, frequency analysis, descriptive analysis, reliability analysis, normality test, and Pearson's Correlation Coefficient analysis.

4 Results

4.1 Demographic Profile of Respondents

There are seven questions presented under the demographic section of respondents in this study, such as age, gender, ethnicity, academic quality, faculty, occupation sector, how often you use toll, and have you used Touch'n go RFID. This section discusses the basic analysis of the demographic profile of 150 randomly selected respondents who answered the questions via the distributed Google form. Table 1 displays the percentage and frequency of each respondent's demographic profile.

Table 1: Data of demographic profile of respondent

ITEM	N	Mean	Median	Mode	Std. Deviation
	Valid				
Age		2.31	2.00	3	.897
Gender		1.45	1.00	1	.499
Etnic		2.16	3.00	3	.920
Academic Qualification	150	2.75	3.00	3	1.281
Occupation Sector		3.62	4.00	4	.910
How Often You Use Toll?		2.13	2.00	1	1.060
Have You Ever Used Touch'n Go Rfid?		1.22	1.00	1	.416

Referring to table 1, this demographic question has a mean value for each question item. The mean value for each item is as follows. For the age item, the mean value is 2.31, followed by gender (1.45), ethnicity (2.16), academic quality (2.75), job sector (3.62), how often you use toll (2.13) and lastly, have you ever used Touch'n go RFID with its mean value (1.22). In part A, we also have two questions to qualify the respondent to answer our survey question, which is how frequently you use toll and have you used Touch'n go RFID, and the result of that question is 100% answered ever use RFID and said that they frequently use RFID toll until now.

4.2 Reliability Test

This section demonstrates the dependability of this research questionnaire, which represents the dependent variable, RFID acceptance at toll, and the independent variables, perceived usefulness, perceived ease of use, and behavioural intention of use. Cronbach's Alpha for each question was analysed and presented in this section.

Table 2: Data of reliability test

Variables	No of Item	Cronbach's Alpha	Relationship
Perceived Usefulness (IV1)	5	.897	Acceptable
Perceived Ease of Use (IV2)	6	.976	Acceptable
Behavioural Intention to Use (BIU)(IV3)	5	.983	Acceptable
Acceptance of RFID using at toll	12	.960	Acceptable

Cronbach's Alpha for dependent variables and independent variables was shown in Table 2. Cronbach's Alpha for perceived usefulness is 0.897, while perceived ease of use is 0.976, behavioural intention to use is 0.983, and acceptance of RFID using at toll is 0.960. The reliability test results show that each questionnaire is consistent, stable, and acceptable.

4.3 Normality Test

Table 3: Result of Normality Test

	Kolmogorov-Smirnov	Shapiro-Wilk
	Statistic	Statistic
Perceived Usefulness (IV1)	.222	.829
Perceived Ease of Use (IV2)	.247	.805
Behavioural Intention to Use (IV3)	.255	.811
Acceptance of RFID using at toll	.229	.812

IBM SPSS Statistic Version 26 was used to check and analyse data normality tests. In this study, the Kolmogorov-Smirnov test was used to determine data normality. A distribution can be understood in two ways: as a normal distribution or as a non-normal distribution. Any variable with a p-value less than 0.05 caused an outlier. The normality test of all variables is shown in Table 3 using the Kolmogorov-Smirnov and Shapiro-Wilk tests. These variables are normally distributed, and the null hypothesis is accepted for each variable.

4.4 Hypotheses Testing (Pearson Correlation Coefficient)

The correlation coefficient analysis results show that the independent variables, namely perceived usefulness and perceived ease of use, have a relationship with the dependent variable behavioural intention of use among Klang Valley Road RFID users. The hypothesis results summarise and present the results of the correlation between the independent variable and the dependent variable.

Table 4: Result of Correlation (Pearson Correlation Analysis)

		Consumers Acceptance	Result
Perceived Usefulness (IV1)	Pearson Correlation	.827**	Strong Agree
Perceived Ease of Use (IV2)	Pearson Correlation	.830**	Strong Agree
Behavioural Intention to Use (IV3)	Pearson Correlation	.820**	Strong Agree
Acceptance of RFID using at toll	Pearson Correlation	1	Strong Agree

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

H1: There is a significant relationship between perceived usefulness that affects the acceptance of RFID using at toll among users in the Klang Valley, Selangor.

H2: There is a significant relationship between perceived ease of use that affects the acceptance of RFID using at toll among users in the Klang Valley, Selangor.

H3: There is a significant relationship between behavioral intentions to use which affects the acceptance of RFID using at toll among users in the Klang Valley, Selangor.

5 Discussion and Conclusion

5.1 Implications of the Study

The findings of our research indicated that all the three hypotheses were accepted as all of it showed a positive significant relationship. All independent variables which were perceived usefulness, perceived ease of use and behavioural intention to use had positive relationship towards the dependent variable which was acceptance of RFID using at toll. We found that perceived usefulness, perceived ease of use and behavioural intention to use were highly significant element in boosting a person's acceptance of RFID using at toll. Smith, the study's goal was to investigate the factors that influence consumer acceptance of RFID technology. According to the findings, convenience, culture, and security are important predictors of intent to use RFID technology. This study was designed to identify potential future routes for Theory Acceptance Model that have an exogenous relationship on acceptance of RFID using at toll among consumers in Klang Valley. Furthermore, this study was created to find future behavioural intention to use directions that exogenously influence the acceptance of RFID using at toll.

5.2 Limitation of the Study

We only took around four months to do the study paper for this. Due to students' busy schedules and lack of time, we were struggled to collect data from the respondents. Additionally, responders must have reliable internet access, such as Wi-Fi or mobile data, to complete the online Google form. If access is limited to Wi-Fi or data connections, the survey's questions have not been fully addressed. The respondent would then be required to complete the questionnaire once more as a result. We always must share the survey URL to receive responses. When they have free time, most of them would reply. To make sure the goal number of respondents were reached, and the correct time were chosen for respondents to take the online survey, we continued to share the link through WhatsApp groups and private messages. Comparing the outcome to the first study, it would similarly be unpredictable.

5.3 Recommendation of the Study

Future studies should primarily concentrate on quantitative and qualitative validation of the effect of using RFID on toll toward consumers. We suggest researchers to pay more attention to consumer acceptance and find strategies for developing adequate perceived ease of use, perceived usefulness and behaviour intention. A relationship between consumer acceptance and behaviour intention abilities should also be investigated, taking into consideration both active and passive kinds of business education. Students from non-economics departments and economics departments should be included in future studies for example technical, medical and so on. Undoubtedly, a larger research sample than the one used in this article should be used for the investigation.

First off, there were only 150 consumers from Klang Valley in the research sample. So that potential discrepancies between consumer in terms of consumer acceptance and behaviour intention may be detected, future research should also include other subjects of study at various states. Second, because we did the study at the person level, it will be important to consider the national level in the future and compare other nations. Such studies are justified by the multifaceted nature of the business process. The perspective of business conditions must take into account the national environment of logistics.

5.4   Conclusion

The overall conclusion based on the research project is the relationship between the acceptance of the use of RFID at tolls among users in the Klang Valley and the intention to use (BIU). This study is about the relationship between the adoption of RFID using tolls among users in the Klang Valley and their behavioral intentions. The sample size required for this research is 150 respondents based on the table of Krejcie & Morgan (1970). There were 82 male respondents and 68 female respondents who filled out the distributed questionnaire.

Convenience, culture and security are important predictors of intent to use RFID technology. The issue of privacy was found to be insignificant in explaining RFID's future adoption. Future studies should primarily concentrate on quantitative and qualitative validation of the effect of using RFID on consumers. The acceptance of RFID using at toll and behaviour intention of consumers in Klang Valley is significantly related to one another. Results of this study can be used by logistics specialists to determine how important acceptance abilities are to consumers' behaviour intention. Since the Cronbach's Alpha coefficients value was acceptable, the reliability analysis's minimal criteria have been met from the study of the complete variable.

6   Acknowledgements

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Influence of Warehouse Management System on Product Quality in Pantai Timor Hypermarket, Kelantan

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Abstract:
This study aims to determine the influence of warehouse management system on product quality in Pantai Timor Hypermarket, Kelantan. The conceptual framework will be proposed to examine the relationship between warehouse management system and product quality in Pantai Timor Hypermarket, Kelantan. The elements of warehouse management system included Vital, Essential, Desirable (VED) Analysis, Perpetual Inventory Counting, Periodic Review System. The purposive sampling and snowball sampling were applied to gather data from respondents in Pantai Timor Hypermarket, Kelantan. The method analysis used in this study is Reliability Analysis, Descriptive Analysis, Multiple Linear Regressions, and Pearson's Correlation. The findings showed the significant relationship among VED analysis, perpetual inventory counting, and periodic review system on product quality in Pantai Timor Hypermarket, Kelantan. In additional, this research is beneficial to organizations, consumers, and researchers to discover and advance the warehouse management system on product quality.

Keywords*: Warehouse Management System (WMS), Product Quality, VED Analysis, Perpetual Inventory Counting, Periodic Review System*

1   Introduction

1.1   Background of Study

A warehouse's primary goal is to manage the movement and storage of goods in the most efficient way possible while also providing flexibility in resource management. In research from Vatumalae et al. warehouses, in their most basic form, will be transshipment areas for distribution and receiving, with products remaining in the warehouse for a short period of time (2020). Warehouse Management monitors the movement of products through the warehouse. Efficient warehouse management puts a retail chain distribution company ahead of the competition.

Warehousing management system (WMS) is a necessary approach for every warehouse regardless of whatever business is conducted. Atieh et al. (2016) stated that warehousing management system is designed to help reduce costs through effective warehouse processes. Additionally, WMS sustainability assessment is a critical task that is desperately needed, because of the diversity of sustainability and the complexity of

incorporating and measuring sustainability in WMS, policymakers face numerous challenges (Torabizadeh et al., 2020). It is impossible to overestimate the importance of devices and associated data in data warehouse. Luo et al. mentioned in their study that by 2020, approximately 200 percent more items are expected to connect to the internet and share data. The level of management decisions would not be based on erroneous and limited data as well as it would also aid in avoiding various business issues.

Pantai Timor Hypermarket has been chosen to be in this study field regarding their warehousing management system on product quality. Pantai Timor Hypermarket Sdn. Bhd. is a Malaysian company which the headquarters are located in Kota Bharu (Pantai Timor Hypermarket Sdn. Bhd. Company Profile - Malaysia | Financials & Key Executives | EMIS, n.d. 2022). It is engaged in the business of Supermarkets and Other Grocery (Except Convenience) Stores. This is convincing that the company warehouse management system has been upgraded since it was built for the past ten years to improve the product quality.

Therefore, the purpose of this study is to emphasize the Pantai Timor Hypermarket WMS on product quality, which is the dependent variable for this study. The related issue in WMS will be regarding the vital, essential and desirable (VED) analysis, perpetual inventory counting, and periodic review system, which are the independent variables for this study. The Influence of Warehouse Management System on Product Quality in Pantai Timor Hypermarket, Kelantan is the main title for this study.

1.2   Problem Statement

Smart systems are becoming increasingly important in industries, homes, colleges, and other native environments (Tejesh & Neeraja, 2018). It is extremely difficult to pinpoint a specific object. It is difficult to track and identify products or objects in large industries, hence the need for this warehouse inventory management system. It is extremely difficult to track any product in a specific time frame.

Mismanagement and oversight could result in item damage to be delivered and stock loss. Any of these problems could indicate that the warehouse management system is not maintaining accurate inventory records. According to Andiyappillai any retailers in Malaysia have made significant investments to improve inventory accuracy (2020). As a result, warehouses are now in charge of managing stock between the end-to-end supply chain and the retail business. Because of the highly competitive environment in Malaysia, retailers are constantly under pressure to improve inventory accuracy by implementing a warehouse management system-based application to streamline inventory management tracking (Vatumalae et al., 2022).

This study may provide new knowledge to companies and industries, particularly decision makers, managers, and policymakers, in providing effective actions to overcome warehouse operations issues, and can learn what benefits and applications of warehouse management system are strongly linked to identification, as well as what associated benefits of warehouse management system on product quality that are rarely examined in the warehousing literature.

1.3   Research Questions

The aim of this research is to study The Influence of Warehouse Management on Product Quality in Pantai Timor Hypermarket Kelantan. There are several research questions to examine this research:

1. How the VED analysis influences the Product Quality in Pantai Timor Hypermarket Kelantan?
2. How the Perpetual inventory counting influence the Product Quality in Pantai Timor Hypermarket Kelantan?
3. How the Periodic Review System influence the Product Quality in Pantai Timor Hypermarket Kelantan?

1.4   Research Objectives

1. Determine the influence of VED analysis on Product Quality in Pantai Timor Hypermarket Kelantan.
2. Identify the influence perpetual inventory counting of on Product Quality in Pantai Timor Hypermarket Kelantan.
3. Analyse the influence of Periodic review System on Product Quality in Pantai Timor Hypermarket Kelantan.

1.5   Scope of Study

This study is conducted among the employees who work at Pantai Timor Hypermarket Kelantan to gather the necessary data. This is because the employees will be direct person and conscious of the problems occurred in the warehouse. Due to that reason, the target respondents for this study will be the employees of Pantai Timor Hypermarket Kelantan. It is on the grounds that they may serve as a more accurate representation of the recent research. In additional to that, employees of Pantai Timor Hypermarket Kelantan possess more detailed information and experiences in warehousing management with lengthy period.

Furthermore, this study likewise to identify the influence of warehouse management on product quality in Pantai Timor Hypermarket Kelantan. The most suitable concept is Inventory Analysis and Management Approach for warehouse management which are VED analysis, perpetual inventory counting and periodic review system can determine product quality. Not only that, this study likewise will discover the correlation between the warehouse management and product quality. The interview will be processed to respondents who work at Pantai Timor Hypermarket Kelantan by the researchers in order to obtain the necessary data.

2   Literature Review

2.1   Introduction

The independent variable for this research included Vital, Essential, Desirable (VED) Analysis, Perpetual Inventory Counting, and Periodic Review Technique. However, the dependent variable will be Product Quality. This research will focus for the influence of warehouse management system on product quality in Pantai Timor Hypermarket, Kelantan.

2.2   Underpinning Theory

The underpinning theory of this study is Inventory Management Theory. According to Erkip's research, the connection between the theory developed and data in classical theory development is hierarchical; data is used to satisfy the input requirements of the models (2022). There is no assumption of a specific distribution or specific parameters representing a distribution, nor are there any restrictions on parameter values. According to the theoretical framework, inventory control is the function of forecasting, exploring requirements, setting goals, and issuing instructions. The monitoring of warehouse stocks is considered a basic supervisory function that requires more skill and experience.

This theory can be use in the research by seeing the obvious one is to apply theoretical results in a truly practical case with, for all intents and purposes, minor modifications in a major way. The really second option is to use statistical modelling to optimize for the model's decision variables, assuming sufficient data is available, which is quite significant.

2.3   Independent Variables

2.3.1   Vital, Essential, Desirable (VED) Analysis

According to Pharm, categorized the items based on the critical values and the item's shortage cost are the foundation of the Vital, Essential Desirable (VED) analysis (2010). Through the implementation of VED Analysis, the product will be categorizing according to their functional importance and value. This technique divides into three categories such as Vital, Essential, and Desirable. Vital items stand for the items without which operations would halt and to not having supplies of essential commodities is suicidal. Besides that, essential stand for the items that would be exceedingly expensive to run out of supplies. Although it would not force to close the business, the clients will expect the businessman to sale them in the shop if the businessman does not sell them. Plus, desirable stand for the items that advantageous to own but might not directly impact the business's whole performance. Even if kind of items is a slight interruption in sales and it will be minimal and simple to restock or resume.

2.3.2   Perpetual Inventory Counting

Bill Conway, Net Suite Practice Director describes "Cycle counting is a method of warehouse management techniques that businessmen use for enables to count the number of goods in a specific section of a warehouse without pausing the working operation to do a full physical inventory" The main purpose of cycle counting is used to find and fix any irregularities in inventory records in warehouse. Normally, the strategy for workers to cycle counting is frequently prepared by warehouse managers and supply chain experts. The process of cycle counting is including regular, repeated checking of preselected area in inventory. The most effective inventory management strategies are carried out exceptionally accurate the number of stock records and low transaction error rates without interfering with staff members' crucial duties (Schwarz, 2021).

2.3.3   Periodic Review Technique

Periodic review technique allows the businessmen to estimate the quantity of a product their business has on hand at predetermined, generally they will set an interval of time such as every Friday or the last day of every month. This technique is suitable for supermarket or any retail business because the stock balance can review at the end of each afternoon and orders are sent to distribution centers for delivery. According to Sherman, many businesses find that a perpetual inventory system able to complements their technology and their demand for speedy sales tracking in their warehouse (2019). Plus, it can be useful for investigate a vast number of items even spread across different warehouses.

2.4   Product Quality

According to Indeed Editorial Team, product quality describes how well a product fulfils industry standards, satisfies client's needs, and accomplishes its intended function (2022). In general, businesses examine several important elements when assessing the quality of a product, such as whether it solves a problem, functions effectively, or serves customers' needs. The purpose of product quality helps businesses retain customers, build brand recognition, and control expenses. Besides that, businesses can lower expenses associated with product returns, faults, and losses through the implementation of product quality management.

2.5   Conceptual Framework

The conceptual framework is theoretical representation of the various elements that have been determined to be crucial to the issue. The research framework as shown in Figure 1 consists of two components, which are warehouse management would be independent variable and product quality is dependent variable.
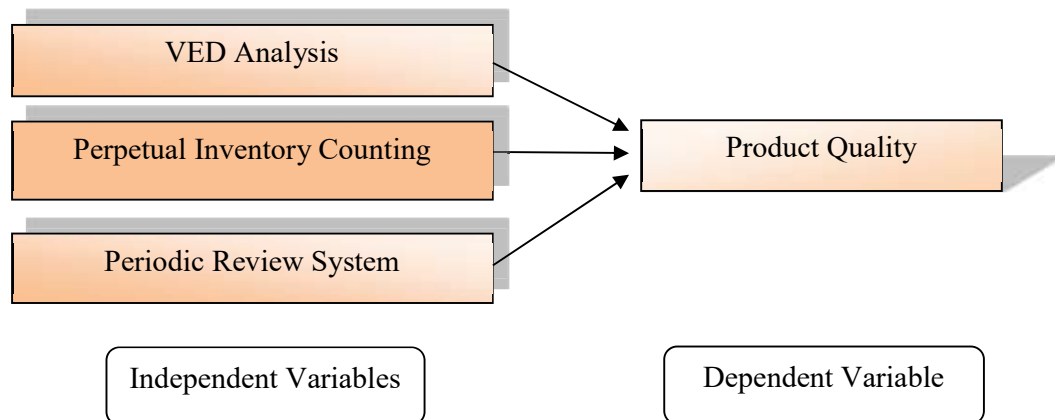
Figure 1: Conceptual framework of research variables and their Relationships

The figure 1 shows the relationship between the independent variable (warehouse management) and the dependent variable (product quality). The proposed framework is based on the influence of warehouse management on quality product in Pantai Timor Hypermarket Kelantan. The warehouse management included Vital, Essential,

Desirable (VED) analysis, perpetual inventory counting, and periodic review system can determine product quality.

3 Methodology

3.1 Research Design

This study is conducted by quantitative and qualitative research. The data was gathered by face-to-face interview with the manager of Pantai Timor Hypermarket and distribute the questionnaire to the regular staff in Pantai Timor Hypermarket Kelantan. However, the researchers also obtained the secondary data from library reference methods, websites, and social media.

3.2 Data Collection Methods

The study relied on primary data gathered through a face-to-face interview with the researcher also by distributing questionnaire to the selected department staff.

3.3 Study Population and Sample Size

The study population will be 37% from the total staff which are 100 staffs from 268 staffs in total from Pantai Timor Hypermarket. Researchers only focus on four (4) main departments that are relevant to this study. The main departments are canned food, frozen, warehouse and minimart which total of staff for these departments are 100 staffs. Researchers are able to collect in total of 100 respondents through Google Form by distributing it personally.

3.4 Research Instrument Development

The researchers will prepare the dual language questions of interview and questionnaire specifically English and Malay to facilitate understanding of respondents. The questions prepared by researchers are established based on the variables on this research which are influence of warehouse management on product quality. The question concerned with the independent variables which included Vital, Essential, Desirable (VED) analysis, perpetual inventory counting and periodic review system considering the influence the product quality. Over and above, the dependent variable is product quality which was applied to figure out the connection between warehouse management and product quality

3.5 Procedure for Data Analysis

Data analysis is a method of controlling and presenting data as well as statistical procedures. The obtained data from respondents in this study will be examined before being analyzed into useful information for this research. The Social Sciences Statistical Package (SPSS) software version 25.0 will be used for this study to analyze the data collected from the questionnaire. Hence, four types of analysis will be applied in this study which included Reliability Analysis, Descriptive Analysis, Multiple Linear Regressions, and Pearson's Correlation. Reliability analysis is examined the correlation between the scores received from various administrations of the scale, which can be conducted to identify the proportion of systematic variation in scale. Besides, the descriptive analysis in this study was utilized to analyze data gathered from the

questionnaire which is about the demographic of the respondents. Next, a regression model known as multiple linear regression utilizes a straight line to evaluate the relationship between a quantitative dependent variable and two or more independent variables. Last, Pearson's correlation is the method to determine the direction among independent variables and dependent variables.

4   Data Analysis and Findings

4.1   Demographic Profile of Respondents

Table 1: Respondents demographic profile

Respondent profile	Classification	Frequency (N = 100)	Percentage (%)
Gender	Male	53	53
	Female	47	47
Department	Canned Food	37	37
	Frozen	39	39
	Warehouse	14	14
	Minimart	10	10
Age	20 years old and below	15	15
	21 years old - 30 years old	61	61
	31 years old - 40 years old	21	21
	41 years old - 50 years old	3	3
Duration of service	1 year and below	19	19
	2 years - 5 years	68	68
	6 years - 9 years	13	13
	10 years above	0	0
Monthly income	RM1500 - RM1999	26	26
	RM2000 - RM2999	58	58
	RM3000 - RM3999	15	15
	RM4000 - RM4999	1	1

Gender, department, age, length of service, and monthly income are all listed in Table 1. There were 53% of male respondents with 53 staff members, and 47% of them are 47 female staff members who participated in this questionnaire. The majority of respondents (39% with 39 staff) were from the frozen department. The data showed the majority of the staff in Pantai Timor Hypermarket are between the ages of 21 and 30 years old, with 61% (N=61). The results showed that the average staff duration time of service is 2 years - 5 years with 68%. Furthermore, the majority of respondents' monthly income is RM2000 - RM2999 (58%).

4.2   Descriptive Statistics for Variables

The 5-point Likert scale, as shown in Table 2, was used to calculate the overall mean score for the variables as well as the standard deviation.

Table 2: The overall mean score for each variable

Part	Dimension	Mean	Std. Deviation (SD)	N
B	**Dependent Variables**	4.0750	0.50189	100
	Product Quality	4.0750	0.50189	100
C, D & E	**Independent Variables**	4.1058	0.42998	100
	VED Analysis	4.0850	0.51642	100
	Perpetual Inventory Counting	4.0725	0.49017	100
	Periodic Review System	4.1600	0.48659	100

According to Table 2, the mean score for the dependent variable, product quality, was 4.0750 for the mean and 0.50189 for the SD, while the independent variable was significantly higher than the dependent variable, which was 4.1058 for the mean and 0.42998 for the SD. The highest scoring independent variable was the periodic review system with 4.1600 for the mean score and 0.48659 for the SD, while the other two, VED analysis and perpetual inventory counting, scored 4.0850 and 4.0725 for the mean and 0.51642 and 0.49017 for the SD, respectively.

4.3 Reliability Analysis

Table 3: Reliability Coefficient for each section of questionnaire

Section	Items	No. of item	Cronbach's Alpha
B	Product quality	4	0.679
C	VED analysis	4	0.652
D	Perpetual inventory counting	4	0.643
E	Periodic review system	4	0.651

According to the Rule of Thumb in the table above, the coefficient alpha for VED analysis was a questionable value of 0.652. The perpetual inventory counting and periodic review systems both showed questionable values of 0.643 and 0.651, respectively. Furthermore, the product quality life gained 0.679, which is also a questionable coefficient value.

4.4 Pearson's Correlation

Table 4: The Pearson Correlation Results

		Product quality	VED analysis	Perpetual inventory counting	Periodic review system
Product quality	Pearson correlation	1	.647**	.558**	.615**
	Sig. (2-tailed)		.000	.000	.000
	N	100	100	100	100
VED analysis	Pearson correlation	.647**	1	.606**	.604**
	Sig. (2-tailed)	.000		.000	.000
	N	100	100	100	100
Perpetual inventory counting	Pearson correlation	.558**	.606**	1	.650**
	Sig. (2-tailed)	.000	.000		.000
	N	100	100	100	100
Periodic review system	Pearson correlation	.615**	.604**	.650**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	100	100	100	100

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

Pearson correlation is one of the correlation measures used to assess the strength of a two-variable linear relationship. The researchers used Pearson Correlation Coefficients to identify the significant relationship between the dependent variables (Product Quality Life) and the independent variables (VED analysis, perpetual counting inventory, and periodic review system).

Based on the table, the table 4 showed there is significant relationship between VED Analysis and product quality in Pantai Timor Hypermarket Kelantan (r=0.647, p=0.000) because of the significant value of VED analysis is less than alpha value which is .0.05. Plus, the result also shows there is substantial correlation between VED analysis between product quality because the Pearson correlation value, r of VED analysis is between 0.50 to 0.69.

From the table 4 shown, there is a significant relationship between perpetual inventory counting and product quality in Pantai Timor Hypermarket Kelantan (r=0.558 p=0.000). This is because the significant value of Perpetual inventory counting is less than alpha value which is 0.05. Besides that, the result also show there is substantial correlation between perpetual inventory counting between product quality because the Pearson correlation value, r of perpetual inventory counting is between 0.50 to 0.69.

Lastly, there is a significant relationship between Periodic Review Technique and product quality in Pantai Timor Hypermarket Kelantan from the table 4 shown (r=0.615, p=0.000) since the significant value of periodic review system is less than alpha value which is 0.05. However, the result also shows there is substantial correlation between periodic review technique and product quality because the Pearson correlation value, r of periodic review system is between 0.50 to 0.69.

4.5   Multiple Linear Regression

In this study, multiple linear regression was used to predict the impact of warehouse management systems on product quality life based on the independent variables VED analysis, perpetual inventory counting, and periodic review system.

Table 5: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.719	.346		2.077	.040
	Mean for IV1	.380	.093	.391	4.071	.000
	Mean for IV2	.132	.103	.129	1.277	.205
	Mean for IV3	.304	.104	.295	2.932	.004
a.	Dependent Variable: Mean for DV					

According to the results of table 4, the p-values of VED analysis (IV1) and periodic review system (IV2) were 0.000 and 0.004, respectively, where the value was less than (0.05). It suggests that VED analysis and the periodic review system had an impact on product quality life. While the p-value for perpetual inventory counting (IV3) was 0.205. Because the p-value is greater than 0.05, it is explained that this variable has no bearing on the influence of WMS on product quality life. From the Beta column shown, the highest ranked between the variables is VED analysis (IV1) which is 0.391 and the

lowest ranked between the variables is perpetual inventory counting (IV2) which is 0.129. This means VED analysis (IV1) is the most important variables to study the influence of warehouse management system on product quality in Pantai Timor Hypermarket, Kelantan.

5 Discussion

5.1 Hypothesis 1 (VED analysis)

Based on the result from table 4 showed there is significant relationship between VED Analysis and product quality in Pantai Timor Hypermarket Kelantan (r=0.647, p=0.000) because of the significant value of Hypothesis 1 is less than alpha value which is .0.05. Plus, the result also shows there is substantial correlation between VED Analysis between product qualities. According to Jeremy Levy (2022), a company getting a higher risk of running out of popular items if it does not separate and manage its inventory using VED analysis. The performance and quality product of the store would suffer as a result of this calamity, which would lower client happiness. Therefore, there is clearly showed the H1 is accepted.

5.2 Hypothesis 2 (Perpetual inventory counting)

From the table 4 shown, there is a significant relationship between Perpetual inventory counting and product quality in Pantai Timor Hypermarket Kelantan (r=0.558 p=0.000). This is because the significant value of Hypothesis 2 is less than alpha value which is 0.05. Besides that, the result also shows there is substantial correlation between perpetual inventory counting between product quality. The first step in managing product is selecting a perpetual inventory system versus a manual and time-consuming one (Rachel Hand, 2022). Thus, Rachel Hand also supported that have a positive significant between perpetual inventory counting and product life. Therefore, H2 have been accepted.

5.3 Hypothesis 3 (Periodic Review Technique)

There is a significant relationship between Periodic Review Technique and product quality in Pantai Timor Hypermarket Kelantan from the table 4 shown (r=0.615, p=0.000) since the significant value of Hypothesis 3 is less than alpha value which is 0.05. However, the result also shows there is substantial correlation between Periodic review technique and product quality. According to Lisa Schwarz, Senior Director of Global Product Marketing (2022) also stated that have the positive relationship between Periodic review technique and product quality. Therefore, the H3 in this study was supported and accepted.

6 Conclusion

In conclusion, the three independent variables which are VED analysis, perpetual inventory counting, Periodic Review Technique and dependent variable which is product life had been defined in this research. The main purpose of this research is to investigate the influence of warehouse management on product life in Pantai Timor Hypermarket Kelantan. In this research, the researchers have conducted interview with

manager and distribute the questionnaire to 100 targeted respondents. Pearson Correlation Coefficient have used to determine the relationship between dependent variable and independent variables and multiple linear regressions is used for identifying the influence of warehouse management on product life in Pantai Timor Hypermarket Kelantan.

Based on the finding of Pearson's Correlation Coefficient, the three independent variables do have significant relationship between product life in Pantai Timor Hypermarket Kelantan and also proved VED analysis, Perpetual inventory counting, Periodic Review Technique will absolutely influence on product life in Pantai Timor Hypermarket.

7   Limitations of the Study

The limitation on the study was lack of participation for respondents who were the regular staff of Pantai Timor Hypermarket Kelantan. Besides that, the time was one of the constraints faced in conducting this research by virtue of the hurried timeline for completion. Last but not least, the respondents exclusively concentrated on a few departments of the employees at Pantai Timor Hypermarket Kelantan with a sample size of only 100 respondents.

8   Recommendations for Future Research

For the reason that this study only investigated at a few departments of employees in Pantai Timor Hypermarket Kelantan, it is advice that future researchers broaden their geographic focus to include all of departments in this study. Furthermore, the future researchers will be able to discover additional variables for influence of warehouse management system on product quality in Pantai Timor Hypermarket Kelantan towards this study that would have an impact on the correlation coefficient value. In additional to that, the researchers advice conducting long term research on warehouse management system on product quality when time is allowed. As a result, it advances knowledge of the warehouse management system on product quality in Pantai Timor Hypermarket Kelantan. Last but foremost, the researchers are advised to clarify and interpret in different languages to assist the respondents who have weak English or Malay comprehension skills. This will assist in avoiding the misunderstandings and inadequate data. The researchers may profit greatly from obtaining higher quality data by being fully conscious and instruction.

9   Acknowledgements

We would like to dedicate our gratitude to the University Malaysia Kelantan, particularly the Faculty of Entrepreneurship and Business (FEB), for providing us with the opportunity to conduct this research in order to complete our studied and graduate soon. Further to that, we would like to express our gratitude to our group members who have always been dedicated to make this research project a success, no matter how difficult it has been. Without their assistance, we would not have been able to complete this research project in the allotted time. Last but not least, a heartfelt thanks to our

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The Study on Service Quality towards Students' Satisfaction on Online Bus Ticket Booking Platform

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Abstract:
The purpose of this study was to determine the relationship between the dimensions of SERVQUAL Model and students' satisfaction on online bus ticket booking platform. The dimensions of SERVQUAL Model consisting of reliability, assurance, responsiveness, and tangibles. This study exploited the service quality of the online platforms by utilizing sample represented by UMK PC campus fourth-year students' satisfactions who study at Faculty of Entrepreneurship and Business (FKP). Simple random sampling was being used in this study and questionnaire will be distributed to 265 students. The results of the study determined that reliability, responsiveness, and tangibles have significant relationships with students' satisfaction on online bus ticket booking platforms while assurance has not. This study is vital to researcher to investigate how the service quality of the online bus ticket booking platform gives an impact on student satisfaction. On top of that, by knowing how service quality gives impacts on the student satisfaction, the researcher can find out what customers expect from a E-ticketing service system of public transport and how it should be delivered by the service provider, so that the service provider can improve on its service quality to fulfil customer's expectation and increase satisfaction, thus boost sales, revenue growth and develop continuously.

Keywords: *SERQUAL, students' satisfaction, E-ticketing, online bus ticket booking platform, public transport*

1   Introduction

This study is mainly focus to study on service quality of online bus ticket booking platform that give impact on customer satisfaction. Public transport was a necessity transportation mode for the public to use in order to reduce traffic congestion, cut down the cost on transportation since taking public transport is usually cheaper than taking private vehicles for the passengers. There are two channels to purchase on the bus tickets which classified into online and offline. Online bus ticket booking platform can be explained as an E-ticketing system which aims to provide customers a user-friendly, interactive, personalized, data-driven, available anytime and anywhere services. Besides, the E-ticketing system is able to organize high volumes of customer inquiries

or requests in a centralized system. It is important for the service provider to improve on their service quality so that customer retention and attract new customer base.

As the economic and growth recovery from the pandemic, Malaysia has opened up cross state travel, thus the demand of public transport to the inter-state has increased as well. As reported by Tan (2022), Redbus, an online bus ticket booking platform in Malaysia which provides its users ticketing and route management software solutions. It has recorded a significant increase in the bus ticket sales demand, which was about 37% more than previous month during the week before Raya Haji. This can be explained as Malaysians are confident to travel inter-state by taking public transport by booking their bus ticket through online platform. Service quality is able to assist a service organization to position itself differently and gain competitive advantage for itself. (Randal, S. & Susan, E., 1987). By contrast, a service organization which with poor service quality would lead it to failure. Traveloka was a great example to illustrate the consequence that will bring to from poor service quality. Traveloka was an E-ticketing system that consumers can book bus and shuttle tickets through online. Arif et. al. stated that an initial survey that implemented in Binjai City which is in Indonesia has proved that 30% of Traveloka customers were dissatisfied with its system's purchasing procedure and policies while 23.34% of customers have not recommend others to make their booking through Traveloka since they dissatisfied with its service quality. Also, Arif et. al. mentioned that Traveloka services is user unfriendliness and does not guaranteeing customers' data security in its purchasing procedures. These proved that Traveloka has poor service quality thus influence customer satisfaction as well.

Furthermore, according to Mahida and Handayani (2019), customers has facing barriers when purchasing ticket through an E-ticketing bus transit system, Trans Semarang Bus in Indonesia as unable to check data balance due to out of network and signal, also crowded service system. The service system of Trans Semarang Bus has no technical capability to deal with the problems, thus lead trouble to customers and give impact on customer satisfaction and customer repurchase intention. These prompt researcher to study the service quality of online bus ticket booking platform in Malaysia and investigate the relationship between the service quality of the online bus ticket booking platform and customer satisfaction. According to a conceptual model which Zeithaml et. al. (1996) has used in their study, it stated that the greater service quality a company provide to its customers, the stronger the customer behavioural intention to repurchase the product or services. Otherwise, low service quality would break the relationship between customer and the company, thus lead to unfavourable customer behavioural intention. In this study, it can be explained as an online booking bus ticket platform which provide its customer low service quality will drive to unfavourable customer satisfaction, customer would switch to other platform to purchase bus ticket, take flight to inter-state travel, thus lead to image and sales of the entire platform drop due to word of mouth. Customer would not purchase bus ticket through the platform again. Low service quality eventually led to the closure of platform and unemployment of the company's employees. These all give impetus to researcher to conduct this study in order to determine the service quality of online bus ticket booking platform that give impact on customer satisfaction, thus, to make improvement and solve the issues that bring from low service quality to the platform.

This study will discuss the customers' satisfaction on service quality of online bus ticket booking platforms among UMK FKP fourth-year students who has used online bus ticket booking platform before. Moreover, the study is focus on the dimensions of service quality which consisting of reliability, assurance, responsiveness, and tangibles. As students also a target customer of the online bus ticket booking platform, it can be explained as the result of the study is beneficial to the customers since the result of the study can be a guide for them which make decision based on students' expectations or experience towards the service quality of the certain online bus ticket platform. It is owing to this study contributes to the online bus ticket platform management to improve and ensure their quality service for customers and also provide higher service quality based on customer demand and expectations.

2   Literature Review

2.1   Service Quality (SERVQUAL) Model

Service Quality (SERVQUAL) Model was the underpinning theory that applied on the study. Parasuraman et al., (1985) defined service quality as "the difference between consumers' perceptions of the services provided by a particular company and their expectations of the company providing such services". Meanwhile, service quality has been recognized as a main factor that led an organization to success by differentiates and stand out from its competitors (Ladhari, 2009). According to the previous study, an organization which provides its customers a great service quality would increase customer retention and attract new customers efficiently, thus profitability boosted, gained positive word-mouth and image of organization would enhance. (Kang & James, 2004; Yoon & Suh, 2004). SERVQUAL MODEL first classifies service quality into ten dimensions that include reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding consumers, and tangible assets. (Parasuraman et al., 1985) Afterward, they drop out the remaining dimensions to five dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy.

2.2   Student Satisfaction on Online Bus Ticket Booking Platform

As stated by Poisz and Van Grumbkow (1988), customer satisfaction was view as the discrepancy between what customer gets and their expectations. Furthermore, customer satisfaction can be illustrated as the finish point in the motivational process and also can be considered as the fulfilment response of customers. (Rust and Oliver, 1994). As stated by Education Malaysia Global Services (2020), students in higher education institutions have frequently using the transportation among the public transport users since many of them are continue their studies in other states in Malaysia. Hence, in order to facilitate the purchase of tickets, the online ticket booking platform is the choice of many students to cross-state travel. Therefore, public transport, especially buses, is the choice for many students to go to their study destinations. Students UMK in Pengkalan Chepa (PC) campus are among the direct recipients of the service provided by the online bus ticket platform. Hence, researcher decide to set UMK PC Campus FKP fourth-year students as population of the study since students' satisfaction should be taken into consideration to improve the service quality of online booking platforms due to demand for public transport among the students.

2.3 Reliability

Reliability defined as the capability of an organization to provide product or services with expected and consistency standard. Besides, it also refers to the ability of the organization to deal with customer problems and feedback, deliver customer a great performance and assistance on its services all the time (Iberahim et. al. 2016). According to Parasuraman et al., reliability means that an organization performs a service correctly the first time. Furthermore, reliability has consisted of the precise of order fulfilment, record, quote, billing that maintain the service guarantee to customers (Yang & Fang, 2004). According to the previous study that implemented by Ismail & Yunan (2016), reliability in performing daily tasks has a significant impact on customer satisfaction. Moreover, Owuamanam et al. (2022) has reported that there is positive relationship existing between reliability of e-system and customer satisfaction. Hence, a hypothesis has been created as follows:

Hypothesis 1 (H1): Reliability has positive relationship with customer satisfaction among UMK students on online bus ticket booking platform.

2.4 Assurance

Assurance can be illustrated as the ability of the organization to transmit confidence and credibility for the customers (KLOKKENGA, 2020). As stated by Kobiruzzaman (2020), assurance refer to the technical knowledge, professionalism, competency, communication, and problem-solving skills that the employees show to their customers thus prompt them to trust the entire organization. As reported by Rachman (2017) and Badara et. al. (2013), assurance of a service has positive and significant effect on customer satisfaction and customer loyalty. Besides, a survey that implemented by Murdifin et. al. (2018), has proved that assurance of services is an important indicator and get most attention of customers. Customers looking for a sufficient information of the services and expects employees serve them in a professionalism manner as well. Hence, a hypothesis of this study has illustrated as follows:

Hypothesis 2 (H2): Assurance has positive relationship with customer satisfaction among UMK students on online bus ticket booking platform.

2.5 Responsiveness

According to Pakurar et al. (2019), responsiveness is defined as the willingness that employees responding on customers request, questions, and concerns, and provide them prompt service. A study that has conduct by Uyoga (2018) has determine that responsiveness has a positive impact on customer satisfaction on the service since the study found that as high as the responsiveness of the employees to respond to the customer needs, as high the customers satisfaction. Additionally, Lin (2007) has implemented a study and the study has identified that responsiveness of a services is positively affected customer satisfaction. The study which conducted by Lin has stated customers expect to get high responsiveness services. Therefore, there will be a hypothesis for this study as follows:

Hypothesis 3 (H3): Responsiveness has positive relationship with customer satisfaction among UMK students on online bus ticket booking platform.

2.6 Tangibles

Tangibles refer to the look of physical infrastructure, communication tools and technology. Based on the study conducted by Samuel et. al., al (2016) found that tangible of a system was evaluated based on the presence of platform management and also the presence of appealing promotional pricing on E-ticketing, it proved that tangibles have significant relationships with customer satisfaction. Munusamy et al., (2010) has proved stated that tangibles have significant impact on customer satisfaction. Additionally, Sanjuq, G. (2014) has proved that there is an elevated level of significance relationship between tangible and service quality. Thus, the tangibles hypothesis is assumed as follow:

Hypothesis 4 (H4): Tangibles has positive relationship with customer satisfaction among UMK students on online bus ticket booking platform.

2.7 Theoretical Framework

This study aims to determine the relationship between service quality on online bus ticket booking platform towards students' satisfaction. Figure 1 below has illustrated the theoretical framework of this study by adapting SERVQUAL theory.
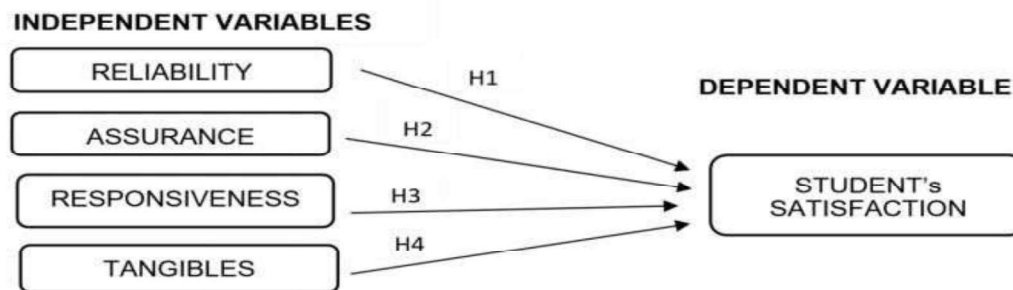
Figure 1: Theoretical Framework - Conceptual model of Service Quality
(Source: Adapted from Parasuraman et al. (1985))

3 Methodology

This study used quantitative methods to study a population that consisted of FKP year fourth students' satisfaction toward online bus ticket booking platform in UMK PC. In addition, the methodology of this study includes methods of data collection, population, sampling technique and data analysis to determine the service quality of online bus ticket platforms towards customer satisfaction among UMK PC Campus FKP fourth-year students.

Furthermore, this study also applied the scientific methods of data collecting and interpretation to the right data collecting which is Statistical Package for Social Science (SPSS), Structural Equation Modelling (SEM) and Smart PLS to measure the relationship between the service quality of online bus ticket booking platform with student UMK PC FKP fourth year student satisfaction. Therefore, these studies exploited the measurement scale developed and applied by previous researchers for measuring the relationship between these variables.

A total sample of 265 respondents was collected by distributed the set of questionnaires. This study has used 5-points Likert's scale with 4 questions each part. Generally, short scales are good because they require less time from respondents. However, noticeably short scales can affect the reliability of the instruments (Raykov 2008). The set of questionnaires is consistent with the question of independent variables and dependent variables which is using the Likert scale and multiple-choice question. Likert scale will be used in this study as it is easy to draw conclusions from quantitative data. Moreover, 5 points Likert scale will be used for respondents to specify their level of agreement from strongly Disagree to

Strongly Agree where number 1 indicates the lowest scale value representing a 'strongly disagree' view and number 5 points to the highest scale value representing a 'strongly agree' view. The respondent who answers the questionnaire is consisting of student of Faculty of Entrepreneurship and Business that were selected as the respondents were selected using random sampling methods. The sample size of 265 was selected as suggested by Krejcie (2011). Last but not least, the data collected will be analysed using the Statistical Package for Social Science (SPSS), Structural Equation Modelling (SEM), and Smart PLS. The structural equation modelling (SEM) method was used to investigate the relationships between the dimension service quality of an online bus ticket booking platform. PLS are typically used to evaluate theoretical models and determine the relationship between indicators and latent variables (measurement models) as well as relationships between constructs (structural models), even in complex models. These benefits of PLS explain why these approaches were the best fit for analysing the data in this study. PLS is also consistent with the research objectives, which is to determine the hypothesis whether supported or not.

4 Results

4.1 Characteristics of Respondents

The study first established that the majority of respondents are 23 years old with the percentage of 77.4, following by 12.5% of 22 years old, 9.4% of 24 years old and 0.8% of 25 years old. Furthermore, the study established that the majority of respondents were female with 58.5 % and the male represented 41.5% of the total respondents. In terms of race, 56.6% respondents are Malay, while 25.3% are Chinese, 15.5% are Indian, and the minority of respondents are 1.5% of Bumiputera Sabah and 1.1% of Iban. With regard to programs that the students' study, 36.2% are 30 from SAL, 19.6% of the students are from SAR, 12.8% students are from SAB, 25.7% students are from SAK, and the small percentage of respondents with 5.7% are the students from SAE. It is significant to note that the majority of students used online bas ticket booking platform 4-6 times a year the percentage of 47.9, following by 1-3 times a year with the total of 24.9% and 24.2% students used the platform 7 times above a year.

Table 1: Respondent Background

Particular	N	%
Age		
22 years old	33	12.5
23 years old	205	77.4
24 years old	25	9.4
25 years old	2	0.8
Gender		
Male	110	41.5
Female	115	58.5
Race		
Malay	150	56.6
Chinese	67	25.3
Indian	41	15.5
Bumiputera Sabah	4	1.5
Iban	3	1.1
Program		
SAL	96	36.2
SAR	52	19.6
SAB	34	12.8
SAK	68	25.7
SAE	15	5.7
Usage per year		
1-3 times	74	27.9
4-6 times	127	47.9
7 times above	64	24.2

Table 2: State of Origin of Respondent

States	N	%
Johor	31	11.7
Kedah	27	10.2
Kelantan	14	5.3
Malacca	21	7.9
Negeri Sembilan	21	7.9
Pahang	20	7.5
Penang	19	7.2
Perak	39	14.7
Perlis	11	4.2
Sabah	7	2.6
Sarawak	4	1.5
Selangor	32	12.1
Terengganu	19	7.2

The table 2 above showed the state of origin of the respondents. The study established that the majority of respondents are from Perak with 14.7%. Following by 12.1% from

Selangor. Respondents from Johor also have a big percentage of respondents with 11.7%, and Kedah with 10.2% respondents. Malacca, Negeri Sembilan and Penang, Terengganu have 7.9% and 7.2% respondents respectively. Pahang with 7.5% respondents, Kelantan with 5.3% respondents, Perlis with 4.2% respondents. Sabah and Sarawak with 2.6% and 1.5% respondents respectively.

4.2 Results of Measurement Model

The measurement model is a component of the model that investigates the relationship between latent variables and reliability measures (Sarstedt et al., 2016). Establishing a measurement model, this describes how to measure the construct using a collection of indicators.

4.2.1 Loading and Cross-Loading

The reliability of each measuring item construct was investigated and loading values greater than 0.4 are regarded as acceptable. Meanwhile, internal consistency was used to determine whether the scale used could measure the idea that needed to be measured. In general, a score of greater than 0.7 is regarded acceptable. According to Table 3 and Figure 2, all loading value achieved was greater than 0.7, indicating that no internal consistency issues were discovered during the investigation. If there is a strong correlation between the constructs, the model may experience multicollinearity issues. Although no issues with multicollinearity were discovered, the results show that the measurement items were subsequently accurate.
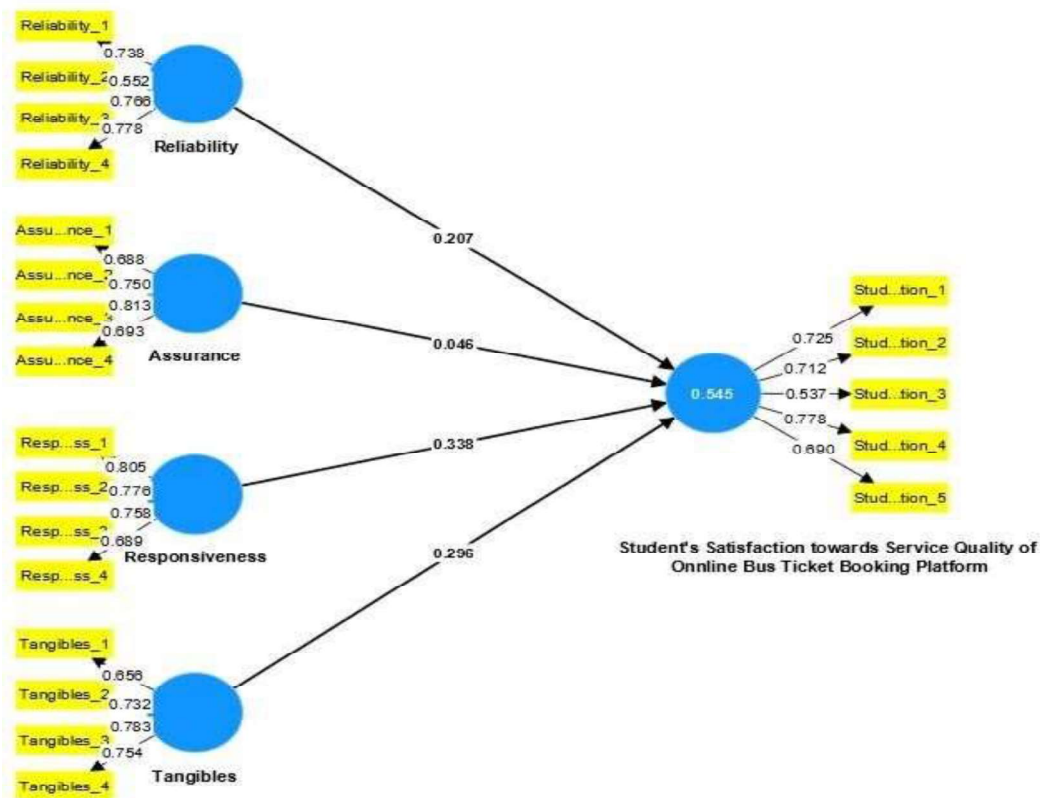
Figure 2: Structural Model (Standardized Estimates)

Table 3: Construct Validity

	Assurance	Reliability	Responsiveness	Student's Satisfaction	Tangibles
Assurance_1	0.688				
Assurance_2	0.75				
Assurance_3	0.813				
Assurance_4	0.693				
Reliability_1		0.738			
Reliability_2		0.552			
Reliability_3		0.766			
Reliability_4		0.778			
Responsiveness_1			0.805		
Responsiveness_2			0.776		
Responsiveness_3			0.758		
Responsiveness_4			0.689		
Student_Satisfaction_1				0.725	
Student_Satisfaction_2				0.712	
Student_Satisfaction_3				0.537	
Student_Satisfaction_4				0.778	
Student_Satisfaction_5				0.69	
Tangibles_1					0.656
Tangibles_2					0.732
Tangibles_3					0.783
Tangibles_4					0.754

4.2.2 Convergent Validity

Convergent validity is a test that determines whether the measurements of the items are positively correlated with the measurements of other items measuring the same construct. The factor loadings average variance extracted (AVE) and composite reliability (CR) are commonly used to determine convergent validity. Convergent validity is achieved when the AVE value is 0.5 or greater and the CR value is 0.7 or greater. As the result shown in Table 4, all factor loadings (CR and AVE) exceeded their cut-off values. It can be concluded that the convergent validity assumption for this study was reached.

Table 4: Construct Reliability and Convergent Validity

Construct	Label	Std Loading	CR	AVE
Assurance	Assurance_1	0.688	0.721	0.544
	Assurance_2	0.75		
	Assurance_3	0.813		
	Assurance_4	0.693		
Reliability	Reliability_1	0.738	0.686	0.51
	Reliability_2	0.552		
	Reliability_3	0.766		
	Reliability_4	0.778		
Responsiveness	Responsiveness_1	0.805	0.758	0.575
	Responsiveness_2	0.776		
	Responsiveness_3	0.758		
	Responsiveness_4	0.689		
Student Satisfaction	Student_Satisfaction_1	0.725	0.727	0.48
	Student_Satisfaction_2	0.712		
	Student_Satisfaction_3	0.537		
	Student_Satisfaction_4	0.778		
	Student_Satisfaction_5	0.69		
Tangibles	Tangibles_1	0.656	0.712	0.537
	Tangibles_2	0.732		
	Tangibles_3	0.783		
	Tangibles_4	0.754		

4.2.3   Discriminant Validity

Discriminant validity examines the correlations between possible overlapping constructs using the Fornell-Lacker criterion analysis to determine the extent to which items in each construct are different from items in other constructs. This tool compares each construct's AVE to the square correlation of all other constructs. To obtain discriminant validity, the established AVE value must be greater than the square correlation value. Table 5 shows the square correlation of each construct 44 and validates the discriminant validity. The result of this test also shows that there were no multicollinearity issues in the model used in this study. From these analysis results, the discriminant validity is validating due to the no multicollinearity problem from the value of construct.

Table 5: The Fornell–Larcker criterion

	Assurance	Reliability	Responsiveness	Student's Satisfaction	Tangibles
Assurance	**0.738**				
Reliability	0.571	**0.714**			
Responsiveness	0.684	0.481	**0.758**		
Student's Satisfaction	0.572	0.548	0.645	**0.693**	
Tangibles	0.596	0.514	0.591	0.63	**0.733**

4.3 Structural Model Result

The second part of the PLS analysis was focused on evaluating the structural model applied for hypothesis testing. Throughout this step, the link between the constructs was extensively studied using the path coefficient (β) and t-statistics. The hypothesis test results are shown in Table 6 which includes T-value, P-value, hypothesis supported and standardized estimates. Meanwhile, Figure 3 shows the results of the coefficient path analysis.
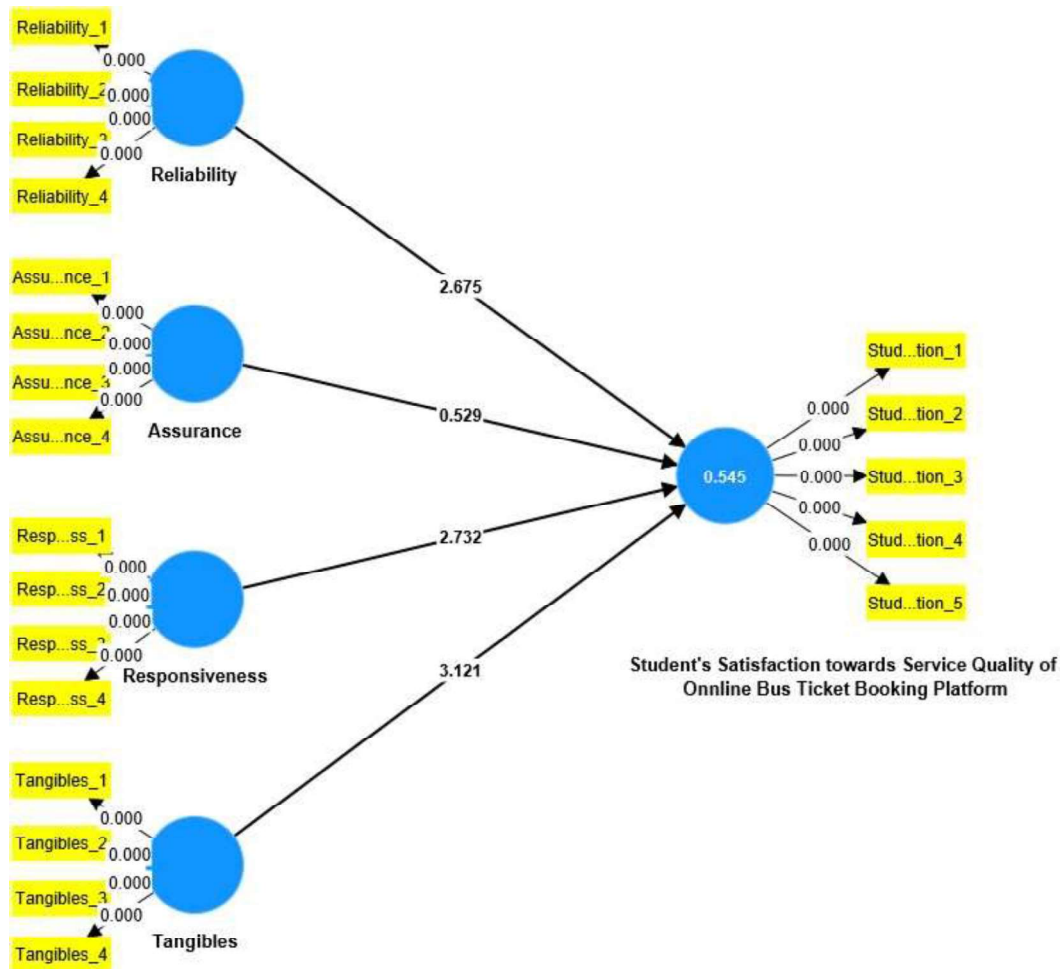
Figure 3: Structural Model (T-Value)

Table 6: The Path Coefficient and Hypotheses

Hypothesis	Regression Path	Standardized Estimates	T-Value	P-value	Hypothesis Supported
H1	Assurance -> Student's Satisfaction	0.046	0.529	0.597	No
H2	Reliability -> Student's Satisfaction	0.207	2.675	0.007	Yes
H3	Responsiveness -> Student's Satisfaction	0.338	2.732	0.006	Yes
H4	Tangibles -> Student's Satisfaction	0.296	3.121	0.002	Yes

Based on table 6 and figure 3 the path coefficient and hypothesis result analysis are shown. The results of the analysis study are shown in table 6 and found that three of four independent variables of this study had a significant positive relationship with dependent variable. Reliability, Responsiveness and Tangibles, which are the construct had positive significant relationship with students' satisfaction (dependent variables). The standardized estimates value for variables was assurance (0.046), reliability (0.207), responsiveness (0.338) and tangibles (0.296). The result has found that the hypotheses for Reliability, Responsiveness and Tangibles were supported and have positive significant relationship with students' satisfaction while assurance was not. T-value of reliability, responsiveness and tangibles were (2.675), (2.732) and (3.121) respectively. This record value of hypothesis is generally considered high. On other hand, there's no significant relationship between assurance and students' satisfaction due to the t-value was 0.529. The closer T is to 0, the more likely there isn't a significant difference. T-Values is significant only if it was higher or equal to 1.65.

5   Discussion

This study has applied SERVQUAL Model to determine the relationship between dimensions of the model (reliability, assurance, responsiveness, and tangibles) and students' satisfaction. Based on the study, researchers have been practiced Reliability Test, Descriptive Analysis, Construct Reliability and Convergent Validity, Discriminant Validity, Structural Model Result by exploited SPSS 26.0 and SmartPLS4. Structural Equation Model (SEM) was the research method that applied on this study and to identify the objectives.

It is worth noting that the result has proved that 3 hypotheses made early in the study were supported while 1 hypothesis was not. In details, hypothesis relationships of standardized estimates of reliability (0.207), responsiveness (0.338) and tangibles (0.296) recorded high value of standardized estimates while assurance has low value in standardized estimates (0.046) and its P-value less than the level significant. Meanwhile, the T-value of reliability (2.675), responsiveness (2.732) and tangibles (3.121) were considered as great, and the T-value of assurance is lower than usual (0.529). Generally, any t-value greater than +2 or less than - 2 is acceptable. To be specific, the higher the t-value, the better the confidence researchers have in the coefficient as a predictor. Low t-values mean low reliability of the predictive power of that coefficient. Indeed, these meant by reliability, responsiveness and tangibles have significant relationship with students' satisfaction towards the service quality of online bus ticket booking platform, but assurance has no relationship with it. The construct of reliability, responsiveness and tangibles verified that these dimensions were playing a vital role and give significant impact on students' satisfaction.

According to the result of this study, hypothesis for assurance was rejected. This means that assurance was not given significant impact on students' satisfaction. This result may be influence by a few factors which consisting of the environment, sample size was too small to detect the effect and more. This can be explained as assurance of the platform provided would not influence the students' satisfaction significantly among UMK PC campus fourth-year students, but it might have significant impact on students' or customers' satisfaction in other scope, area or countries. In other words, reliability,

responsiveness, and tangibles with students' satisfaction were strong and significant, these could be explained as the online bus ticket booking platform is necessary to provide the service which are reliable, responsive and tangibles to ensure and maximize the customers' satisfaction. Although assurance has no significant impact to students' satisfaction in the result of this study, but the platforms is still need to provide services which is assured to customers in order to increase the customer retention and word-of-mouth as well.

6   Conclusion and Recommendations

This study is to determine the acceptance of student's satisfaction towards service quality on online bus ticket booking platform. The service quality of online bus ticket booking platform contributed to the student's satisfaction based on the level of service quality provided by the online bus ticket booking platform. In this study, the service quality (SERVQUAL MODEL) is divided into four dimensions which are responsiveness, tangibles, assurance, and reliability. The research framework was developed and supported according to literature that had been viewed from the previous article and journal. The theoretical framework used in this study found that the hypothesis was supported by past studies and previous studies. Most of the articles and journal reviewed by researchers are related to the study conduct and also for future studies. In this study, the data collected from the result of data analysis based on the questionnaire that has been distributed to 265 respondents which are students who are from UMK PC Campus FKP fourth year that have experience used the online bus ticket booking platform before. In this study, data were collected using the primary data and quantitative method. Thus, the data were collected and exploited SPSS software version 26.0 and SmartPLS4 that supported descriptive statistics, reliability analysis and hypothesis testing to implement analysis. The results of analysis are aimed to determine the relationship between the four of dimension service quality with student satisfaction toward online bus ticket booking platform. Three hypotheses were accepted, including responsiveness, reliability, and tangibles while the hypothesis for assurance was rejected.

There are several limitations on this study related to the sample of research and the research design. This study is focused on a specific population which is students from UMK in Pengkalan Chepa (PC) students. A sample of 265 respondents from fourth year students of Faculty of Entrepreneurship and Business were selected as the respondents for this study might not be representatives of the total students that study at UMK in PC. The recommendation for the future study is to widen the sample to make it more representatives and to increase the credibility of the results and thus obtain a more exact outcome in the data analysis of students' satisfaction towards an online bas booking platform.

Moreover, for methodological limitation in this study, the questionnaires are distributed to several WhatsApp group. Although this method was time-and cost-saving for data collection, but its coverage bias is limited (bias due to sample choosing not to answer properly-or not accessing the Google Form). One of other recommendation to minimize the problem in future research would be survey interviews, although it is time- and cost consuming. Therefore, whenever possible, in person surveys or survey interview should

be given priority in future research rather than online questionnaires. In addition, the limitation is difficulty controlling all variables. The difficulty of controlling all variables that could influence the central construct of the study. It may be that there are other variables that influence students' satisfaction on online bus ticket booking platform that were not covered in this study. In this light, the recommendation is must care in hypothesizing and testing potential variables that could affecting students' satisfaction.

Furthermore, this study applied a 5-point Likert scale with four questions per section. Short scales are generally preferable because they require less time from respondents. However, noticeably short scales can have an impact on instrument reliability (Raykov 2008). The Cronbach's Alpha tends to decrease as the researchers remove items from the scale. As recommendation, future study should prioritise scales with enough items to keep the alpha within an acceptable range in this context. Last but not least, this study used SERVQUAL model that may have shortcomings because of level satisfaction vary from one to another. It is also difficult to evaluate whether the respondents are answering truthfully if using one method. The recommendation should use multiple methods for verification to overcome shortfalls in measuring 2 in 1 such as SERVPERF model. This method is a research scale that developed to help measure more clearly the elements of quality of service.

7 Acknowledgement

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The Influence of Online Food Delivery Apps as Third-Party Logistics on the Operations of Restaurants in Kelantan

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Abstract:

The entire landscape of the restaurant business has entirely evolved as a result of technological advancement. It has increased the use of online food delivery services and allowed us to compare rates, order food from the convenience of our homes and utilize these services easily. Food delivery apps have also improved their services by giving their customers more options which is delivery times and delivery methods such as 'contactless delivery.' Some food delivery services even provide specialized options for specific dietary requirements. From this research paper, we would able to understand the importance of the third-party logistics on the operations of restaurant business while this study also will identify the influence of the delivery app on the inventory management on the operation of the restaurant business. This research also will list out some issues of the delivery app that faced by the restaurant owner which helps the restaurant to upgrade their operation system to provide a better customer service to the customers that automatically increase their profits.

Keywords*: Entire landscape, Technological advancement, Online food delivery, Contactless delivery, Third-party logistics, Inventory management*

1 Introduction

1.1 Background of Study

Customers could order food delivery from restaurants via phone or in person by putting prior orders with the eateries before the digital delivery app revolution. Food delivery apps have also improved their services by giving their customers more options such as delivery times and delivery methods such as 'contactless delivery'. Some food delivery services even provide specialized options for specific dietary requirements. The landscape of food delivery apps was further boosted during the movement control order (MCO) period as more restaurants jumped on board the network (Oppotus, 2022).

In Malaysia, there are two types of distributors who provide online food delivery (OFD) services through the food delivery application. Retailers in the first category include McDonald's Malaysia, Kentucky Fried Chicken (KFC) Malaysia, and Pizza Hut Malaysia. The second category includes numerous restaurant intermediaries that provide

delivery services to a wide range of eateries, such as Foodpanda, Grab, and Halo. These two types of OFD applications are combined to form a functional food and beverage service. Foodpanda, owned by the Berlin-based company Delivery Hero SE, was the most popular food delivery app among Malaysians aged 25 to 34 (Zolkiffli et al., 2021).

Much of the rise in popularity of food delivery can be attributed to Malaysia's higher Internet penetration rate and the purchase of mobile phones, both of which are critical to the success of food delivery services where food must be ordered via a mobile phone or computer. OFD is a website or application that allows users to order and receive food from various restaurants. It handles order, payment, and process monitoring but not order preparation. Customers typically search for a favourite restaurant, choose a product from a menu, and enter their delivery address (Zolkiffli et al., 2021). Following the increase in demand, Foodpanda has registered over 18,000 eateries, while GrabFood has 5,000 restaurants, with the number growing since the outbreak in 2019. As a result, the study focused on OFD providers in Kelantan to determine the influence of OFD applications on restaurant operation (Ray et al., 2019).

1.2   Problem Statement

The need for online food delivery services has increased nowadays. This is evident from the rise in the usage of meal delivery services like Foodpanda and GrabFood in the Kelantan area. The community has chosen online food delivery services to make it simpler for them to buy the food they want without having to leave home or the workplace. As a result, a poorly functioning online food delivery service will have a negative impact and interfere with Kelantan's restaurant industry.

All online food delivery businesses must create and maintain a specific application for a food delivery system. Poorly designed and difficult-to-use food delivery services will have a detrimental impact on the restaurants that work together with them. This is because clients who utilize the food delivery apps will place fewer food orders. Due to this, it will be challenging for the restaurant to maintain regular business operations and find customers (Techtic, 2018).

The cost of online food delivery services is one of the key problems. After adding food to the cart and adding delivery fees, the estimated price of the food is fairly close to the actual pricing. For resolving problems with online food delivery applications, it is important to continuously learn and update the app. When the pricing established by the Kelantan online food delivery application is not reasonable for the consumer, the customer will either cancel the transaction or lose interest in using the online food delivery application to place future orders. This will be extremely detrimental to Kelantan's restaurant industry (Kohar & Jakhar, 2021).

There are numerous instances in which the rider picks up multiple items in a row from a predetermined place for online food delivery, and after all, pickups have been accomplished, the same rider must transport the item to the appropriate delivery location (Kohar & Jakhar, 2021). Customers who utilize the online food delivery application would feel unsatisfied and upset with the service offered if the online food delivery rider fails to deliver the item on time. To enable the movement of food delivery

riders to take orders and deliver the order on time to clients throughout Kelantan, a flexible online food delivery application system is required.

A typical arrangement for this kind of issue is perfectly suited to online food ordering services, which are expanding quickly, particularly in today's society when people prefer to buy food online rather than go out to dine in a restaurant. Multi Pickup and Delivery Problems with Time Windows are issues where some such delivery requests must be fulfilled within a specific time window (Kohar & Jakhar, 2021). The operations of restaurants in Kelantan will therefore be negatively impacted by online food delivery services that offer subpar service.

Inventory control of perishable goods like food is crucial in the restaurant industry. This is due to the limited shelf life of perishable goods. The usage of perishable goods after their expiration date is not advised. The management of the perishable goods inventory in the restaurant sector has become more challenging. The market and application for online food delivery are still developing and confront some difficulties (Das & Ghose, 2019). As a result, restaurant inventory management for perishable goods in Kelantan is impacted by fluctuations in supply and demand in online food delivery applications. The restaurant sector has suffered because of this issue. Therefore, we conduct this research to analyse and understand the influence of online food delivery apps on the operations of restaurants in Kelantan.

1.3   Research Objectives

There are five objectives of this research:

1. To investigate the impact of third-party logistics i.e. out of stock food waste and high delivery price on inventory management depends on online food delivery apps adapted by Kelantenese.
2. To explore the impact of third-party logistics i.e. out of stock food waste and high delivery price on significant issues depends on online food delivery apps adapted by Kelantenese.
3. To examine the impact of third-party logistics i.e. out of stock food waste and high delivery price on operations of restaurants depends on online food delivery apps adapted by Kelantenese.
4. To study relationship between inventory management and operations of restaurants depends on online food delivery apps adapted by Kelantanese.
5. To study relationship between significant issues and operations of restaurants depends on online food delivery apps adapted by Kelantanese.

2   Literature Review

2.1   Underpinning Theory

Online Food Ordering and Delivery Service is an emerging business in today's world. Like e- commerce business these food-tech companies totally depend on technological platforms. Technological Acceptance Model (TAM) is developed to study the acceptance of new technology from owners and user's point of view (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989). TAM has been used by many researchers to study

the acceptance of new technologies. In e-shopping perceived information, service quality and system have a positive impact on usefulness and ease of use (Hsu, Wu, Chen and Chang 2012).
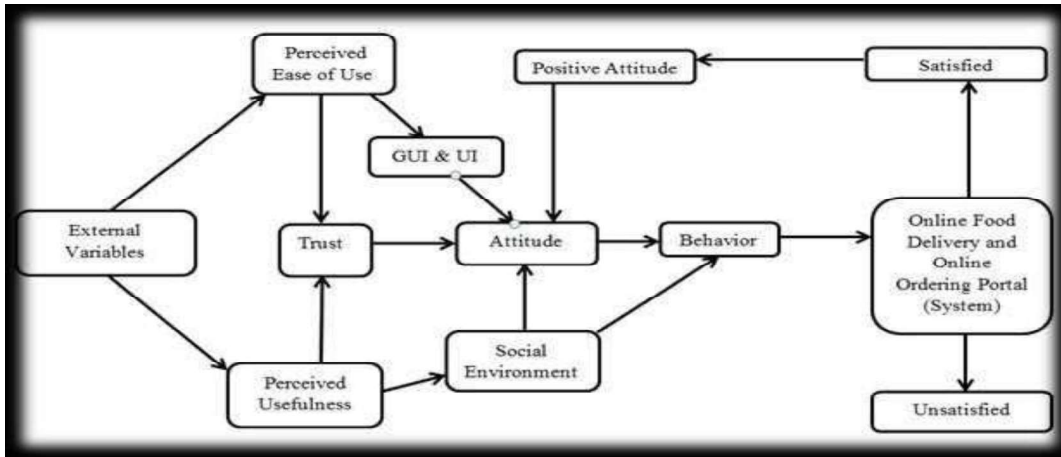
Figure 1: Technology Acceptance Model (TAM) for online food ordering and delivery system

Above figure shows extended TAM for online food ordering and delivery system by Salunkhe et al., (2018). The extended TAM in previous research explains about adopting online food delivery system from customer perspective. While exploring the previous literature many factors found are trust that has a direct correlation with ease of use. Using the system, the first thing he will encounter is the graphical interface. Online shoppers see a high level of information about products and services. With the help of graphics how information about restaurants, food and reviews are posted is important.

Therefore, this study will use this theory which is the Technology Acceptance Model (TAM) because this study is related to online food delivery and how the convenience of this online food delivery service can affect the operation of a restaurant. However, in food delivery services, delivery agents bring tangible products (food) delivered to customers' doorsteps and food quality is an important aspect of building a more satisfying restaurant operation.

2.2   Hypothesis Statement

H1: There is a significant relationship between the impact of third-party logistics i.e. out of stock, food waste and high delivery price on inventory management depends on online food delivery apps adapted by Kelantenese.

H2: There is a significant relationship between the impact of third-party logistics i.e. out of stock, food waste and high delivery price on significant issues depends on online food delivery apps adapted by Kelantenese.

H3: There is a relationship between the impacts of third-party logistics i.e. out of stock, food waste and high delivery price on operations of restaurants depends on online food delivery apps adapted by Kelantenese.

H4: There is a significant relationship between inventory management and operations of restaurants depend on online food delivery apps adapted by Kelantanese.

H5: There is a significant relationship between significant issues and operations of restaurants depend on online food delivery apps adapted by Kelantanese.

2.3   Conceptual Framework
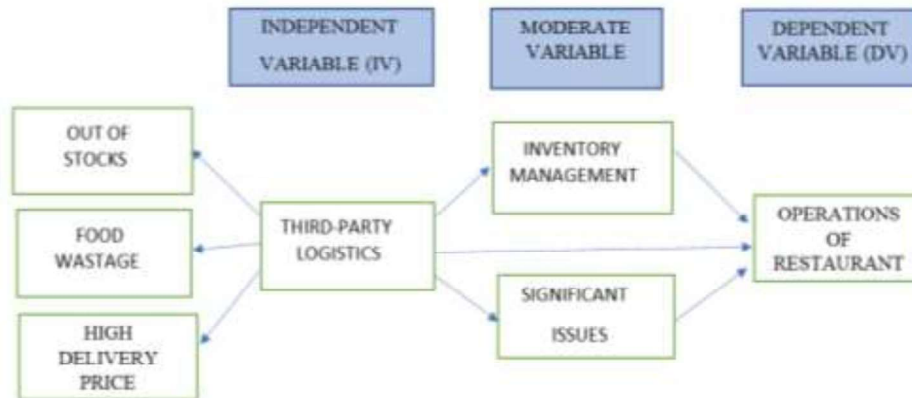
Figure 2: The conceptual framework on the influence of online food delivery apps on the operations of restaurants in Kelantan

3   Methodology

3.1   Research Design

The term "research design" describes to the general method used to logically and cogently combine the several of the study elements. This is done to make sure that the problem of the study is adequately addressed. The research study is the planning process for data collecting, measurement and evaluation. According to Kothari (2004), the core of each study is the research design while it is also a technique of investigation created with the intention of obtaining answers to some specific research questions and also helps us to achieve our research objectives. The objective of the research design is to offer plan that enables accurate analysis of the causal connection among dependent and independent variables.

The study requires to acquire data on the importance of the third-party logistics and the effect of food delivery apps on inventory management while issues that faced by the restaurant's owner from online food delivery services to fulfil the research objectives. Since a result, a series of specially created questionnaires will provide to the respondents in order to gather data directly from the restaurant owners in Kelantan that uses online food delivery services and delivery riders in Kelantan. The questionnaires will be utilized to gather trustworthy for the quantitative approach.

3.2   Data Collection Methods

Data collection is the process of gathering, calculating and evaluating relevant insights for study using established and recognised procedures. Based on the data collected,

research may assess their hypothesis. Despite of the research topic, the first and most crucial step is typically data collecting. Besides that, primary information was used to conduct thus study. Primary data collection is the procedure of acquiring data through surveys, interviews or experiments. In addition, this study will make use of an online questionnaire that was created using Google forms. The number of populations to help compensate this study is 250 respondents.

In another hand, the respondents for this study are those restaurant's owners and workers, who are using online food delivery app in their business. They were chosen for this study they are qualified to participate as respondents and have the necessary experience of using online food delivery app in their restaurants. Additionally, the respondents for this study can be located by spreading Google forms through walk-in and websites. The respondents will be approached by giving and sending Google forms personally through walk-in and websites and be asked whether they can complete the questionnaire or not. The data will be collected during working days and the estimated during is about 3 to 4 weeks.

3.3   Sampling Techniques

According to Kumar (2018) claims that sampling technique that enables researchers to extract knowledge about a community from the results of a sample of the population without having to look at every single person. In addition to decreasing the cost and workload, reducing the number of research participants also makes it simpler to collect high-quality data. Probability sampling and non-probability sampling are the two categories of sampling procedures. The basis of probability (random) sampling is a complete sampling frame of all eligible individuals from whom to select your sample. The results of the study will be more generalizable because there will be larger likelihood that all eligible people will be chosen for the sample. Besides that, compared to probability sample techniques, non-probability sampling techniques are more time and money consuming. Additionally, some people will be eliminated since non-probability (non-random) sampling does not begin with a full sample frame. On the other hand, non- probability sampling is less expensive and easier to use, making it appropriate for exploratory research and hypothesis generation.

In this study, probability sampling was employed to make the selections. The best sampling technique uses probability which also ensure that the study's findings may be applied to the intended population (Aruna Nigam, 2013). In another hand, by probability sampling, we imply that there is an equal chance that every member of the population will be chosen for the study. Probability samplings are simple random sampling, systematic random sampling, stratified random sampling, cluster sampling, multiphase sampling and multistage sampling. In this study, simple random sampling will be utilized. This is because each respondent has a same chance of being chosen from the population to make up the sample under this methodology and data will be chosen using the random number table or computer generated by list of random number.

4   Data Analysis and Findings

4.1   Descriptive Analysis

This section discussed the descriptive statistics of this research's dependent variable which is operations of restaurants and independent variables which are from third party logistics consists of out of stock, food wastage and high delivery price. In this section, mean and standard deviation of every variable as a whole and question for each variable in each section of the questionnaire starting section B were analyses and presented.

Table 1: Descriptive Statistics of Dependent Variable and Independent Variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IV	30	4.20	21.00	16.1000	5.14312
DV	30	4.20	21.00	15.5867	5.24514
Valid N (listwise)	30				

Table 1 showed the overall descriptive statistics of dependent variable and independent variables. For the independent variable, from third party logistics consists of out of stock, food wastage and high delivery price has the value of mean indicated at 16.10. However, the value of mean for dependent variable which is operations of restaurants was recorded at 15.59. Besides, the standard deviation is indicated how close the data is to the mean. Based on table 4.1.1, the standard deviation for independent variable is 5.14. However, the standard deviation for dependent variable which is operations of restaurants represented at 5.25.

Table 2: Descriptive Statistics of Operations of Restaurants

Descriptive Statistics

	N	Mean	Std. Deviation
1) The website of online food delivery app should be well organized and all the necessary information should be available / Laman web aplikasi penghantaran makanan dalam talian haruslah teratur dan semua maklumat yang diperlukan harus tersedia.	30	3.77	1.431
2) Strong distribution channel which ensures timely delivery of selected food makes me loyal to the online food delivery apps / Saluran pengedaran yang kukuh yang memastikan penghantaran makanan terpilih tepat pada masanya menjadikan saya setia kepada aplikasi penghantaran makanan dalam talian.	30	3.67	1.269
3) Online food delivery application helps me a lot in ensuring efficient management of food orders and improving punctuality / Permohonan penghantaran makanan dalam talian sangat membantu anda dalam memastikan pengurusan pesanan makanan dengan cekap dan meningkatkan ketepatan masa.	30	3.60	1.354
4) The online food delivery application helps the business to increase sale and get more customers / Aplikasi penghantaran makanan membantu perniagaan anda meningkatkan jualan dan mendapatkan lebih ramai pelanggan.	30	3.80	1.324
5) Controlling the food preparation process by ensuring that workers are in a clean condition to maintain food quality when preparing ordered food / Mengawal proses penyediaan makanan dengan memastikan pekerja dalam keadaan bersih bagi menjaga kualiti makanan ketika menyediakan makanan yang dipesan.	30	3.77	1.223
Valid N (listwise)	30		

Table 2 showed the descriptive statistics of operations of restaurants with the five statements of dependent variable. The statement of "The online food delivery application helps the business to increase sale and get more customers." has the highest mean value of 3.80 and standard deviation of 1.324. While the statement of "Online food delivery application helps me a lot in ensuring efficient management of food orders and improving punctuality." has the lowest mean value of 3.60 and standard deviation value of 1.354. Therefore, the majority of the respondents agree that the statement of "The online food delivery application helps the business to increase sale

and get more customers." is the most influenced statement that best describe the behavior of respondents when it comes to operation of restaurants. In contrast, respondents agree that the statement of "Online food delivery application helps me a lot in ensuring efficient management of food orders and improving punctuality" is the less clear and least influenced statement that best describe the behavior of respondents when it comes to operation of restaurant.

Table 3 Descriptive Statistics of Third-Party Logistics

Descriptive Statistics

	N	Mean	Std. Deviation
1) Third-party logistics service providers assist the restaurant in food delivery. / Penyedia perkhidmatan logistik pihak ketiga membantu restoran anda dalam penghantaran makanan.	30	3.87	1.196
2) Third-party logistics service provider helps the restaurant in order fulfillment. / Pembekal perkhidmatan logistik pihak ketiga membantu restoran anda dalam pemenuhan pesanan.	30	3.93	1.311
3) Third-party logistics help the restaurant in building a brand image. / Logistik pihak ketiga membantu restoran anda dalam membina imej jenama.	30	3.70	1.418
4) Third-party logistics help in the promotion of the restaurant. / Logistik pihak ketiga membantu mempromosikan restoran anda.	30	3.83	1.262
5) A third-party logistics service provides the best service for restaurant. / Perkhidmatan logistik pihak ketiga menyediakan perkhidmatan terbaik untuk restoran anda.	30	3.83	1.367
Valid N (listwise)	30		

Table 3 showed the descriptive statistics of third-party logistics with the five statements of independent variable. The statement of "Third-party logistics service provider helps the restaurant in order fulfillment." has the highest mean value of 3.93 and standard deviation of 1.311. While the statement of "Third-party logistics help the restaurant in building a brand image." has the lowest mean value of 3.70 and standard deviation value of 1.1418. Therefore, the majority of the respondents agree that the statement of "Third-party logistics service provider helps the restaurant in order fulfillment." is the most influenced statement that affecting the third-party logistics in Kelantan. In addition, respondents that the statement of "Third-party logistics help the restaurant in building a brand image." is the less clear and least influenced statement that affecting the third- party logistics in Kelantan.

4.2 Reliability Test

This section discussed the reliability of this research's questionnaire that represents dependent variable which is operations of restaurant and independent variables which is third party logistics. In this section, Cronbach's Alpha of every question for each variable in each section of the questionnaire starting section B were analyses and presented. Unlike in the pilot test which is only 30 responses from 30 respondents were collected in order to test the reliability of the questions before the questionnaire being distributed out, this reliability test was carried out in order to test whether the questions in questionnaire is still reliable even after responses being collected from actual number of respondents which are 300 respondents.

Table 4: Reliability Statistics for Operations of Restaurant

Reliability Statistics

Cronbach's Alpha	N of Items
.959	5

In this research, there are four questions that act as items in this test were used to measure the operations of restaurant as the dependent variable. Table 4 indicates that Cronbach's Alpha coefficient of operations of restaurant is 0.959 which resulted as an acceptable strength of internal consistency. Due to the coefficient obtained for the questions of operations of restaurant have an acceptable consistency and stability, therefore all questions used for this variable is valid and reliable.

Table 5: Reliability Statistics for Third Party Logistics

Reliability Statistics

Cronbach's Alpha	N of Items
.957	5

In this research, there are five questions that act as items in this test were used to measure the third-party logistics as the independent variable. Table 5 indicates that Cronbach's Alpha coefficient of third-party logistics is 0.957 which resulted as good strength of internal consistency. Due to the coefficient obtained for the questions of customer behavior have a good consistency and stability, therefore all questions used for this variable is valid and reliable

4.3 Normality Test

Table 6: Test of Normality of All Variables

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
IV	.196	30	.005	.848	30	<.001
DV	.258	30	<.001	.838	30	<.001

a. Lilliefors Significance Correction

The normality of data was checked and analyses in the SPSS system. The Kolmogorov-Smirnov and Shapiro-Wilk test was used in this study to test the data for normality. There are two ways to comprehend about distribution which are normal and abnormal distribution. The any variables that have p-value lesser than 0.05 was data regarding abnormality. Based on the Table 6, it shows test of normality of all variables in the study through Kolmogorov-Smirnov and Shapiro-Wilk test. The outcome in each test shows that all the significant value, p is 0.001 which is less than 0.05 thus making the data as abnormal because does not follow a normal distribution. Due to the result in this test, in order to define the relationship between two variables in this study, Spearman correlation analysis should therefore be applied in hypothesis testing instead of Pearson correlation analysis (Newson, 2002).

4.4 Hypotheses Testing (Spearman Correlation Analysis)

The Spearman correlation is frequently implemented when the statement of the bivariate normal distribution is not acceptable (Artusi, Verderio, & Marubini, 2002). The results of the correlation coefficient analysis indicated that independent variables in which have a correlation relationship with the impact of third-party logistics on operations of restaurants in Kelantan. The finding of the correlation between independent and dependent variables summarized and presented in each table in hypothesis result.

Table 7: Correlation Coefficient between third party logistics and operations of restaurants

Correlations

			IV	DV
Spearman's rho	IV	Correlation Coefficient	1.000	.824**
		Sig. (2-tailed)	.	<.001
		N	30	30
	DV	Correlation Coefficient	.824**	1.000
		Sig. (2-tailed)	<.001	.
		N	30	30

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

Based on Table 7, it shows the Spearman's correlation coefficient, significant value and 300 numbers of respondents. The result of the significant value, ρ, for this analysis is less than 0.01 which is lower than 0.05 that resulted as significant and this indicates that there is a positive relationship between third party logistics and operations of restaurants. The correlation coefficient for third party logistics and operations of restaurants platform is 0.824 and this indicates a strong strength of correlation between third party logistics and operations of restaurants. Therefore, null hypothesis was accepted after Spearman correlation analysis was conducted.

5 Recommendations / Suggestion for Future Research

For the future research, researcher can increase the number of sample size of the study in order to get even higher degree of accuracy and lower margin of error. The sample size that this study currently used has a 0.05 margin of error with 95% of data confidence. The sample size needs to wisely chosen because the sampling affected the usefulness of the data (Salkind, 2003). Future studies could be based on a larger sample and over a longer period of time in order to get more respondents who are used to perform micro transaction spending once or more in their life.

In addition, future research can also focus on a few data collection methods, for example, using the various assessment devices, for example, next to using the survey, the analyst can make a central gathering and top-to-bottom meetings as well as using the open-finished poll. The researchers can discover more information from the direct interview and open-ended questionnaire that affect the perception of the consumer on online food delivery apps, as well as simply relying on the one methodology. By using the various estimation strategies, the result can be more grounded than using the one methodology.

When it comes to recommendation regarding the variables, in future research, researcher can choose any other independent variables that have a strong relationship between dependent variable which is operations on restaurants. Researcher recommend that for any future research, future researcher can focus on researching what cause the main impact to operations on restaurants upon the third-party logistics the most relevant by study deeper on background of every demographic profile of the respondents.

Future researcher also can figure out the relationship between new other independent variable such as knowledge of retailer with this dependent variable which is operations on restaurants that will contribute better understanding in this topic.

6   Overall Conclusion of the Study

This research was conducted to figure out the impact of third party logistics on operations on restaurants in Kelantan and also aim to identify the relationship between three independents of the study which is out of stock, food wastage and high delivery price. Researchers have collected data and distributed questionnaires made in Google Form through social media platforms such as WhatsApp, Instagram, Twitter and Facebook to a certain group of users that fit the scope of study. In this study, there are four hypotheses developed to test the relationship between the dependent variable and the independent variable. Researchers have used stratified sampling technique in the collection of respondent's data because it is appropriate for samples that are widely dispersed geographically and would otherwise be difficult to sample properly. The minimum sample for this study is 300 people. However, the researcher has managed to obtain a few more responses from the respondents in total of exact 300. Descriptive analysis, reliability tests, test of normality, and Spearman correlation analysis were executed using IBM SPSS 25 software.

The results of the Spearman correlation analysis have shown that there is a strong relationship between the variables third party logistics (out of stock, high delivery price and food wastage) to the dependent variables (operation of restaurant). This study becomes beneficial in all three recipient which are restaurant owners, customers, Kelantan citizens and researcher because of the new understanding and new knowledge it provides to them either directly or indirectly.

7   Acknowledgement

We would first like to express our thankfulness to the Almighty God for providing us with ability, opportunity and strength to execute our project successfully and on

schedule. The success of our project will also depend on how seriously we take it and, on the help, and guidance of many. We therefore take this chance to convey our gratitude and many appreciations to everyone who has supported us in finishing this project, regardless of the time involved.

Moreover, we would like to express our gratitude to the University Malaysia Kelantan library for providing a wealth of assistance through the references and materials the assisted us in making references while working on this project. Likewise, we would like to express our thanks and gratitude to our friends who have provided additional assistance and support throughout this research as well as to our colleagues who have demonstrated a great deal of dedication and cooperation throughout this project.

Finally, we would want to express our sincere gratitude to our loving family for their unconditional support, thoughtfulness and words of inspiration as we worked on this project. In contrast, they are constantly present in all circumstances, particularly during times of difficulty. We also appreciate all of the prayers and kindness they have shown us.

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The Effect of Service Quality on Customer Satisfaction in Online Food Delivery (OFD) Service among Malaysian Generation Z

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Abstract:
The trend of OFD service in Malaysia is growing faster nowadays. The main issue of OFD service is poor food quality, limited coverage area, lack of customer expectations, unreasonable fees, and lack of interaction. This study is to determine the relationship between the service quality dimension which are tangibility, reliability, responsiveness, assurance, and empathy with customer satisfaction in OFD service among Malaysian generation Z. An online questionnaire was distributed through social media to users of OFD service among generation Z with selected age of 18-26 years old. The number of sample size is 150 and this study used non-probability sample and purposive sampling techniques. The measurement of this study will be applied 6-point Likert scale and following by data analysis with using reliability analysis, validity analysis, Pearson correlation coefficient, and multiple linear regression. In summary, the result obtained and showing that the relationship between all the dimensions of service quality which are tangibility, reliability, responsiveness, assurance, and empathy is significant on customer satisfaction in OFD service among Malaysian generation Z. This study comes out with some limitations and recommendation to get better point of view for future researchers.

Keywords*: Online Food Delivery Service, Tangibility, Reliability, Responsiveness, Assurance, Empathy, Customer Satisfaction*

1   Introduction

There is new emergence wave in Malaysia's food and beverage industry which is online food delivery (OFD) service. Based on study by Hishamuddin (2019), the evolution of OFD services came from fast food restaurant. There didn't exist any online food ordering services a decade ago, so people had no choice but to walk into restaurants and order their food. With thanks to technological advancements, people now prefer ordering food delivery rather than dining out with just a single click (Ayush Singh & Nair., 2020). The reason for the development of the OFD services is the growth on access internet via mobile phone in Malaysia (Chai & Yat, 2019). There were 88.7% Malaysian internet users in 2020 which 1.3% increases from 2018 (MCMC, 2020). Customer satisfaction is essential in determining the quality of service delivered in terms of services, quality of food, and cost (Lee et al., 2019). Service quality also

important to meet the customer satisfaction using food delivery service with five elements which are tangibility, reliability, responsiveness, assurance, and empathy (Ramya et al., 2019). Young people in Generation Z are the most likely to use OFD services because they did grow up surrounded by technology, internet, and social media which sometimes leads to stereotype of them as tech-addicted (Meola, 2022). Therefore, the trend of OFD service in Malaysia is growing faster nowadays.

There are some problems regarding service quality in OFD service. Firstly, poor food quality which refers to the cleanliness, hygiene, and packaging condition. According to Limon (2021), most respondents (98.4%) deliver food without wearing gloves whether they are placing food items in the delivery bag or removing food items from the delivery bag. It is important to the deliverymen to keep cleanliness and hygiene of food's quality while they bring it to the customer (Koay et al., 2022). Next, many individuals take advantage of this convenience, but not everyone because the OFD service is mainly concentrated in urban cities and available in the limited coverage area. This might be due to inadequate internet connectivity in rural areas or a lack of technological advancement (Suhana & Radziah, 2018). Another problem in terms of responsiveness elements in service quality is lack of customers' expectation. Users will have an expectation that OFD services can save their time or be used as quickly as possible. Besides, the problem that occurs regarding to the assurance elements in service quality is delivery fees are unreasonable. This problem occurs when retailers are raising their pricing due to the large commission that grabs on each individual menu item. According to the Koay et al. (2022), when the efficiency in food delivery service is applied which is the accuracy of the order and the fees are reasonable that will be influence the quality of assurance in customer satisfaction. When there is a lack of interaction between the customer and the service provider to resolve the customer's complaint while using the OFD service, it shows inefficiency in the OFD service provided. To properly respond and evaluate responses, organizations need to create a consistent set of policies and practices throughout handling customer feedback (Cornell, 2022).

Hence, this study was investigating the effect of service on customer satisfaction in OFD services among Malaysian Generation Z. The objectives of this study as following:

1. To determine the relationship between tangibility and customer satisfaction in online food delivery (OFD) services among Malaysian generation Z.
2. To determine the relationship between reliability and customer satisfaction in online food delivery (OFD) services among Malaysian generation Z.
3. To determine the relationship between responsiveness and customers satisfaction in online food delivery (OFD) services among Malaysian generation Z.
4. To determine the relationship between assurance and customer satisfaction in online food delivery (OFD) services among Malaysian generation Z.
5. To determine the relationship between empathy and customer satisfaction in online food delivery (OFD) service among Malaysian generation Z.
6. To examine the most significant factor of service quality (tangibility, reliability, responsiveness, assurance, and empathy) that influence customer satisfaction in online food delivery service among Malaysian generation Z.

2   Literature Review

2.1   Customer Satisfaction

Customers are always the most essential element in market share and business growth (Kok & Kim, 2021). Satisfaction is an emotional or psychological response to a center, such as wishes, product, use experience, and immediately after use, after the vote, the accumulation of experience (Kumar, 2020). According to Kok and Kim (2021), customer satisfaction is the main component of a successful business. Therefore, satisfaction is the most important thing that determines how effectively the business has performed. According to Ghosh (2020), customer satisfaction as a predictor of organizations and sectors, while others have looked at it as a predictor of behavioral intentions. Customers who are happy with the quality service (tangibility, reliability, responsiveness, assurance, and empathy) one of the most crucial aspects of a business's continued success and sustained in a long period of time (Annaraud & Berezina, 2020).

2.2   Tangibility

Tangibility refers to the appearance of the physical facilities such as the equipment, personnel, and written materials (Sahak et al., 2019). The previous studies mention that the dimension 'tangibility' evaluated the restaurants physical features and layout's utility which would influence the perception quality. For example, the consumer would examine the cleanliness of the floor, the smell of the air, arrangement of the table and much more which contribute to the persecution of service quality. Based on study Sahak et al (2019), the result obtained is that the tangible has a negative gap with customer satisfaction. Where the respondent is not happy with the service offered by food delivery service providers. Meaning that the customer expectation more than from what they have experienced from food delivery service providers.

2.3   Reliability

Reliability is a phrase used to describe how consistently and dependably a service performs (Kian Yeik et al., 2022). The reliability of a service may be measured by how well the supplier responds to client complaints and how consistently they provide the expected outcomes (Siti Zaleha et al., 2018). When discussing of OFD, the concept of reliability can be show on the ability of deliverymen to carry out the services that have been promised in an accurate and comprehensive approach (Kian Yeik et al., 2022). According to Zhu et al. (2021), time, connection, and capacity are all taken into consideration in this evaluation of reliability.

2.4   Responsiveness

The responsiveness of a service provider or its employees is evaluated by their ability to react to a customer's service demand (Sahak et al., 2019). To simplify, customer's issues are resolved as fast as possible due to responsiveness by providing anticipated information or changing products (Kobiruzzaman, 2020). The responsiveness conditions can be improved by constantly observing the process of service delivery and employees' attitudes toward customers' requests (Ramya et al., 2019). Based on Yusra and Agus (2020) study, responsiveness has been observed to have the strongest positive relationship with the customer's satisfaction, implying that in order for the customer to become loyal, the OFD firm must pay attention to providing the service in a timely

manner. If the service continues to fail to fulfil the food ordered, the company's representative must fix the situation by either providing a reasonable explanation or replacing or compensating the customer whenever the service failure occurred.

2.5   Assurance

Assurance is about the most important aspects of service quality affecting customers' satisfaction. It stated that the process of acquiring the knowledge that employees present to satisfy their preferences while providing service is very reassuring for customers. This will give our customers confidence that our service personnel will perform their duties professionally and ethically. Assurance shows that have the highest amounts of factors that impact the service quality to customers' satisfaction because of the customers trust the recommendations of restaurant staff, be assured that food is free of contamination, and be able to raise concerns without fear. In addition, safety considerations include ensuring that customers conduct business safely, that employees are always courteous to customers, and that employees have the knowledge to answer customer questions perfectly (Siti Zaleha et al., 2018).

2.6   Empathy

Empathy is defined as caring, personalised attention provides to the customers (Ramya et al., 2019). This element wants to describe the idea that customers are unique and special to the company by providing individualised or personalised services (Ramya et al., 2019). Because of the employees' lack of empathy, the company may lose customers. As a result, they must ensure compassion (Kobiruzzaman, 2020). According to Sparks (2021), empathy has a initiate impact on customer satisfaction and loyalty, and increased sales seem to be the result of both. Customers will evaluate the service quality if their point of view is understood. With gathering feedback, listening the issue, and personal interaction from the customers via email, social media, etc can help customer retention on their service quality (Sparks, 2021).

2.7   Research Hypothesis

Five hypotheses are developed in this study which are as following: -

H_1: There is a significant relationship between tangibility of service quality and customer satisfaction to OFD service.

H_2: There is a significant relationship between reliability of service quality and customer satisfaction to OFD service.

H_3: There is a significant relationship between responsiveness service quality and customer satisfaction to OFD service.

H_4: There is a significant relationship between assurance of service quality and customer satisfaction to OFD service.

H_5: There is a significant relationship between empathy of service quality and customer satisfaction to OFD service.

2.8   Conceptual Framework

Figure 1 shows the conceptual framework which consisted of independent variables (tangibility, reliability, responsiveness, assurance, and empathy) and dependent variables (customer satisfaction). This framework adapted from Balinado et al, 2021.
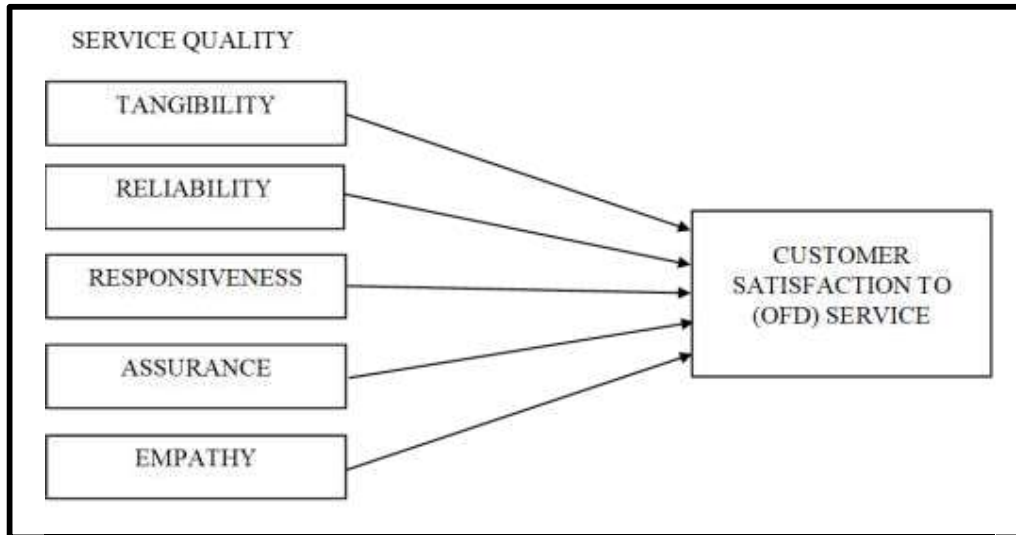
Figure 1: Conceptual Framework adapted from Balinado et al, 2021

3   Research Methodology

3.1   Research Design

This study has been used descriptive research analysis. Besides that, the quantitative design was used on online survey to gather information from the people of generation Z by using questionnaire on the effect of service quality on customer satisfaction in OFD service. Other than that, this study also has implemented a cross-sectional design.

3.2   Measurement Development

The measurement scale for independent variable and dependent variable were used is 6-point of Likert Scale to reduce the risks from the deviation of personal decision making. Questionnaire was prepared in Malay and English version. The questionnaire had designed of A, B and C sections.

3.3   Sample Size

The sample size we have been chosen is Generation Z. Hence this study has determined sample size based on unknown population by Hair, Anderson, Tatham, & Black (1998), the rule is about sample size will at least five times more than item that will be analyzed (Memon et al., 2022). Thus, we have at 150 least completed questionnaires (5 x 30 items to be analyzed) in this research.

3.4 Data Collection

An online questionnaire survey was used to collect data via Google Form (Evans & Mathur, 2018). The survey has been distributed randomly through media social, which is WhatsApp, Instagram, Facebook, Twitter, and TikTok to user of OFD service among generation Z in Malaysia with the selected age of 18 until 26 who earns an income for them to buy online food. There were 150 respondents answered all the questions and it used for analyzing the data.

3.5 Data Analysis

The tool that was used in this study by using Statistical Package for Social Science (SPSS) version 27. SPSS is software that can use descriptive analysis and correlation to illustrate how the independent variables and dependent variables are related. There were four types of data analysis has been applied which are reliability analysis, descriptive analysis, Pearson correlation coefficient, and multiple linear regression.

4 Findings

4.1 Demographic Profile of Respondents

A set of personal characteristics which are gender, age, monthly income, occupation, and frequency of using OFD service in a month have been examined and presented in Table 1. The total number of 150 respondents which is among generation Z in Malaysia was collected through online survey. The main objective for descriptive analysis is to understand the profile of respondents.

Table 1: Demographic profile of respondents

Demographic		Frequency	Percentage (%)
Gender	Male	67	44.7
	Female	83	55.3
Age	18-20	21	14.0
	21-23	85	56.7
	24-26	44	29.3
Monthly Income	Less than RM1000	69	46.0
	RM1001- RM2999	69	46.0
	RM3000- RM4999	11	7.3
	Above RM5000	1	0.7
Occupation	Student	62	41.3
	Employee	66	44.0
	Self-employed	21	14.0
	Unemployed	1	0.7
Frequency of Using Online Food Delivery (OFD) Service in a Month	1-3 Times	50	33.3
	4-6 Times	65	43.3
	7-9 Times	23	15.3
	Above 10 Times	12	8.0

Table 1 shows demographic profile of respondents. The female respondents were 55.3% (N=83) respondents and male were 44.7% (N=67) respondents. The female respondents are higher than male respondents. The researcher divided the age into three categories which are 18-20 years, 21-23 years, and 24-26 years. The result indicated that the age

range between 21 to 23 years old eventually became the majority of respondents, which consists of 56.7% (N=85) out of total 150 respondents. Followed by the age group 24-26 years old which is 29.3% (N=44). While 14.0% (N=21) fall under the age group 18-20 years old. The result indicated the categories of monthly income less than RM 1000 and the RM 1001 to RM 2999 was the same of their percentage and frequency which is 46% (N=69). While monthly income RM 3000 to RM 4999 which consists of 7.3% (N=11). Followed by above RM 5000 represent of 0.7% (N=1) respondent monthly income. The analysis showed that the highest percentage of occupations were employees which is 44.0% (N=66). Followed by student 41.3% (N=62). While, self-employed which consists of 14.0% (N=21). From this study, the least percentage of occupations are from unemployed which is 0.7% (N=1) only. Table 1 shows that the largest percentage respondents using OFD service was 4-6 times in a month which is consists of 43.3% (N=65) compared to 10 times in a month which is the lowest with 8.0% (N=12). While respondents who used OFD service 1-3 times in a month, consists of 33.3% (N=50). Following with the 7-9 times in a month which is 15.3% (N=23).

4.2   Pearson Correlation Analysis

Pearson Correlation coefficient has been used by the researchers to identify the significant relationship between dependent variable (Customer satisfaction on OFD service) and independent variables service quality (Tangibility, Reliability, Responsiveness, Assurance, and Empathy). This was in line with the objectives of this research which to determine the relationship between all these variables. Based on table 2, there is a strong relationship between all five elements of service quality (Tangibility, Reliability, Responsiveness, Assurance, and Empathy) towards customer satisfaction in OFD service among Malaysian generation Z. All different elements of service quality is significant and positively influences the customers satisfaction as it supported by the significant level of customer satisfaction is lower than 0.01 which is p-value is at 0.000 as well as the r value is at 0.803, 0.795, 0.832, 0.841 and 0.844 respectively where express that the relationship between customer satisfaction and service quality in OFD service is positive.

Table 2: Result of Pearson Correlation Analysis

	Tangibility	Reliability	Responsiveness	Assurance	Empathy
Pearson Correlation	.803**	.795**	.832**	.841**	.844**
Sig. (2-tailed)	.000	.000	.000	.000	.000
N	150	150	150	150	150

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

4.3   Reliability Analysis

In response to the study objective, the reliability analysis is to measure the consistency and stability of the variables. Table 3 shows the result of Cronbach's Alpha that was conducted on all five variables. The questionnaire's reliability was determined through reliability analysis. There is a rule of Cronbach's Alpha that is acceptable level at > 0.7, additionally, value above 0.9 indicate repetition in the measurement item based on Hair (2015). The reliability coefficients for the variables in the study shown in the table 3. Hence, further analysis is able to be executed as all variables were reliable.

Table 3: Reliability coefficient for the variable in the study

Variable	Cronbach's Alpha	No of Items	Result
Tangibility (IV 1)	0.880	5	Very Good
Reliability (IV 2)	0.915	5	Excellent
Responsiveness (IV 3)	0.875	5	Very Good
Assurance (IV 4)	0.912	5	Excellent
Empathy (IV 5)	0.919	5	Excellent
Customer Satisfaction (DV)	0.856	5	Very Good

4.4   Hypothesis Testing

The hypothesis on significant relationship between tangibility, reliability, responsiveness, assurance and empathy with customer satisfaction in OFD service were tested by using Pearson correlation analysis. All hypotheses were accepted at 0.01 significant levels.

4.5   Multiple Linear Regression Analysis

Table 4 showed the result of the relationship between service quality towards customer satisfaction by running multiple regression analysis. Based on the table 4, the value of R Square is 0.779 which means that 77.9% of using OFD service can be explained through the element of service quality which is tangibility, reliability, responsiveness, assurance, and empathy. The extend of the influence by service quality as independent variable toward customer satisfaction on behalf of dependent variable is illustrated through multiple regression analysis. Hence, the model is accepted.

Table 4: R Square for mutual determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.883^a	0.779	0.771	1.49227

a.   Predictors: (Constant), Empathy, Reliability, Tangibility, Assurance, Responsiveness

According to the result of multiple regression analysis listed in the table 5 the result shows that the p value for responsiveness (0.026), assurance (0.013), and empathy (0.007) is less than α (0.05). It explained that responsiveness, assurance, and empathy are influence the customer satisfaction on OFD service. Besides that, the p value for tangibility and reliability is 0.195 and 0.490 is much higher than alpha value which 0.05. It indicates that these variables are no significant towards the customer satisfaction on OFD service.

Table 5: Standard Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.401	0.248		1.615	0.109
Tangibility	0.124	0.096	0.122	1.301	0.195
Reliability	0.058	0.084	0.068	0.692	0.490
Responsiveness	0.233	0.103	0.225	2.256	0.026
Assurance	0.246	0.097	0.249	2.529	0.013
Empathy	0.267	0.098	0.273	2.735	0.007

5 Discussion

5.1 Tangibility

The researchers have identified that there is a significant relationship between tangibility and customer satisfaction on OFD service among Malaysian generation Z. The result of Pearson Correlation Coefficient that shown the p value of significant on tangibility is less than 0.05. This study accepting significant relationship between tangibility and customer satisfaction on OFD service among Malaysian generation Z with the correlation value 0.803. This result obtained was contrast with the previous study by Sonali P. Banerjee et al. (2019). The result obtained has a negative gap with customer satisfaction where the respondent is not happy with the service offered by food delivery service providers. It was found that the average respondents are unhappy with the service offered as they have a gap of -4.786 for tangibility dimension. The dimension 'tangibility' measured the physical aspect of the restaurant and the convenience of the layout which would impact the perceived quality (Sahak et al., 2019). Therefore, an unpleasant atmosphere will affect customer satisfaction.

5.2 Reliability

The researchers have identified that there is a significant relationship between reliability and customer satisfaction on OFD service among Malaysian generation Z. The result of Pearson Correlation Coefficient that shown the p value of significant on tangibility is less than 0.05. This study accepting significant relationship between reliability and customer satisfaction on OFD service among Malaysian generation Z with the correlation value 0.795. This result can be supported by past study from Kian Yeik et al. (2022) which they found that the reliability was have a significant positive relationship with customer satisfaction. In addition, according to Sonali P. Banerjee et al. (2019), reliability also was found to have a significant positive influence on customer satisfaction in OFD service context. Therefore, in order to have a higher customer satisfaction, the good service provision must be built for consumer trust and lead to reliability.

5.3 Responsiveness

The researchers have identified that there is a significant relationship between responsiveness and customer satisfaction on OFD service among Malaysian generation Z. The result of Pearson Correlation Coefficient that shown the p value of significant on responsiveness is less than 0.05. This study accepting significant relationship between responsiveness and customer satisfaction on OFD service among Malaysian generation Z with the correlation value 0.832. Based on Yusra and Agus (2020) study, responsiveness has been observed to have the strongest positive relationship with the customer's satisfaction. Implying that in order for the customer to become loyal, the OFD firm must pay attention to providing the service in a timely manner. The service provider is evaluated by their ability to react to a customer's service demand (Sahak et al., 2019). Therefore, it plays an important role to obtain the customer satisfaction to their service.

5.4   Assurance

The researchers have identified that there is a significant relationship between assurance and customer satisfaction on OFD service among Malaysian generation Z. The result of Pearson Correlation Coefficient that shown the p value of significant on assurance is less than 0.05. This study accepting significant relationship between assurance and customer satisfaction on OFD service among Malaysian generation Z with the correlation value 0.841. Many previous studies have been observed to have a significant positive influence on customer satisfaction in OFD service (Sonali P. Banerjee et al., 2019) (Kian Yeik et al., 2022). The assurance evaluated by the quality of assurance based on how fast the deliverymen can deliver the ordered food whether the quantity is correct and the reasonable fees. In order to ensure the customer satisfaction, it is important to have a delivery fee reasonable without any hidden cost (Kian Yeik et al., 2022). Therefore, assurance will experience a high level on determine a service quality on customer satisfaction.

5.5   Empathy

The researchers have identified that there is a significant relationship between empathy and customer satisfaction on OFD service among Malaysian generation Z. The result of Pearson Correlation Coefficient that shown the p value of significant on empathy is less than 0.05. This study accepting significant relationship between empathy and customer satisfaction on OFD service among Malaysian generation Z with the correlation value 0.844. Based on the past study, there is no significant relationship between empathy and customer satisfaction in online food delivery service. A study from Sonali P. Banerjee et al. (2019) was contradict with the result obtained. They observe that empathy placed the second element of service quality which showed that customers are dissatisfied with the service quality in OFD service. It is because customers expect something beyond what is offered to them, and it could also be due to the industry's high competitiveness. Therefore, the firms of OFD service should be careful in developing empathy to meet the customers need (Sonali P. Banerjee et al., 2019).

6   Recommendation

6.1   Recommendation for Scope of Study

The first recommendation is intended to expand the scope of the study. In this study, we only limit the categories of respondents with the sample size of 150 where the questionnaires were distributed only on generation Z in Malaysia. Researchers could open the target respondents to all the people that have experience in using OFD service in Malaysia, so that the research can be done evenly throughout the whole generation in Malaysia. This is intended to expand the scope of the study in order to gain better and comprehensive research. According to Krejcie and Morgan (1970), the quantity was adequate and appropriate. A large sample size might be utilized to systematize millions of Malaysians' satisfaction with OFD services. As a result, future researchers should raise their sample size to improve the study's accuracy and validity.

6.2 Recommendation for Future Study

In this study we only focus on the service quality as the independent variable. Researcher able to elaborate details on the customer satisfaction towards OFD service in measure the other independent variable such as website quality, security, efficiency, and more variables to not only focusing on service quality. So, researchers will gain large amounts of information to influence customer satisfaction and help sellers, companies, and riders to improve their service. Furthermore, in order to understand deeply about the factor of service quality (tangibility, reliability, responsiveness, assurance, and empathy) that influence customer satisfaction in (OFD) should manipulate the value of each independent variable through an experiment or come up with additional aspects that can gather more input from respondents and to achieve objectives of the future research.

6.3 Recommendation for Qualitative Research

This research was conducted by the questionnaire method. We advise the other researcher to employ a different method. The approach is a qualitative method such as face-to-face and telephone interviews that can also be done to collect data from respondents. The reason is some respondents just choose any option while answering the questionnaire. As a result, the questionnaire method that had been done as a research tool to collect the data in this study caused the data gathered may be imprecise. Therefore, face-to-face interviews typically generate more accurate information for the researcher than questionnaires. Since the information obtained through this method has more precise and deep insights.

7 Limitation

These are some of the limitations identified during this research. First, this survey focuses only on those who have used her OFD service. This is because some people have never used OFD services because they are unaware of their benefits. Additionally, the respondent's data collection comes from her online Google survey. The data received from respondents was inaccurate as not all respondents participated in or supported the survey. Some respondents did not fill out the questionnaire at all, so researchers had to find other respondents to fill out the questionnaire. Furthermore, in this study he focused on only his five independent variables. Specific as reliability, responsiveness, assertiveness, empathy. This is a limitation of our ability to examine other matters in these subjects. The investigators were unable to control expression from the samples. This lack of control can lead to biased samples and study results, thus limiting the applicability of broader studies. With these points in mind, future researchers will consider using a mixed-methods approach to reduce the possible limitations of their studies.

8 Conclusion

In a nutshell, service quality in OFD service was influencing customer satisfaction in Malaysian generation Z. This OFD service is very significant service among Malaysian generation Z and this service may give the benefit to all users. The cross-section study indicates that service quality (tangibility, reliability, responsiveness, assurance and

empathy) influencing customer satisfaction in OFD service among Malaysian generation Z. The entire hypothesis are supported and accepted. Based on the findings, empathy element is the most significant factor of service quality that influences customer satisfaction in online food delivery service among Malaysian generation Z. Therefore, empathy elements in service quality are very important to customers' satisfaction in OFD service.

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Factors Affecting Customer Satisfaction on Online Food Delivery Services Towards Kelantanese

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Abstract:
In Malaysia especially Kelantan, food and beverage business, a new trend is emerging: online food delivery (OFD) services. Not limited to takeout and dining out, internet food ordering is the new dining out. Due to the changing character of Kelantanese customers, online food delivery industry has emerged. Despite the significance and increasing customer satisfaction towards OFD services in Kelantan, research addressing the contributing variables towards OFD services among Kelantanese residents is still few. Consequently, the purpose of this study is to develop an integrated model that examines the relationship between product variety, product quality, delivery services and customer satisfaction toward OFD services among Kelantanese residents.

Keywords*: Online Food Delivery, Product Variety, Product Quality, Delivery Services, Customer Satisfaction*

1 Introduction

A fresh new trend is beginning to emerge in Malaysia's food and beverage industry, which online food delivery services. Many of the Malaysian food delivery businesses also provide online food delivery services. The first delivery service to be operated in Malaysia is called Food Panda. There are also other businesses on the market. This includes Deliver Eat, Uber Eats, Honestbee, Running Man Delivery, FoodTime, Dahmakan, Mammam, and Shogun2U.

According to Cho et al. (2019), online food delivery service is an inventive method which allows customers to purchase a variety of foods via platforms. Customer's orders are collected through online food delivery systems, which then provide the information to the restaurants and delivery staff (Troise et al., 2021). By offering customers the convenience of having meals delivered to their homes, this will create new chance for businesses to expand their customer base and increase their profitability.

The development of urban customers may be linked to the growth of online food delivery services. These customers used online food delivery services for various reasons, but the need for quick and convenient meals during or after a hectic workday

appears to be the one that stands out the most. Utilizing food delivery services has become normal and usual because of how profoundly they have evolved customer behaviour, especially among metropolitan customers. Food delivery is becoming more and more popular in recent years due to the fast-paced nature of modern living and the chance it offers to discover new areas. For many city dwellers who have busy lifestyles, online food delivery services are a viable option. Since it allows them to carry on with their while having access to fresh and healthy meals at their homes or workplaces, many individuals prefer this option for food delivery. It is no nonsense that online food delivery services give their users a great deal of convenience and time savings because clients can buy food without leaving their homes or offices.

There are three objectives of this research:

1. To examine the relationship between product variety and customer satisfaction on online food delivery services towards Kelantanese.
2. To examine the relationship between product quality and customer satisfaction on online food delivery services towards Kelantanese.
3. To examine the relationship between delivery services and customer satisfaction on online food delivery services towards Kelantanese.

2   Literature Review

2.1   Online Food Delivery

There are two different kinds of online meal delivery which is platform-to-consumer delivery and delivery from the restaurant directly to the customer. When food is delivered directly from a platform to a customer, the platform, such as Uber Eats, is responsible for the delivery process. The food delivery service that operates online provides an easy method for placing orders and getting them delivered. The emergence of online food services could be attributed to the changing nature of urban consumers. Food delivery services have changed consumer behavior so much, especially Kelantanese consumers that using the OFD services have become their routine and normal. More and more people are turning to food delivery in recent years because of the current situation and pace of life as well as the opportunity to discover more restaurants.

2.2   Malaysian Adult (Kelantanese Behaviour)

An individual's perception of easy or difficult behaviour is being described in a study as behaviour control awareness (or perceived behavioural control) (Ajzen, 1991). Instead of the outcome of behaviour, it shows the degree of control over behaviour. According to Weltevreden, J.W.J. (2008), customers are increasingly likely to use services that deliver goods straight to their homes, which would make the process of online purchasing more appealing. According to one study, convenience is more relevant than it ever has been due to the modern era of technological growth, which helps to support the behaviour effect of people opting to purchase online these days. Due to today's hectic lifestyle, ordering and paying for goods has become easier and faster as the delivery will occur as a result (Le-Hoang, Phuong Viet, 2020).

Customer behaviour can be described as the actions individuals do to plan, purchase, and use goods and services (Rodrguez-Torrico et al., 2017). Emotional and physical behaviours are both involved in this. Going to a store and trying the goods or services are some of the examples related to physical tasks. Customer behaviour includes experimenting people's preferences, reasons in choosing one product over the other, as well as their habits of consuming various products and services (Orji et al., 2017). Based on the results of previous studies, it can be deduced that Kelantanese behaviour has a strong relationship with the factors affecting customer satisfaction on online food delivery services.

2.3   Expectancy Disconfirmation Theory (EDT)

It is a usual practice to explain the continuity of information systems (IS) using the expectancy disconfirmation theory (EDT) (Bhattacherjee, 2001; Roca et al., 2006). Customer satisfaction, which is measured as the discrepancy between levels of perceived quality and expectations, has an impact towards IS continuation intention. This resulted in customer satisfaction influences repurchase intentions and word-of-mouth positively. According to EDT, the difference between what customers expect from the items they buy and the actual quality of those products is what determines customer satisfaction (Athiyaman, 1997; Bitner, 1990; Chong and Wong, 2005; Hill, 1995; Maxham, 2001; Zhao and Lu, 2012). To put it another way, customers are content if the suggested items live up to or even surpass their high expectations regarding quality.

2.4   Customer Satisfaction Theory

One type of loyalty is word-of-mouth. According to the literature on marketing and customer behaviour, some studies have applied the structure of perceived service quality, satisfaction, and loyalty in a variety of industries (e.g., Bakti and Sumaedi 2013; Widianti et al., 2015; Kondasani and Panda, 2015; Tsoukatos and Rand, 2006). In-depth explanations of perceived service quality and satisfaction were given in the literature on service and marketing (Yusoff and Ismail, 2008; Gallo, 2011). Customers' emotional (feeling) state because of their assessment of the disparity between their expectations and service provider's performance is commonly known as satisfaction (Sumaedi et al., 2016). Since satisfaction is the result of a comprehensive evaluation that considers both the intrinsic and extrinsic aspects of a service, including image, pricing, and other factors, it differs from perceived service quality.

2.5   Product Variety

Product variety has been a topic of discussion in operations management and marketing literature for a considerable amount of time. According to the basic concepts of marketing theory, merchants are able to add depth and/or breadth to an existing product offering in order to provide consumers additional choices. Businesses can also use a product variety strategy to boost sales by increasing the probability that customers will identify and purchase a substitute product when their preferred item is out of stock.

H1: There is positive influence between product variety and customer satisfaction on online food delivery services towards Kelantanese.

2.6 Product Quality

Product quality attempts to bring together elements that will meet customer challenges, demands, and loyalty by improving goods, such as products, and make them free from any inadequacies or faults. The goal of food delivery services, according to Park and Kim (2001), is to reduce transaction costs and risk by improving customer pleasure. This can be achieved by improving the product's quality, the packing's quality, and customers' perceptions of security.

Except when being associated with a certain capacity or potential item, product quality is not particularly significant. To produce high-quality products, Taguchi (1982) addressed the significance of product design and process control. Additionally, one way to integrate quality control in online food delivery services is by passing through product quality. The competitiveness, efficacy, and flexibility of customer satisfaction in food delivery services can become more improve by focusing on product quality. In essence, it's a plan for organising, arranging, and comprehending the customers. Product quality, brand diversity, and shopping experience all have a positive impact towards online shoppers' satisfaction, according to (Zamri, 2014).

According to Lin, Wu, and Chang (2010), delivery quality, product quality, service quality, system quality, and a sizeable degree of perceived cost are the factors that have the greatest impact on online customers' satisfaction. The objective is to constantly improve product performance to help ensure customer satisfaction (Zairi & Sinclair, 1995). When it comes to online food delivery services, product quality is interwoven with customer satisfaction and its continuous improvement.

H2: There is positive influence between product quality and customer satisfaction on online food delivery services towards Kelantanese.

2.7 Delivery Services

Delivery is the amount of time necessary for the package to go from the distribution center to the customer door (Christian & France, 2005). Post purchase evaluation can be influenced by the efficiency of logistics and customer services. Delivery problem is a very common phenomena that exists in the online food delivery services environment. In the e-commerce environment, not only the consumption of goods separated from production, but also making it necessary for goods to be delivered to customers before consumption, there is also delay in the delivery of goods.

Delivery services are important because it will help to provide people with amenities they want or need by linking them to an organization with the resources to provide those services. In addition, the obvious benefit of getting into the delivery service is, increasing the revenue and also more profitable than traditional restaurant sales.

Hence, as for the online food delivery there is a low chance that the foods are not delivered to the customers. Delayed delivery has a negative effect on satisfaction (Liu et al., 2008). In delivery services, technology was the most important thing that plays a big role in order to achieve what customers wanted. Syed and Norjaya (2010) had conducted a study to investigate the key factors that influence customers satisfaction through online delivery service. Finding from this research indicated that delivery

performance has a significant influence on customer satisfaction and it can explain much of the variation in online buying satisfaction.

H3: There is positive relationship between delivery services and customer satisfaction on online food delivery services towards Kelantanese.

2.8 Customer Satisfaction

Customer satisfaction is one of the most important factors influencing consumer loyalty, and satisfaction is a strong predictor of future purchases (Frasquet and Miquel, 2017; Nair, 2018; Menidjel et al., 2019). In order to achieve maximum customer satisfaction, service providers should prioritize product variety, product quality, and delivery services.

2.9 Conceptual Framework

There are three independent variables (IV) involved in this research, which are perceived product variety, product quality and delivery services. The dependent variable (DV) is the customer satisfaction on online food delivery services towards Kelantanese. The research aim to study the actors affecting customer satisfaction on online food delivery towards Kelantanese.
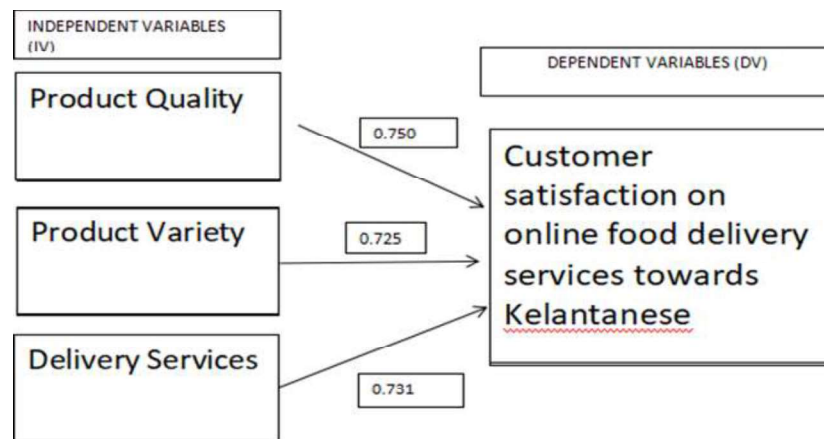
Figure 1: The Conceptual Framework of Study

3 Methodology

3.1 Research Design

The researcher's plan in finding the solutions to the primary research question is called the research design. Individual research that uses quantitative data is what this study is. To improve customer satisfaction with online food delivery services, this study is being conducted. The survey's objective is to gain information regarding the quantitative method. In describing and understanding the phenomena that those observations are reflecting; quantitative studies involve the numerical illustration and manipulation of observations. This research explains how online food delivery services are affecting consumer satisfaction.

3.2   Data Collection Method

At this stage, the data collection method used in this study is primary data, which is a quantitative approach, and would be used for the distribution of questionnaires, which may encourage respondents to provide feedback on their satisfaction with online food delivery services. Primary data, according to (Van Khuc, Tran), is information that has not previously been published and was gathered through first-hand experiences. This report's data will be gathered via a questionnaire. The questionnaire was distributed to 289 people. There are 17 questions that the respondent must answer. Questionnaires will be distributed to Kelantanese via social media platforms such as WhatsApp, Instagram, Telegram, and Facebook, and will be administered using the Google Form platform.

3.3   Population and Sampling

Population research aims to identify the factors that may influence consumer satisfaction with online food delivery services catering to Kelantanese. According to city population statistics, the Kelantanese population is 1,792,501 and the sample size for this study will be 384. The purpose of concentrating on the Kelantanese is to determine the level of online food delivery use. Data collecting is a method of acquiring and assessing particular information in order to answer pertinent questions and evaluate the results. For the sake of research projects requiring specialised data, researchers devise innovative data random techniques. In surveys, closed-ended questions are also employed to collect data that may be assessed analytically. Quantitative analysis is sometimes characterised as the use of mathematics to derive numbers.

4   Findings

4.1   Demographic Profile of Respondents

In this study, eight questions on respondent demographic section were asked. This includes gender, age, race, and monthly income; what kinds of items are often bought using online shopping; how often visit online shopping, how often purchase online, and which online shopping platform used the most. The demographic profiles of the 389 responses to the previously disseminated Google Form are included in this section. The frequency and rate for each aspect of the respondents' profiles were then displayed using tables and revised diagrams, which provided a description regarding the respondents' profiles.

Based on Table 1, the highest gender of respondents comes from female which is 306 (79.7%). This is followed by 83 (21.3%) male respondents. Besides that, Table 1 shows that 15-24 years old is the highest range for age which consists of 283 (72.8%) respondents. The second is 83 (21.3%) respondents which range from the age 25-34 years old. The third is 11 (2.8%) respondents which range from the age 35-44 years old. The fourth is 10 (2.6%) respondents which range from the age 45-54 years old. The lowest is 2 (0.5%) respondents which range from the age 55-64 years old. Moreover, it is shown by Table 1 that Malay is the highest race of respondents that accumulated to 305 (78.4%). The second is 51 (13.1%) respondents that come from the Chinese. The least is 33 (8.5%) Indian respondents. Next, Table 1 stated the most income from respondents is below RM1,000. This can be seen as there 257 (66.1%) respondents are earning this much. The second is 89 (22.9%) respondents that earn RM1,000 -

RM2,000. The third is 30 (7.7%) respondents earn RM2,001-RM3,000. The lowest is 4 (1.0%), which earns more than RM4,100. In addition, Table 1 shown that groceries are the highest kinds of items are often bought using online shopping with 214 (55.0%) respondents. The second is 149 (38.3%) respondents that bought food using online shopping. The lowest is 26 (6.7%) respondents who bought other things using online shopping. After that, Table 1 described the highest is 283 (72.8%) respondents who never visited online shopping. The second is 81 (20.8%) respondents visited once within several months. The third is 22 (5.7%) visited online shopping monthly. The fourth is 2 (0.5%) visited online shopping monthly. The least is 1 (0.3%) respondent who visited online shopping everyday. Moving on, it has been shown in Table 1 that the highest is the respondents who never purchase online. The number of respondents is 281 (72.2%). The Second is 83 (21.3%) who purchased from online once within several month. The third is 23 (5.9%) who purchased from online monthly. Everyday and weekly is the lowest with make up about one respondent (0.3%). Finally, Table 1 shows that Shopee is the platform used the most with 246 (63.2%) respondents. The second is Mudah.com with 100 (25.7%) respondents stated having using it. The third is Lazada that consists of 37 (9.5%) of the respondents. The fourth is 5 (1.3%) respondents who prefer to use Carousell. The lowest online platform used is Amazon, which only has one respondent (0.3%).

Table 1: Respondents' profiles

Profile		Frequency	Percentage (%)
Gender	Male	83	21.3
	Female	306	79.7
Age	15-24 years old	283	72.8
	25-34 years old	83	21.3
	35-44 years old	11	2.8
	45-54 years old	10	2.6
	55-64 years old	2	0.5
Race	Malay	305	78/4
	Chinese	51	13.1
	Indian	33	8.5
Monthly income	Below RM1,000	257	66.1
	RM1,000-RM2,000	89	22.9
	RM2,001-RM3,000	30	7.7
	RM3,001-RM4,000	9	2.3
	More than RM4,100	4	1.0
What kind of items often bought using online shopping	Food	149	38.3
	Groceries	214	55.0
	Other	26	6.7
How often visit online Shopping	Everyday	1	0.3
	Weekly	2	0.5
	Monthly	22	5.7
	Once within several month	81	20.8
	Never	283	72.8
How often purchase online	Everyday	1	0.3
	Weekly	1	0.3
	Monthly	23	5.9
	Once within several month	83	21.3
	Never	281	72.2

Which online platform used the most	Amazon	1	0.3
	Carousell	5	1.3
	Lazada	37	9.5
	Mudah.com	100	25.7
	Shopee	246	63.2

4.2   Reliability Test

The reliability of a measuring instrument is the consistency with which it measures the idea being measured. Cronbach's alpha is a reliability coefficient that measures how strongly connected items in a collection are. It is computed by averaging the intercorrelations of items used to measure the idea. According to study by Shahidah and Umasugi (2021), the Cronbach Alpha value is shown in the table below.

Table 2: Table of Cronbach's Alpha

Cronbach's Alpha Coefficient Range	Strength of Association
0.91 – 1.00	Excellent
0.81 – 0.90	Good
0.71 – 0.80	Good and Acceptable
0.61 – 0.70	Acceptable
0.01 – 0.60	Unacceptable

(Source: Konting et al, 2009)

The result of Reliability Analysis for this study is shown in the table below.

Table 3: Result of Reliability Analysis

	Cronbach's Alpha	Strength of Association	N of Items
Product Variety	0.969	Excellent	3
Product Quality	0.906	Excellent	3
Delivery Services	0.917	Excellent	3
Customer Satisfaction	0.899	Good	3

4.3   Descriptive Analysis

Descriptive statistics are used to describe the fundamental characteristics of data in a study. It provides concise summaries of the sample and measures. They form the foundation of almost every quantitative data analysis, along with simple graphics analysis (Bush, 2020). The statistic below is derived from research conducted by the researcher.

Table 4: Descriptive Statistics of Independent Variables and Dependent Variable

Variables	N	Mean	Standard Deviation
Product Variety	389	4.53	.66
Product Quality	389	4.56	.65
Delivery Services	389	4.60	.63
Customer Satisfaction	389	4.56	.68

4.4   Pearson Correlation Analysis

Pearson's correlation was used in this study to describe the relationship between the two variables in terms of the strength of the relationship. In this study, the dependent

variable was customer satisfaction with online food delivery services aimed at Kelantanese, while the independent variables were product variety, product quality, and delivery services.

Table 5: Pearson Correlation Analysis

		Customer Satisfaction	Product Variety	Product Quality	Delivery Services
Customer Satisfaction	Pearson Correlation	1	0.750	0.725	0.731
	Sig. (2-tailed)		0.000	0.000	0.000
	N	389	389	389	389
Product Variety	Pearson Correlation	0.750	1	0.818	0.676
	Sig. (2-tailed)	0.000		0.000	0.000
	N	389	389	389	389
Product Quality	Pearson Correlation	0.725	0.818	1	0.661
	Sig. (2-tailed)	0.000	0.000		0.000
	N	389	389	389	389
Delivery Services	Pearson Correlation	0.731	0.676	0.661	1
	Sig. (2-tailed)	0.000	0.000	0.000	
	N	389	389	389	389

Hypothesis 1: There is significant relationship between product variety and customer satisfaction on food delivery among Kelantanese.

According to the table 5 the positive value of Pearson Correlation is 0.750. This shows that the relationship between these two variables is moderate correlation. Therefore, the product variety has a high positive correlation with customer satisfaction when using an online food delivery service towards Kelantanese. Thus, the hypothesis 1 was accepted.

Hypothesis 2: There is significant relationship between product quality and customer satisfaction on food delivery among Kelantanese.

According to the table 5 the positive value of Pearson Correlation is 0.725. This shows that the relationship between these two variables is moderate correlation. Thus, the product quality has a high positive correlation with customer satisfaction when using an online food delivery service towards Kelantanese. Therefore, the product quality has a high positive correlation with customer satisfaction when using an online food delivery service towards Kelantanese. Thus, the hypothesis was accepted.

Hypothesis 3: There is significant relationship between delivery services and customer satisfaction on food delivery among Kelantanese.

According to the table 5 the positive value of Pearson Correlation is 0.731. This shows that the relationship between these two variables is moderate correlation. Thus, the delivery service has a high positive correlation with customer satisfaction when using an online food delivery service towards Kelantanese. Therefore, the delivery service has a high positive correlation with customer satisfaction when using an online food delivery service towards Kelantanese. Thus, the hypothesis 3 was accepted.

Table 6: Summary of Pearson Correlation Analysis

Hypothesis	Correlation	Result
H1	Product Variety has a high positive correlation with customer satisfaction when using an online food delivery service towards Kelantanese. $r = 0.750 , p = 0.000$	Accepted
H2	Product Quality has a high positive correlation with customer satisfaction when using an online food delivery service towards Kelantanese. $r = 0.725 , p = 0.000$	Accepted
H3	Delivery Services has a high positive correlation with customer satisfaction when using an online food delivery service towards Kelantanese. $r = 0.731 , p = 0.000$	Accepted

5 Discussion and Recommendation

The emergence of online food delivery services has become a major game changer towards people in Malaysia, especially Kelantanese. The reason is online food delivery food delivery services makes ordering food easily without having to leave the house. Thus, research has been conducted to find the relationship between product variety, product quality and delivery services and customer satisfaction on online food delivery services towards Kelantanese. Research into "The factors affecting customer satisfaction on online food delivery services towards Kelantanese" is what the current study is doing. The results must be carefully evaluated because of the study's constrained scope. This is done in case the outcome differs in other regions.

There are some suggestions for the further researcher after looking at the study's limitations. In order to get the high reliability of the feedback, the researchers may implement the research in all the population in Malaysia and this may help to avoid bias in future research. Besides that, the future researcher may also increase the test sample size. This is because there are only 389 respondents who are Kelantanese that considered in the present research. The future researcher can expand the sample size, it may be easy for the researcher to identify the reliability. Thus, the opinion of Kelantanese can be presented well in further research.

In addition, the future researchers are encouraged to use the Theory of Planned Behavior in their research as the theory to investigate the relationship between its components (product quality, product variety and delivery services) and entrepreneurial intention. Most of the researchers used the same questionnaire questions of Linan & Chen (2009) in their research. The future researcher can redesign the questions to match with their research objectives. Moreover, the present research uses the questionnaire as the survey method. The future researcher may do the research with other survey methods, which is interview the respondents. The researcher will have more feedback from their target respondents. In general, there is a smaller percentage for the respondents to fail to understand the questions, as the interviewer will clarify to interviewee in depth.

Finally, future research could further examine these factors on a larger spectrum. This could also contribute to a deeper understanding of the selected issue for research. For example, larger area of study which would gain more data needed to understand the

factors affecting customer satisfaction on online food delivery services towards Kelantanese.

6 Conclusion

In conclusion, this research provides the better understanding for the researcher on the relationship between product quality, product variety and delivery services towards customer satisfaction on online food delivery among Kelantanese. The findings of the discussion showed that there is significantly positive relationship of product quality, product variety and delivery services towards customer satisfaction. The present research also offers implications for 1 million population of Kelantanese to increase the satisfaction of online food delivery and entrepreneurial spirit in their perception. Limitations and recommendations also stated by the researcher for the future research. The researcher hopes that this research may provide the beneficial information for the future research to promote the entrepreneurial intention.

7 Acknowledgements

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Factors Affecting Satisfaction among the Students of Universiti Malaysia Kelantan on Online Food Delivery Service Quality in Kota Bharu

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Abstract:
Food delivery platforms are commonly used by people in Malaysia because of its convenience by delivering food to customer's doorstep. Consumers especially students' category often use online food delivery service application to order their meals if there are inadequacy of food choices in their university area. This study aims to examine factors affecting student satisfaction towards online food delivery service in Kota Bharu among Universiti Malaysia Kelantan students. In this study, quantitative research method is applied. Primary data will be collected from respondents of Universiti Malaysia Kelantan students to answer questionnaire. A total of 368 questionnaires will be collected from respondents. Therefore, respondents in this study are customers that have experienced using online food delivery service in Kota Bharu. Statistical Package for the Social Sciences (SPSS) is used to carry out the data analysis including descriptive analysis, reliability test, normality test, Pearson Correlation analysis and Multiple Linear Regression analysis. It is to determine the relationship of reliability, responsiveness, assurance and empathy on student satisfaction towards online food delivery service. The findings and results show that reliability, responsiveness, assurance and empathy have significant influence on student satisfaction towards online food delivery service in Kota Bharu.

Keywords*: Student satisfaction, online food delivery service quality, reliability, responsiveness, assurance, empathy*

1 Introduction

1.1 Background of Study

Food delivery services are to some degree comparable to dispatch benefit in which the request is delivered from the eatery to the client either by the restaurant's staff or by delivery operators of a nourishment requesting company. This clearly depends on the medium through which a client places their arrangement. Convenience is the prime calculation to the shoppers, as to put an arrangement is a simple as few clicks on any problems gadgets. These days, individuals particularly the college students tend to remain domestic and browse the site all day long amid their recreation time thus having inadequately managing with errands in their scholarly lives (Hooi et al., 2021).

Unused clients of online food delivery services apps are primarily attracted by the point of interest given by these apps. Utilizing these apps, clients are able to see all adjacent eateries, see the menu alternatives, and select the food delivery or beverages that they need. This will provide convenience for students to make any order through the provided application. For example, through application Foodpanda, GrabFood, OdaMakan and so on. Moreover, food delivery services these days have moreover been prepared with computerized instalment disobedience to create acquiring indeed simpler.

Due to their modern behaviour, in order to draw in clients and increase brand mindfulness, numerous eateries are accessible on food delivery apps (Chai et al., 2019), having feast within the physical store is considered as time consuming. Consequently, it will influence the purpose of university students to utilize an online food delivery services in their daily life in Universiti Malaysia Kelantan. Consumers especially students' category often use online food delivery service application to order their meals if there are inadequacy of food choices in their university area. Also, the online distribution of food in Universiti Malaysia Kelantan has been on the increase as of late since the Malaysia government pronounced a Movement Control Order (MCO).

1.2 Problem Statement

The online food delivery services that are provided in Kelantan are GrabFood, Foodpanda and OdaMakan. According to Durai (2019) , an interview with Jeremy Lim, a vice president of Restaurant & Bistro Owners Association, said that around 30% of restaurants in Malaysia have closed their business since the beginning of COVID-19 pandemic. As we, students of Universiti Malaysia Kelantan have witnessed some restaurants in Kelantan have stopped operating due to COVID-19 pandemic. In order to increase the choice of meal, students use online food delivery services to fulfill their satisfaction.

During COVID-19 pandemic, demand for online food delivery has surged throughout the world (Gani et al., 2021) . Besides wishing for more food options, some students still prefer to stay at hostel because of social distancing. Demand for students who stay in Kelantan to eat by ordering food through online applications has increased. According to Pal et al. (2021) , service quality can be divided into two perspectives, such as delivery quality and food quality. After two years of studying online, students of Universiti Malaysia Kelantan have returned to study physically and the number of students has increased. During this period, there will be more online food ordering by students. Hence, students will experience service quality of online food ordering service.

This research aims to determine the effect of student satisfaction experiencing online food delivery service in Kelantan. It is very crucial to understand which factors affect student satisfaction towards online delivery service the most. Also, it is useful to study how reliability, responsiveness, assurance and empathy influence student satisfaction.

1.3   Research Questions

1.   How reliability affects Universiti Malaysia Kelantan student satisfaction towards online food delivery service in Kota Bharu?
2.   2. How responsiveness affects Universiti Malaysia Kelantan student satisfaction towards online food delivery service in Kota Bharu?
3.   How assurance affects Universiti Malaysia Kelantan student satisfaction towards online food delivery service in Kota Bharu?
4.   How empathy affects Universiti Malaysia Kelantan student satisfaction towards online food delivery service in Kota Bharu?

1.4   Research Objectives

1.   To determine the relationship between reliability and student satisfaction towards online food delivery service in Kota Bharu.
2.   To determine the relationship between responsiveness and student satisfaction towards online food delivery service in Kota Bharu.
3.   To determine the relationship between assurance and student satisfaction towards online food delivery service in Kota Bharu.
4.   To determine the relationship between empathy and student satisfaction towards online food delivery service in Kota Bharu.

1.5   Underpinning Theory

The Services Quality Model or Servqual Model was created and executed by the American showcasing masters Valarie Zeithaml, A. Parasuraman and Leonard Berny in 1998. It could be a strategy to capture and grade the benefits quality experienced by clients. At first, emphasis was set on the improvement of the quality framework within the zone of product quality. Over time, it becomes progressively imperative to move forward the quality of related administrations. Moreover, way better benefits quality can allow organizations a competitive advantage. The SERVQUAL Model is fundamentally a subjective investigation. In case a fulfillment overview primarily depends on the exchanges between provider and buyer, the watched quality is measured through nonexclusive, natural components. Thus, perceived quality serves as the foundation for the notion of quality as it is conceptualized in the literature on services.

According to Parasuraman, et al. (1988) and Zammuto et al. (1996), perceived quality defines consumer's real and own experience of using the product or service. Besides that, measurement enables comparisons, the identification of quality-related issues, and the creation of unambiguous service delivery standards. Edvardsen et al. (1994) state that, in their opinion, analysis and measurement serve as the foundation for creating high-quality services. The most popular strategy for assessing service quality is the servqual approach which is examined in this study. It uses five criterias to measure service quality and customer satisfaction, including tangible, reliability, responsiveness, assurance and empathy. In this study, researchers use reliability, responsiveness, assurance and empathy to measure the service quality and student satisfaction.

2   Previous Studies

2.1   Student Satisfaction

Student satisfaction has been defined as a short-term attitude which can be referred to as how students evaluate their results based on their experiences in higher education institutions (Oliver and Desarbo, 1988). Although most studies of student satisfaction focus only on the customer perspective, researchers face problems in creating a standard definition of student satisfaction. It has changed because there is a new entitlement that has made students as "customers". Customer satisfaction and service quality are considered important for the growth of a company to retain their customers. In this study, the customer is focusing on students of Universiti Malaysia Kelantan.

2.2   Reliability

Reliability is known as the company's measures to perform services in the correct conditions without making mistakes. It is a measure of the stability of the company's performance and how reliable the company is (Choy et al., 2013). A company should keep its promises to increase the level of customer trust in their company. Clearly here, the company needs take the right steps so that mistakes do not occur that will involve the loss of customer trust in the services offered. Reliability of food delivery services is an important factor for customers. They want the best service so that unwanted things do not happen such as food theft, slow food delivery and so on. Therefore, every employee should have a good responsibility in delivering food to customers at the right time. According to Millas (2013), customers will show a negative perception if employees make customers wait without a reasonable reason. Clearly, reliability is an important factor for customers to order food online.

2.3   Responsiveness

According to Kaemingk (2022), responsiveness is the willingness of a company to help customers to provide fast service. This factor also affects student satisfaction to use online food delivery services regularly. According to Newman (2016), responsiveness from customers is very important for companies because there are messages from customers. It talks about how they feel about the company's service or product. In fact, companies need to provide fast service to customers so that the company's name is seen by many people. The company should constantly monitor the way, efficiency and response from customers in order to understand the needs and expectations that make them feel satisfied with the company's service. From that observation, the company can improve its abilities and eliminate things that are not suitable to highlight to customers. Clearly this factor also affects student satisfaction in ordering food online.

2.4   Assurance

Assurance in service shows the service provider's ability for trust and confidence in customers (Isa & Ahmad, 2021). In order to provide assurance to customers, the company needs to have employees who are trained and have extensive knowledge about their duties. If there are skilled workers, they will ensure that their customers are given a good response and can solve customer problem queries. Clearly here, through employees, companies can provide trust and assurance to their customers. The assurance aspect is an important factor to meet customer satisfaction. This can be

proven where customers enjoy and approach their trusted seller. The relationship between assurance and customer satisfaction has been validated by several studies (Subashini, 2016). Assurance is a factor that has an important influence on customer satisfaction because employees who have confidence and related knowledge will increase their assurance.

2.5   Empathy

The variable of empathy in service underlines the individual attention given by a company. According to Isa & Ahmad (2021), empathy includes the need for communication between employees and customers to understand customers. The advantage for the company is being able to listen to customer feedback either physically or socially. It makes it easier for the company to understand the needs and wants of customers. In order to give maximum satisfaction to customers, companies need to give individual attention to customers to make them special and valued and this relates to empathy in the service provided. If a company provides exceptional service, customers are more likely to be satisfied. Therefore, the empathy factor also has an important influence on customer satisfaction in using online food ordering services.

2.6   Research Framework
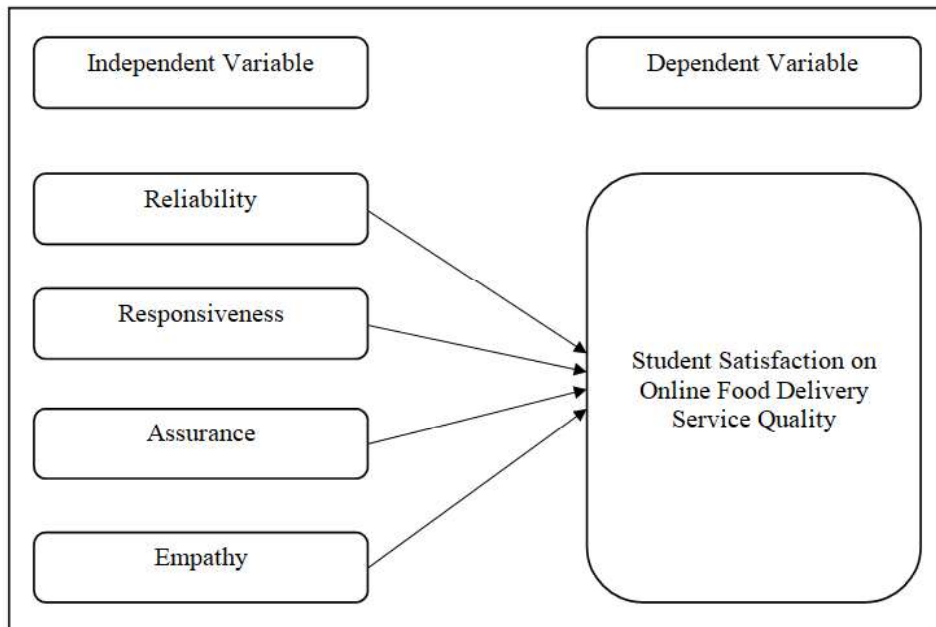
Figure 1: The Conceptual Framework of Study

2.7   Hypotheses Statement

H_1 : There is a significant relationship between reliability and student satisfaction.

H_2 : There is a significant relationship between responsiveness and student satisfaction.

H_3 : There is a significant relationship between assurance and student satisfaction.

H_4 : There is a significant relationship between empathy and student satisfaction.

3 Research Methodology

3.1 Research Design

Saunders (2022) stated that research design is an idea of answering research questions. A research design is considered as a framework comprising methods and procedures to collect, analyze and interpret data. In this study, a quantitative research method is used. It is to explore and understand the correlation between dependent variable which is student satisfaction on online food delivery service while independent variables are reliability, responsiveness, assurance and empathy. Primary data collection method involves questionnaires by approaching the SERVQUAL theory. All questionnaires will be filled by respondents from students of Universiti Malaysia Kelantan through Google forms.

3.2 Data Collection Method

The primary data collection method, which is the use of questionnaires have been chosen in this study. Primary data will be collected from respondents of Universiti Malaysia Kelantan students. A total of 368 questionnaires will be collected from the respondents.

3.3 Study Population

According to Creswell (2022), population is a group of individuals who have similar characteristics. The population of this study is located in Universiti Malaysia Kelantan and is focused on students who have experienced using online food delivery service. According to new research, the latest population of Universiti Malaysia Kelantan students is 8,587 students. Therefore, there are 8,587 students as the target population for this study.

3.4 Sample Size

Based on Krejcie and Morgan's table (1970), researchers have determined the sample size for this study from the total population in Universiti Malaysia Kelantan, Kota Bharu. Since the population size (N) of Universiti Malaysia Kelantan is 8,587, which is between the population size (N) of 8,000 and 9,000 in the table, the sample size of the Universiti Malaysia Kelantan is 368.

Table 1: Sample Size Determination Table by Krejcie and Morgan 1970

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—N is population size. S is sample size.

Source: Krejcie & Morgan, 1970

3.5 Research Techniques

It is proposed to use purposive or judgmental sampling to conduct the survey. This sampling technique enables researchers to utilize own judgment to select cases that will best qualify to answer the research questions and to fulfill the objectives (Etikan, 2016) where target respondents will be asked whether they have used online food delivery service before the questionnaires are distributed. This kind of sample is often applied when managing with very small sample such as in case study research where this research focuses in Universiti Malaysia Kelantan.

3.6 Research Instrument

In this study, the instrument used to collect data is questionnaire. The sample is being collected among students of Universiti Malaysia Kelantan who use online food delivery services in Kota Bharu. Using this instrument is the best way to handle easily when the questionnaire requires long time for the respondents to answer. Hence, the respondents' data from the questionnaires are easy to be collected and analyzed. The information and questions in the questionnaire are related to the research objectives.

Close-ended questions are asked in the questionnaire. Close-ended questions refer to questions that answered selecting from limited options or it can be asked using rating

scale. For example, it is used in quantitative research by asking multiple choice questions. The questionnaire is made up of three parts such as section A, section B and section C.

Section A consists of demographic of respondents which is gender, age, year of study and income level. Section B captures about student satisfaction on online food delivery service quality. Section C captures independent variables of this research, such as reliability, responsiveness, assurance and empathy. Section B and C includes questions using Likert Scale which is 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

3.7   Research Techniques

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3.8   Data Analysis

3.8.1   Descriptive Analysis

Descriptive analysis will result in respondents' demographic profile which consists of gender, age, year of study, monthly income and choice of delivery company are analyzed by using frequency, percentage tables and pie charts. The results of survey items of the independent variables and dependent variable are analyzed to obtain mean and standard deviation.

3.8.2   Reliability Test

Cronbach's Alpha test is used to run a reliability test so it can maintain interrelation of variable items in measuring the same variable and data gathered can form reliable and consistent result (Hair, 2022). Sekaran & Bougie (2016) has set a benchmark of Cronbach's Alpha value where it is rated excellent when it exceeds 0.8, greater than 0.7 is rated good while 0.6 is rated moderate. The following table shows the Cronbach's Alpha coefficient value.

Table 2: Cronbach's Alpha Coefficient Value

Alpha Coefficient Range	Strength
$0.01 - 0.50$	Unacceptable
$0.51 - 0.60$	Poor
$0.61 - 0.70$	Questionable
$0.71 - 0.80$	Acceptable
$0.81 - 0.90$	Good
$0.91 - 1.00$	Excellent

3.8.3 Normality Test

Skewness and kurtosis test is applied on the data collected to ensure the data collected to be normally distributed (Saunders, 2022). Normality test is conducted to verify the normality of collected data in order to carry out the assumption of parametric test (Norman, 2010). Kline (2022) stated that the result of skewness test should be within the range +/- 3 while the result of kurtosis should be within the range of +/- 10.

3.8.4 Pearson Correlation Analysis

Pearson Correlation analysis is applied to determine the correlation between two variables which include numerical data (Saunders, 2022). The connection among dependent variable and four independent variables will be determined by using Pearson Correlation.

Table 3: Pearson's Strength of Coefficient Relationship

Correlation Coefficient	Strength of Correlation
±0 to ± 0.20	Very Weak
±0.21 to ± 0.40	Weak
±0.41 to ± 0.60	Moderate
±0.61 to ± 0.80	Strong
±0.81 to ± 1.00	Very Strong

3.8.5 Multiple Linear Regression Analysis

Multiple Linear Regression analysis is implemented to examine the relationship between dependent variable and independent variables when the data collected is reliable and meet normality (Osborne & Waters, 2002). This study applied Multiple Linear Regression analysis because there are four independent variables and one dependent variable.

Table 4: Equation of Multiple Linear Regression Analysis

$Y= \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon$	
Y	Student Satisfaction on Online Food Delivery Service Quality
X1	Reliability
X2	Responsiveness
X3	Assurance
X4	Empathy
E	Error term

4 Result and Findings

4.1 Demographic Profile of Respondents

4.1.1 Respondents by Gender

Table 5: Number of Respondents by Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	201	54.6	54.6	54.6
	Male	167	45.4	45.4	100.0
	Total	368	100.0	100.0	

The number of male respondents are 167 (45.4%) and female respondents are 201 (54.6%) in Universiti Malaysia Kelantan. The dominated gender among the respondents is female.

4.1.2 Respondents by Age

Table 6: Number of Respondents by Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21-23 years old	332	90.2	90.2	90.2
	24-26 years old	28	7.6	7.6	97.8
	27-29 years old	3	.8	.8	98.6
	30 and above years old	4	1.1	1.1	99.7
	Below 20 years old	1	.3	.3	100.0
	Total	368	100.0	100.0	

The group of age 21-23 achieved highest number which is 332 (90.2%), and followed by age 24-26 with 28 (7.6%). The group of age 30 and above consists of 4 respondents (1.1%). Then, group of age 27-29 contains 3 respondents (0.8%) while there are 1 respondent is below 20 years old (0.3%). In Universiti Malaysia Kelantan, majority group of respondents' age is 21-23 years old. Thus, the group of age 21-23 achieved highest respondents in this survey.

4.1.3 Respondents by Year of Study

Table 7: Number of Respondents by Year of Study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Year 1	5	1.4	1.4	1.4
	Year 2	90	24.5	24.5	25.8
	Year 3	119	32.3	32.3	58.2
	Year 4	154	41.8	41.8	100.0
	Total	368	100.0	100.0	

The number of Year 4 students is the most, 154 responses (41.8%), followed by Year 3 students with 119 responses (32.3%). Meanwhile, there are 90 second year students (24.5%) and 5 first year students (1.4%) in this survey. There is physical class implemented in university that is why they are able to order food delivery and answer the questionnaire survey.

4.1.4 Respondents by Income Level

Table 8: Number of Respondents by Income Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No income	259	70.4	70.4	70.4
	RM1000 and below	81	22.0	22.0	92.4
	RM1001 – RM3000	26	7.1	7.1	99.5
	RM3001 – RM5000	1	.3	.3	99.7
	RM5000 – RM7000	1	.3	.3	100.0
	Total	368	100.0	100.0	

Table above has shown the highest respondents with no income, 259 respondents (70.4%). It followed by income RM1000 and below with 81 respondents (22%). There

are 26 respondents with income RM1001 – RM3000 (7.1%) while there is 1 respondent with both income RM3001 – RM5000 and RM5000 – RM7000.

4.1.5   Respondents by Choice of Online Food Delivery Company

Table 9: Number of Respondents by Choice of Online Food Delivery Company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Foodpanda	164	44.6	44.6	44.6
	GrabFood	156	42.4	42.4	87.0
	OdaMakan	48	13.0	13.0	100.0
	Total	368	100.0	100.0	

There are 164 respondents order food using Foodpanda (44.6%), 156 respondents order food using GrabFood (42.4%) and 48 respondents order food using OdaMakan (13%).

4.2   Descriptive Statistics of Dependent Variable and Independent Variables

Table 10: Descriptive Statistics of Dependent Variable and Independent Variables

	N	Mean	Std. Deviation
Student Satisfaction	368	4.5113	.87040
Reliability	368	4.4712	.88968
Responsiveness	368	4.4712	.89907
Assurance	368	4.4772	.90504
Empathy	368	4.4788	.89782

A total of 368 respondents participated in this survey. For dependent variable, student satisfaction has a mean of 4.5113 and standard deviation of 0.87040. Independent variables such as reliability, responsiveness, assurance and empathy have a mean of 4.4712, 4.4712, 4.4772 and 4.4788 respectively, and standard deviation of 0.88968, 0.89907, 0.90504 and 0.89782 respectively. The highest mean is empathy, which represents the students emphasize empathy the most.

4.3   Validity and Reliability Test

Table 11: Result of Reliability Test

Variable	Cronbach's Alpha	No. of Items	Strength of Association
Overall	0.990	26	Excellent
Students Satisfaction	0.965	6	Excellent
Reliability	0.951	5	Excellent
Responsiveness	0.955	5	Excellent
Assurance	0.955	5	Excellent
Empathy	0.957	5	Excellent

The overall result of this pilot test is 0.990, which is excellent sign in strength of association. This means that the variables can be accepted and the questionnaire is reliable in this study. The Cronbach's Alpha of dependent variable, student satisfaction indicates value of 0.965 which is in the range of excellent. The Cronbach's Alpha value of first independent variable, reliability is 0.951 which is in the range of excellent. The Cronbach's Alpha of second and third independent variables, responsiveness and assurance have a value of 0.955 which are in the range of excellent. While the fourth independent variable, empathy indicates Cronbach's Alpha value of 0.957, which is also in the range of excellent.

4.4   Normality Test

Skewness and kurtosis test is applied in this study to test the data normality with sample size of 368 and 5 variables.

Table 12: Univariate Skewness and Kurtosis

	Skewness	SE_skew	Z_skew	Kurtosis	SE_kurt	Z_kurt
Reliability	-2.694	0.127	-21.181	6.776	0.254	26.712
Responsiveness	-2.545	0.127	-20.014	5.875	0.254	23.161
Assurance	-2.614	0.127	-20.554	6.354	0.254	25.050
Empathy	-2.685	0.127	-21.113	6.783	0.254	26.739
Student Satisfaction	-2.877	0.127	-22.625	7.736	0.254	30.497

According to Kline (2022), the variables normality is acceptable if the value of skewness is within the range of ±3 whereas the value of kurtosis is within the range of ±10. Among all the variables, responsiveness has the biggest skewness value at -2.545 while student satisfaction has the smallest skewness value at -2.877. Besides, the greatest kurtosis value is 7.736 for student satisfaction while the smallest kurtosis value is 5.875 for responsiveness. The skewness test and kurtosis test of variable fall within the range of ±3 and ±10 respectively. Thus, the assumption of normality is met.

4.5   Pearson Correlation Analysis

Table 13: Pearson Correlation Coefficient

		Student Satisfaction	Reliability	Responsiveness	Assurance	Empathy
Student Satisfaction	Pearson Correlation	1	.944**	.941**	.935**	.930**
	Sig. (1-tailed)		.000	.000	.000	.000
	N	368	368	368	368	368
Reliability	Pearson Correlation	.944**	1	.945**	.941**	.933**
	Sig. (1-tailed)	.000		.000	.000	.000
	N	368	368	368	368	368
Responsiveness	Pearson Correlation	.941**	.945**	1	.935**	.933**
	Sig. (1-tailed)	.000	.000		.000	.000
	N	368	368	368	368	368
Assurance	Pearson Correlation	.935**	.941**	.935**	1	.938**
	Sig. (1-tailed)	.000	.000	.000		.000
	N	368	368	368	368	368
Empathy	Pearson Correlation	.930**	.933**	.933**	.938**	1
	Sig. (1-tailed)	.000	.000	.000	.000	
	N	368	368	368	368	368

**. Correlation is significant at the 0.01 level (1-tailed).

In this study, the significance values of reliability, responsiveness, assurance and empathy are 0.000. Hence, all of the independent variables in this study are significant because their significance value is less than 0.05.

The Pearson correlation coefficient values of reliability, responsiveness, assurance and empathy are 0.944, 0.941, 0.935 and 0.930 respectively. This interprets that there is a very strong correlation between student satisfaction on online food delivery service (dependent variable) and reliability, responsiveness, assurance and empathy (independent variables). It is proved that 94.4% of student satisfaction influenced by reliability, 94.1% of student satisfaction influenced by responsiveness, 93.5% of student satisfaction influenced by assurance and 93% of student satisfaction influenced by empathy.

4.6   Multiple Linear Regression Analysis

Table 14: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.961ᵃ	.924	.923	.24193

a. Predictors: (Constant), Reliability, Responsiveness, Assurance, Empathy

Based on table above, R-square scores 0.924. This indicates that 92.4% of the variation of dependent variable, student satisfaction can be clarified by the independent variables comprising of reliability, responsiveness, assurance and empathy. To the contrary, the remaining 7.6% of the dependent variable can be regarded to other determinants that are not tested in this research.

Table 15: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	256.789	4	64.197	1096.804	.000ᵇ
	Residual	21.247	363	.059		
	Total	278.036	367			

a. Dependent Variable: Student Satisfaction
b. Predictors: (Constant), Reliability, Responsiveness, Assurance, Empathy

Based on table 15, the outcome obtained shows that F-value in this research is significant with a score of 1096.804 because the significance value is 0.000 which is less than 0.05. Hence, the result indicates that at least one of the four independent variables tested has a significant relationship with dependent variable, student satisfaction. Therefore, it supports that the research model applied in this research is adequate.

Table 16: Coefficient Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.241	.066		3.671	.000
	Reliability	.310	.051	.317	6.025	.000
	Responsiveness	.286	.049	.295	5.820	.000
	Assurance	.193	.049	.200	3.935	.000
	Empathy	.166	.047	.171	3.539	.000

a. Dependent Variable: Student Satisfaction

Based on table above, the significance value of reliability, responsiveness, assurance and empathy are all 0.000 (less than 0.05) which means they are significant.

Equation:

Student Satisfaction = 0.241 + 0.310 (Reliability) + 0.286 (Responsiveness) + 0.193 (Assurance) + 0.166 (Empathy)

This equation implies that all independent variables possess a positive relationship with the student satisfaction. Based on the equation, we can conclude that if reliability, responsiveness, assurance and empathy increased by 1%, the student satisfaction will increase by 31%, 28.6%, 12.43%, 19.3% and 16.6% respectively. The value of intercept indicates the mean value of student satisfaction when all independent variables are equal by 0. In short, reliability is showed to be dominant independent variable which has the strongest impact on student satisfaction.

5 Discussion

Table 17: Summary of Result

Variables	Hypothesis	Pearson Correlation	Result
Reliability	There is a significant relationship between reliability and student satisfaction.	0.944	Accepted
Responsiveness	There is a significant relationship between responsiveness and student satisfaction.	0.941	Accepted
Assurance	There is a significant relationship between assurance and student satisfaction.	0.935	Accepted
Empathy	There is a significant relationship between empathy and student satisfaction.	0.930	Accepted

The relationship of reliability is tested against students' satisfaction in Universiti Malaysia Kelantan. It has a Pearson correlation value of 0.944. There is a very strong correlation between reliability and student satisfaction in Universiti Malaysia Kelantan. Thus, H_1 is accepted.

The relationship of responsiveness is tested against students' satisfaction in Universiti Malaysia Kelantan. It has a Pearson correlation value of 0.941. There is a very strong correlation between responsiveness and student satisfaction in Universiti Malaysia Kelantan. Thus, H_2 is accepted.

The relationship of assurance is tested against students' satisfaction in Universiti Malaysia Kelantan. It has a Pearson correlation value of 0.935. There is a very strong correlation between assurance and student satisfaction in Universiti Malaysia Kelantan. Thus, H_3 is accepted.

The relationship of empathy is tested against students' satisfaction in Universiti Malaysia Kelantan. It has a Pearson correlation value of 0.930. There is a very strong correlation between empathy and student satisfaction in Universiti Malaysia Kelantan. Thus, H_4 is accepted.

The highest correlation among the four independent variables is reliability. This shows that reliability is showed to be dominant independent variable which has the strongest impact on student satisfaction.

6 Recommendation

To include an effective way to complete the proposal without sitting around, we suggest to all the analysts to form advance considerations with respect to all variables that they need to select some time recently, continuing to the specific factors. An extra proposal in this consideration is to include moderator and mediator variables as other components that influence the relationship between independent and dependent variables in future research. In addition, to increase respondents, online food delivery applications must be user friendly, helpful to utilize and open to any sort of shoppers especially within the gadget they are using. This is because, if the application is easy to use, then many students will use it and will automatically increase the number of respondents for this study. Related organization should improve their service in the future so they are able to attract more students.

7 Conclusion

In conclusion, the main purpose of this study is to identify student satisfaction in using food delivery services in University Malaysia Kelantan. Reliability, responsiveness, assurance and empathy are the important dimensions for the satisfaction of the student for food delivery services, marketers need to be vigilant in increasing empathy so that they can understand the needs of students in food delivery services. This is because it can multiply strategies that are sufficient to respond to the needs of students that lead to student satisfaction. Among the suggestions made are to increase the quality of services that are considered high will increase student satisfaction in using food delivery. Various ways are created and encouraged so that franchisees or wholesalers do not create and improve customer expectations that do not meet customer needs. This is because it will result in a low perception thus causing customer dissatisfaction. Finally, this study only examines the role of online food delivery service quality in influencing satisfaction and loyalty among students of Universiti Malaysia Kelantan. Researchers have achieved objectives and all hypotheses are accepted.

8 Acknowledgement

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The Study on Factors Affecting Online Food Delivery Services Among Students in University Malaysia Kelantan

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Abstract:

Online food delivery (OFD) services have recently been a new phenomenon in Malaysia, with various online food applications. Reaching customers and offering them high-quality services are the goals of online food delivery (OFD) providers. Therefore, this study aims to study factors affecting online food delivery services among students in University Malaysia Kelantan (UMK). A quantitative method is used in completing this research. A simple random sampling is used to collect data, and the structured questionnaire was designed to collect data among student at the University Malaysia Kelantan. The statistical package for sciences (SPSS) version 28 was used for data analysis. The result concluded that the independent variable of service quality, price, and delivery time have a significant relationship with online food delivery services in University Malaysia Kelantan. Limitations of this study and recommendations are included in this study to give a better idea for future researchers related to studies involving online food delivery services in University Malaysia Kelantan.

Keywords: service quality, price, delivery time, online food delivery services

1   Introduction

Today's consumer beliefs and behaviors are changing fast by influence with new technologies. This makes changes in consumer purchasing power which is the consumers can use online platform to purchase or full fill their needs and wants. Now, the online food delivery service is the new wave growth among consumer by globally. Food delivery services are somewhat similarly to courier services in that the consumer receives the ordered meal from the restaurant by delivery agents of a food ordering service (FarEye, 2022).

Online food ordering is the process of placing a food order from a website or other application, either for delivery or pickup. Food that hasn't been specially prepared for direct consumption or food that is ready to eat can both be considered products. Online food delivery system is one of the technologies that has been created to simplify the food business. By, the new technologies of online food delivery service we can purchase the goods and services anywhere, anytime in seven days a week, without having to consider the location (Ramli et al., 2021). The improvement of technology,

online food delivery systems are becoming popular among young generation especially among students.

In 2017, around 97.7% of the young generation, such as university students, used smartphones to carry out their daily tasks (Tech, 2020). Most people these days, and college students, in particular, prefer to spend their leisure time at home browsing the internet. Most students are using smartphones to carry out their daily tasks as a student and purchase products and services via online platforms. Living as a student at university, they have insufficient time while deal with academic tasks. Due to this situation, online food delivery (OFD) services are helpful among students in considering save their luxury time to study. Even though online food delivery (OFD) services give benefit to students, it also has several issues that can affect students' satisfaction. Therefore, this research will assess the factors affecting online food delivery services among students, especially in University Malaysia Kelantan, for the year 2022. This research paper also will discuss about how services quality, price, and delivery time will affect student University Malaysia Kelantan (UMK) satisfaction on online food delivery (OFD) services. There were three objectives of this research:

1) To identify the relationship between service quality and online food delivery among students in University Malaysia Kelantan.
2) To identify the relationship between price and online food delivery among students in University Malaysia Kelantan.
3) To identify the relationship between delivery time and online food delivery among students in University Malaysia Kelantan.

2 Literature review

2.1 Online food delivery service

In this era of modernization, the online food delivery services industries are expanding quickly (Dalin-Kaptzan, 2022). Online food delivery services and the existing of numerous online food applications have already become a new occasion in Malaysia with the purpose of able to reach customer needs and fulfil their wants and satisfaction. Customer are offered with an excellent method such as numerous of benefits because they able to order food online practically anytime and anywhere which able to save their time as one of the main reasons (Orpilla, 2020). The Marketers are looking to increase client behaviors through online food delivery service and also identify the main factors of purpose in order to provide economic potential. Besides, the boosts of the appeal of online food delivery service also due to customers are influenced to live a complicated and on-the-go lifestyle, seeking time saving and quickly meal. The development of mobile application has also created a new avenue for marketing today.

People are increasingly resorting to online food delivery service due to the advantages since it gives them a chance to try out different type of restaurants that can be found through online food delivery application (Christensen, 2023). When it comes to university students, most of the time students are using their smartphone to carry out their daily tasks and this caused them of knowing the existing of numerous online food applications where they also realize that it comes with many kinds of benefit that able to help and assist them on their daily life as a student while studying at university

(Christensen, 2023). Even though the online food delivery service offers numerous of benefits for university students, it also has several issues or factors that able to affect students' satisfaction in different kind of view.

2.2   Service quality

This research has carried out the service quality is one of the factors that affecting online food delivery services among students in University Malaysia Kelantan. The definition of service quality means it is perceptions that come from a comparison of consumer expectations with actual service performance. Service quality is a technique for boosting food delivery service to its efficiency and productivity. Service quality is essential because it helps businesses increase revenue by fulfilling customers and promoting repeat business (Suhartanto et al., 2019).

2.3   Price

This research has also carried out with the price as one of the factors that affecting online food delivery services among students in University Malaysia Kelantan. The price is the amount of money that a party requires in a purchase agreement in order to exchange for a product or service. Customer' satisfaction with online food delivery service can be measured by the amount of money they can save by using it. When it comes to university students, price become more important factor to discuss as the online food delivery service is popular among them because various of the advantages such as the ability to deliver the food to the doorsteps, variety of payment options and also appealing discounts which have a direct connection with the factor of price.

2.4   Delivery time

The delivery time is the third factor to carried out in this research as it also one of the factors that affecting online food delivery services among students in University Malaysia Kelantan. The duration of time taken in online delivery service has a significant influence on customers' satisfaction (Bielen & Demoulin, 2007). Any delivery delays will reduce the customers' satisfaction which will result in negative impact of how customers are seen (Nazifa Insyirah binti Azman & Ibrahim, 2021). When it comes to university students, the online food delivery service is able to help them to save their time by ordering meals and having it delivered to them which is very convenient.

2.5   Hypotheses Statement

The figure below has shown that the research framework that had been developed based on factors affecting online food delivery among students in university Malaysia. This research also contains three hypotheses.

H1: There is a positive relationship between service quality and online food delivery among students in University Malaysia Kelantan

H2: There is a positive relationship between price and online food delivery among students in University Malaysia Kelantan

H3: There is a positive relationship between delivery time and online food delivery among students in University Malaysia Kelantan.

2.6 Research framework
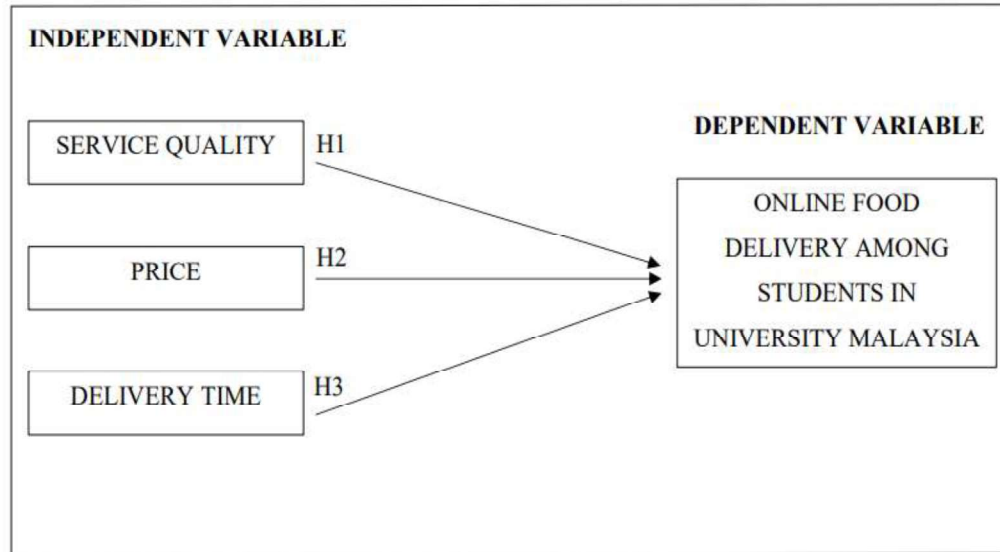
Figure 1: Research framework for the factors affecting online food delivery service among students in University Malaysia Kelantan

3 Methodology

This research the researcher used the primary and secondary data sources, an online questionnaire, to gain deeper of respondents understanding or their opinion in order to achieve the objective of this research. Therefore, the primary data is gathered via an online survey method, to carry out this research a set of questions were created in Google Form and sent to the intended respondents via social media such as Facebook and WhatsApp. Next, secondary data that another person has gathered for an explanation other than the current review. The supporting evidence for this study comes from the secondary data. The secondary data will gather information about the Factors affecting online food delivery services among students from a variety of sources, including journalists and include government distributions, references from academic books, articles, include government distribution and journals.

The population that the researchers are focusing on for this study is University Malaysia Kelantan (UMK) students. University Malaysia Kelantan is the 19th public university to be established and it was located in one of the states in Malaysia which is called Kelantan. Besides that, it has three campuses located in difference area in Kelantan. It has the main campus which is in Bachok, the secondary campus in Jeli as well as the temporary campuses in Pengkalan Chepa. The sample group will be focused the students who are from the Faculty of Entrepreneurship and Business (FKP) which included or offered the courses of Commerce (SAK), logistics and distributive trade (SAL), Retailing (SAR), Islamic Banking and Finance (SAB), Health Entrepreneurship

(SAW) and so on. The researchers are estimated that the total number of students who are from the faculty is 3451 students.

To conduct this research, the online questionnaires will be prepared and distributed using Google Form to collect information from the target respondents, students in University Malaysia Kelantan. There have three sections we used questionnaire in this study which is Section A, Section B, and Section C. The information and demographic information of the respondents are covered in Section A. Next, the section B connection to the dependent variable which is online food delivery among students in University Malaysia Kelantan. While, the next section is section C related to the independent variables which are price, delivery time and service quality.

Additionally, this research used two different types of variables: ordinal and nominal data. This approach was chosen to help in the hunt for more precise data needed to finish the investigation. The nominal scale is used by researchers to categorise or group people into groups or categories. For ordinal, the respondents in this study will answers to questions based on a Likert scale that were developed for the independent and dependent variables.

4   Result and Discussion

4.1   Pre-Testing of the Instrument (Pilot Test)

In order to make sure that the questionnaire can be used for the research, a pilot test was conducted to test the validity and reliability of the questionnaire. Researchers distribute questionnaires for pilot test through Google Form and collected 349 respondents to be used as information in the pilot test.

Table 1: Result of Reliability test for independent variables and dependent variables

Variables	Cronbach Alpha	Number of Item
Online food delivery among students in Universiti Malaysia Kelantan	0.861	6
Service Quality	0.832	5
Price	0.842	5
Delivery Time	0.872	5

Table 1 show that the value of each section of questionnaire is acceptable because it is more than 0.800 of Cronbach alpha. The most notable value of Cronbach Alpha is policing, which is 0.872 for delivery time (IV3) in the survey, and the least significant value of Cronbach Alpha is cost separation, which is 0.832 for service quality (IV1) in the research. As a result, the survey is robust and may be utilized in this test since the absolute value of Cronbach Alpha for all components is 0.872, which is within the range of a remarkably strong and good relationship. All independent factors which is service quality, price, and delivery time are reliable among students in the University Malaysia Kelantan.

4.2   Demographic Profile of Respondents

In this study, there are six demographic questions were asked of respondents, including gender, age, race, monthly income, course of study, and use of a food delivery app. This

section covered the basic demographic profile of 349 respondents who responded to the question using the google form that was sent. Respondent demographic information has been displayed with a clear explanation. The information discovered has been represented using table.

Table 2: Gender of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	93	26.6	26.6	26.6
Female	256	73.4	73.4	100.0
Total	349	100.0	100.0	

Table 3: Age of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
19 - 21 years old	47	13.5	13.5	13.5
22 - 25 years old	271	77.7	77.7	91.1
26 - 29 years old	16	4.6	4.6	95.7
30 - 33 years old	4	1.1	1.1	96.8
34 years old and above	11	3.2	3.2	100.0
Total	349	100.0	100.0	

Table 4: Race of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Malay	201	57.6	57.6	57.6
Chinese	34	9.7	9.7	67.3
Indian	97	27.8	27.8	95.1
Others	17	4.9	4.9	100.0
Total	349	100.0	100.0	

Table 5: Monthly Income of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
RM0 - RM999	269	77.1	77.1	77.1
RM1,000 - RM1,999	43	12.3	12.3	89.4
RM2,000 - RM2,499	14	4.0	4.0	93.4
RM2,500 - RM2,999	9	2.6	2.6	96.0
RM3,000 and above	14	4.0	4.0	100.0
Total	349	100.0	100.0	

Table 6: Course study of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
SAE	33	9.5	9.5	9.5
SAL	139	39.8	39.8	49.3
SAB	48	13.8	13.8	63.0
SAK	73	20.9	20.9	84.0
SAR	56	16.0	16.0	100.0
Total	349	100.0	100.0	

Table 7: Usage of food delivery app

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	340	97.4	97.4	97.4
No	9	2.6	2.6	100.0
Total	349	100.0	100.0	

4.3 Reliability Test

This section discussed the reliability of this research's questionnaire that represents the dependent variable, online food delivery services among students University Malaysia Kelantan and dependent variable, which is services quality, price, and delivery time. In this section, Cronbach's alpha of every question for each variable and section was analysed and presented.

Table 8: Summary of Reliability

Variables	No of Item	Cronbach's Alpha	Relationship
Services Quality	5	.865	Good
Price	5	.805	Good
Delivery Time	5	.903	Excellent
Online Food Delivery Services Among Student in Universiti Malaysia Kelantan	6	.848	Good

4.4 Normality Test

The SPSS framework was used to check and evaluate the information's ordinariness. In this research, the ordinariness of the data was examined using the Kolmogorov-Smirnov and Shapiro-Wilk tests. There are two ways to understand circulation: common and strange appropriation. Any factors with a p-esteem below 0.05 included information concerning irregularity. Table 9 displays the results of the Kolmogorov-Smirnov and Shapiro-Wilk tests used to determine whether all research variables were normally distributed. Because the data did not follow a normal distribution, the results of each test reveal that all significant values, or p, are 0.000, which is less than 0.05. This means that the data is abnormal.

Table 9: Result of Normality Test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Service Quality	.153	349	.000	.841	349	.000
Price	.123	349	.000	.934	349	.000
Delivery Time	.168	349	.000	.898	349	.000
OFD Services Among Student in UMK	.145	349	.000	.907	349	.000

a. Lilliefors Significance Correction

4.5 Hypotheses Testing (Pearson Correlations Analysis)

Table 10: The Pearson Correlation between Service Quality and Online food delivery services among student

			Online food delivery services among student	Services Quality
Pearson Correlation	Online food delivery services among student	Correlation Coefficient	1.000	.675
		Sig. (2-tailed)	.	.000
		N	349	349
	Services Quality	Correlation Coefficient	.675	1.000
		Sig. (2-tailed)	.000	.
		N	349	349

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

Table 11: The Pearson Correlation between Price and online food delivery services among students

			Online food delivery services among student	Price
Pearson Correlation	Online food delivery services among student	Correlation Coefficient	1.000	.648
		Sig. (2-tailed)	.	.000
		N	349	349
	Price	Correlation Coefficient	.648	1.000
		Sig. (2-tailed)	.000	.
		N	349	349

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

Table 12: The Pearson Correlation between Delivery time and online food delivery services among students.

			Online food delivery services among student	Delivery Time
Pearson Correlation	Online food delivery services among student	Correlation Coefficient	1.000	.699
		Sig. (2-tailed)	.	.000
		N	349	349
	Delivery Time	Correlation Coefficient	.699	1.000
		Sig. (2-tailed)	.000	.
		N	349	349

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

5   Discussion and Conclusion

5.1   Implication of the study

This study aimed to understand the factors affecting student purchasing behaviour on online food delivery services among students in University Malaysia Kelantan. To maintain student satisfaction, it is necessary to highlight some of the key implications of the review's overall findings in online food delivery services. Carrying out this research assists in supporting the students to get more satisfaction with online food delivery services with a variety of new ideas on online food delivery services. Based on the finding of this study, students are looking forward to online food delivery services based on three factors: service quality, price, and delivery time, which is it can affect the demand of online food delivery services among students in University Malaysia Kelantan. In addition, the online food delivery services company like Foodpanda, Grabfood, Lala move, need to understand the needs of customer based on their demographics' profiles. It is because demographic help to give better understand background characteristics of an customers through demographic data, such as their age, race, ethnicity, income, occupation, marital status, and so on. The study also provides a better idea for online food delivery services companies in improving their services from the aspect of services quality, price and delivery time. As we know the price of online food delivery services was not affordable for students to purchase. From this perspective it shows that the range between student income and the services price. By doing a reduced price in OFD services like providing special discount or promote code to students, it can keep student to using OFD services. The main purpose of online food

delivery services is to give a better lifestyle for user like saving time and money. From this perspective, online food delivery services will be the main choice among students to purchase food from online food delivery services in the purpose of saves time and money. A Lack of delivery time information in OFD services have shows a range between OFD services management and student satisfaction. In this situation, OFD company such as Grab food, food panda, and etc should to responsive with their services management in order to keep their services relevant with market demand.

5.2   Limitations of the Study

Discovering a limitation can be an important opportunity to identify new literature gaps and describe the need for further research. This research presented useful theoretical and managerial information; it is still not free from limitations that give rise to new future research. The first limitation is the limited sample size to represent the whole population of students in University Malaysia Kelantan. Due to time and resource constraints, the researchers have received only 349 respondents. Because of this, the outcome has been constrained, and it's possible that the self-important accuracy of satisfying objectives required for this review has gone unaddressed. Besides that, the questionnaires have only been made in google form. From this perspective, it may have been difficult for respondents to understand and respond to the questions compared to the physical form. There are some lacking parts from the long phase of questions in the questionnaire that has been given to respondents. Although it was helpful as the respondents could rapidly and advantageously answer the survey, there still has been some lack in determining the real information due to the respondents' answers being ineffective because of time and asset limitations. Moreover, this study was carried out on the UMK campus at Pengkalan Chepa, Kota Bharu, Kelantan only. As a result, only students from the UMK Campus Pengkalan Chepa responded to the survey, which had a limited duration. Because it only includes the states of Kelantan and the UMK campus Pengkalan Chepa, this study is not exhaustive. Therefore, these studies are not relevant for use in UMK campuses in Bachok and Jeli, as well as other universities outside of the state of Kelantan. The findings may alter if the study was conducted in a different place or at a different time period.

5.3   Recommendations of the study

After conducting this study, the researchers identified areas for future research quality improvement. In term of the Service quality, it has to improve the online food delivery service app which give quick response for customers' enquiry and need to improve the food riders' service. This is because the most respondents are less agreed with this questionnaire. A quick customer service was important in business, it help to increase sales and it inspires customer loyalty. In term of the Price, online food delivery company should considerate the delivery price. It is because most of students less agreed for the question "I think delivery price of online food delivery services is reasonable". In this we can see most of students answer the price of food delivery price is not reasonable. The online food delivery app can give more promotions and offers especially for students. This can help students to buy more foods in online. Moreover, in term of the delivery time, make sure that the delivery time are punctual by the time it should arrived. Most of the students are less agreed that the time taken to deliver the food is fast or even earlier than the estimated time. Timing is very important in online food delivery services. It is because on time delivery services can increases customer

loyalty. Furthermore, in order to give some suggestion for the future researchers, the sample size in future research might be widened. This is due to the fact that all of the responses were from FKP students in UMK City Campus. Future researchers should conduct their studies on all three campuses of UMK to increase the sample size.

Next the researcher recommended having a multi-language question in order to eliminate partiality in this research, it should provide English, Malay, Chinese, and Tamil translations of the survey. The addition of multiple languages in the survey can help respondents who are unable to understand the entire English version of the question to a greater level. Additionally, the respondents can select their preferred language to respond in, enabling them to understand the test questions and ensuring the accuracy of the results. In addition, the researcher provides a number of recommendations to improve the study's findings. To gather data, researchers need to schedule enough time. Time management was crucial in order to assign tasks and collect all sample respondents within a set time frame. Next, researchers recommend select the most suitable respondent to complete the entire distributed questionnaire. Researchers will get good results this way since the respondent has time to read and can honestly answers the question. The respondent may also be given a period of time by the researchers to complete the questionnaire from outside working hours. Last but not least, future researchers should concentrate on methods like the direct approach, which was a face-to-face method during data collecting in order to explain the questions in a questionnaire. This method of gathering data was more truthful, and respondents provided accurate responses. Therefore, in order to improve the study's findings, future researchers may want to take the suggestion into consideration.

5.4   Conclusion

In conclusion, the piece sums up the whole part of this review. The aim of this study was to investigate Factors affecting online food delivery services among students in University Malaysia Kelantan. In this research we conducted three independent variables which is service quality, price, delivery time and one dependent variable which is online food delivery among students in University Malaysia Kelantan. There were 349 questionnaires that have been collected from the FKP students in Universiti Malaysia Kelantan. Those independent variables and dependent variables were analyzed by Pearson Correlation Coefficient to determine the relationship between dependent variable and independent variables and linear regressions to identify the Factors Affecting Online Food Delivery Services among Students in University Malaysia Kelantan. The result of Pearson Correlation analysis has shown a positive relationship between the independent variables and the dependent variables. From the findings of Pearson Correlation Coefficient, this study revealed that service quality, price, and delivery time have significant relationship with the dependent variables. Overall, the findings in this study can indirectly help to provide information to the business people or future researchers to understand, examine the factors affecting online food delivery services among students.

6   Acknowledgements

First of all, we would like to acknowledge the help of University Malaysia Kelantan (UMK) for providing us with this opportunity to be involved in this research project, a

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The Factors Affecting the Online Food Delivery towards Customer Service Satisfaction in Universiti Malaysia Kelantan City Campus

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Abstract:

This study aims to identify the factors that affect online food delivery and customer satisfaction among UMK students on City Campus. The research data used in this study are gained by the quantitative method with a total of 362 respondents. By using the SPSS tools, the researchers analyze data with descriptive analysis, Reliability Test, Pearson Correlation coefficient, and the Hypothesis Testing result. The findings include Efficiency, Fulfilment, Privacy, and Responsiveness are significant factors that affect online food delivery and Customer Satisfaction. The implications shall implement a better understanding of the online food delivery service and a bigger view of the industry. References are included in the research to strengthen the study of factors that affect the online food delivery and the customer satisfaction.

Keywords*: Customer satisfaction, Online Food Delivery, Efficiency, Fulfilment, Privacy, Responsiveness*

1   Introduction

1.1   Background of Study

In this globalization era, online food delivery (OFD) rises up drastically. Despite the increasingly strict lockdown rule, OFD had generously developed itself as the most essential trend all over the world by the year 2020 and 2021 (Durai, 2020). According to the Malaysian Communications and Multimedia Commission (2020), 64% of the 28.4 million Malaysians who are using the mobile phone to access the internet made an online meal purchase from a restaurant's online food ordering and delivery service. Technology plays a significant role in our daily lives, increasing accessibility as a result of the quickening pace of technological innovation (Kammerzelt, 2018). As a result, it now permeates people's daily lives all over the world. OFD platforms are involved in securing customers' orders and transferring this data to the various restaurants and delivery workforce (Troise et al., 2021). This enables the way for restaurants to enter new markets, increasing their income, while also providing customers with the convenience of having food delivered to their doorstep (Hirschberg, 2016). More precisely, it changes the manner in which they choose the goods or services that will

satisfy their needs and desires. Customers utilize food delivery services for a variety of reasons but the most popular of which is the need for fast and convenient meals during or after a long day at the office. This new marketing strategy aims to increase sales and capture larger market shares in the food and beverage sector, either through collaborations with meal delivery services such as Foodpanda or restaurant as in McDonalds.

1.2   Problem Statement

The online food delivery has been significantly impacted by the rise of the internet and other technology advancements (Anon, 2021). Considering the large majority of people nowadays spend a significant part of their day online. This creates a big opportunity for the food industry and the number of people who choose to purchase food from restaurants online is increasing dramatically (Anon, 2020). Despite the increasing demand of online delivery, there are a few problems that hinder customers from choosing online food delivery. On the other hand, a user who has already made an online purchase feels less doubtful and thus is more likely to make another one in the future (Gagah Probowo, 2018).

The efficiency of the online food delivery application tends to influence the consumer's perception. This study shows how the efficiency of the online delivery application can affect customer satisfaction. During the years, customers had experienced multiple setbacks regarding the food delivery system. Based on the article from Anon (2021), many individuals are exhausted, stressed out, or misled by efficiency, all of which contribute to the application's overwhelming popularity.

Besides that, there are multiple online delivery platforms throughout the Internet. But, the one that fulfils customers' expectations will attract more potential customers. According to Zulkarnain Kedah (2015), late deliveries and ignoring consumers will trigger dissatisfaction with the service because they expected more. Late delivery usually happens due to the bad weather climate. When it comes to delivery services, putting an emphasis on employee safety is an absolute essential. There is only so much that delivery businesses can do to ensure that packages are delivered on time, especially when the pace of delivery is determined by the weather.

Furthermore, customers are aware of their personal details being collected for delivery. But some customers don't even trust the applications that are collecting their personal data. The online food delivery typically collects a large amount of data from their consumers, including home address, phone numbers, and even credit card information. The rise in privacy concerns can be referred in large part to customers' rising awareness of how businesses use their personal information (Swish, 2020). People's fear around data gathering is growing, which is making them less likely to share personal information (Whitney, 2021).

Lastly, whether it's about delivery delays, discontent with the cuisine, problems about payments and refunds, or any other general questions and complaints, customers will want to contact the person in charge and feel heard (Batra,2022). Customer service response plays an important role in dealing with customers. Having a bad customer

service response to customers and also late reply in customer's complaints or feedback
will result in disaster for the OFD companies.

2   Literature Review

2.1   Customer Satisfaction

Customer satisfaction is a metric used to measure the degree to which a customer is
satisfied with a product, service, or experience associated with organization
(Bernazzani, 2022). Customer satisfaction solves problems, prevents loss of customers,
and identifies satisfied customers who can become supporters and ambassadors.
Customer loyalty, delight, and favorable word-of-mouth depend on it. Liu et al. (2017),
claimed that the quality of the food and the service were important factors in
determining customer preference for the restaurant, and that the quality of the food is
the most significant aspect. It is essential to maintain a high level of service quality in
order to achieve competitive advantages (Zhuanget al., 2021).

2.2   Efficiency

In order to provide effective customer satisfaction, online food delivery needs to serve
the most efficient service that attracts customers to maintain sales and relation.
Customers usually focus on the features that any food delivery service must have for
consumer convenience. It's crucial to advertise their products, especially when the
customers ask for it, in order to draw more attention to their company and the services
they give. According to (Yeo et al. 2017), have attempted to explain how customers'
experiences with online food delivery services are affected by factors like convenience,
hedonism encouragement, time-saving alignment, online purchase intention experience,
consumer behavior, and behavioral intention to influence customers while using such
applications. Based on the problem, the unfriendly user application gave customers a
headache on purchasing the food with multiple cuisines.

2.3   Privacy

Privacy was described by Belanger et al., (2002), as the probability of accessing,
copying, using, and destroying one's own personal information. Name, phone number,
mailing address, bank account, email address, password, and other examples of personal
information. Customers are feeling more uneasy about how and where their personal
information is used during online transactions as a result of the numerous highly
publicized news stories about the breach of personal data by well-known companies.
Many consumers choose not to buy things online because of concerns about their
privacy, poor delivery service, credit card fraud, inadequate after-sale support, and other
related issues (David Ng., 2019).

2.4   Fulfilment

Fulfilment is defined as the process of getting goods, processing them, and delivering
orders to customers. The procedure is considered complete once the order that was
placed by the customer has been delivered to them. If a customer decides to return an
item, the process will also be handled by the company responsible for fulfilling the
original order (Kristina, 2018). Therefore, in the context of this study, the fulfilment

aspect is connected to consumers' judgments of how easy it is to purchase food online. It also relates to how consumers perceive the steps involved in the purchasing process up until the results of their online orders (Liu et al., 2019). This demonstrates that one of the elements influencing consumers' attitudes toward using an online meal ordering and delivery service is how easy the system and service are to use (Mun et al., 2017).

2.5 Responsiveness

Responsiveness can be defined as the efficiency of speed and quality for companies to respond to their customers (Snigdha, 2022). The strategy involves being able to identify the wants and expectations of consumers while reacting appropriately and effectively towards such shifts in demands. The ability to accurately respond to the needs of consumers gives businesses an advantage over the other competitors. Customers that are dissatisfied with the service they receive might be a valuable source of information for the business (Amrita, 2019). It is important not to disregard the reviews and comments left by consumers on the portal. It is important to gain knowledge from a consumer's past experience in order to enhance food quality and delivery speed.

2.6 Hypothesis Statement

The research's hypotheses are as follows:

H0: The relationship between efficiency and customer satisfaction.

H1: The relationship between privacy and customer satisfaction.

H2: The relationship between fulfilment and customer satisfaction.

H3: The relationship between responsiveness and customer satisfaction.
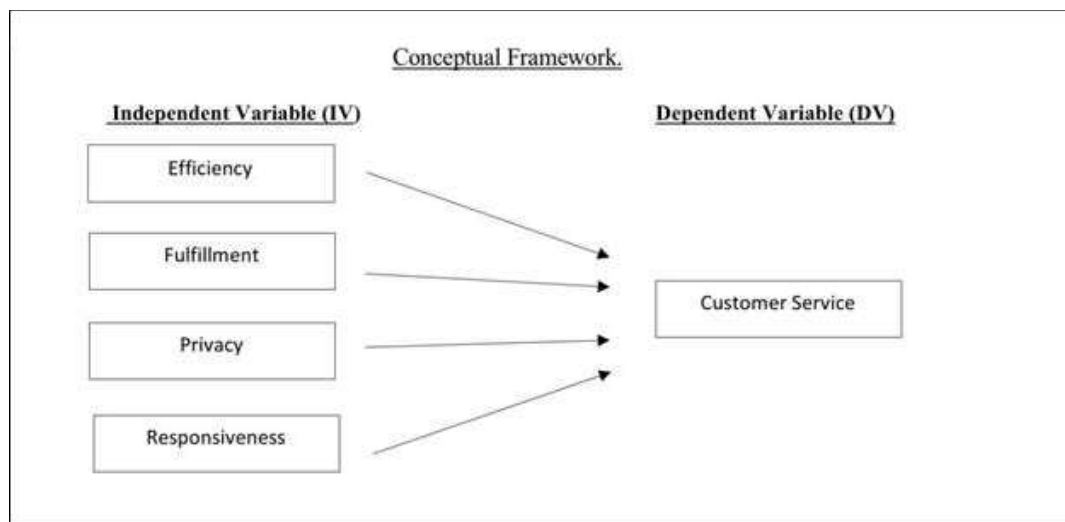
2.7 Conceptual Framework

Figure 1: The Conceptual Framework of the study

From the diagram above, the researchers can identify the independent variables and dependent variable. There are four independent variables which are the efficiency, fulfilment, privacy and responsiveness. Whereas, the dependent variable is the customer service.

3 Research Methods

3.1 Research Design

The design of research can be defined as the plan to answer the research question. To answer questions like "who, how much, where, what, how, and how many?" it analyses numerical data using specific statistical techniques. Abutabenjeh and Jaradat (2018) said that Babbie (2004) said that research design is also a plan that the researcher needs to figure out what to observe and analyse, why, and how. Creswell (2008) said that research design is a plan for how the research will be done. Through questionnaires, all of the information for this study will be gathered using a quantitative method. Quantitative research is a way to collect and analyse data from different sources in a planned way (SIS International, 2018). Rahi (2017) says that survey questionnaires are used for research using a quantitative approach, techniques that have already been set up, and looking for samples from the target population.

3.2 Data Collection Methods

Data collection is a process of collecting information from all the relevant sources to find answers to the research problem, test the hypothesis, and evaluate the outcomes. A deductive approach is concerned with "developing a hypothesis (or hypotheses) based on existing theory, and then designing a research strategy to test the hypothesis" Wilson, J. (2010) "Essentials of Business Research: A Guide to Doing Your Research Project" SAGE Publications, p.7. Data collection methods can be divided into two categories: secondary methods of data collection and primary methods of data collection.

3.3 Study Population

The population or this study involved all undergraduates who are studying at University Malaysia Kelantan which also consists of several faculties such as Faculty of Entrepreneurship and Business (FKP), Faculty of Veterinary Medicine (FPV), and Faculty of Hospitality, Tourism and Wellness (FHPK). Based on Academic Administration Division of UMK, currently has total of 6,237 students who are divided into three faculties such as FKP with 3,495 students, FHPK with 2,518 students and 224 students for FPV. On this study, the researcher only used the population of FKP students and FHPK students in this research study. Therefore, the total population of UMK Campus Kota that researcher used was 6,013 students (UMK, 2022).

3.4 Sample Size

Sample refers to the number of population or the number of participants. So, in order to achieve the goals of this study and avoid information and data from being biased, this study should be done with a wider scope to get better and stand out results. According to Hair et al., (2011), research must limit such data errors to avoid bias. To achieve a

balance of the sample taken from the student, this research implies simple random sampling. According to Krejcie and Morgan (1970), 362 students will be the sample size to represent the whole population for this study.

3.5 Sampling Technique

In Sampling Techniques, researchers use some strategic methods to make it easier for us to do this study. Among them we will categorize the target students which are students from year 1 to year 4 from the faculties of FKP and FHPK to answer the questions given by us to be answered related to our title Online Food Delivery. The form has several important sections that must be answered by UMK students from both faculties. Therefore, the students will give their opinion what they feel is right. In this study, we used quantitative methods to find the necessary data.

3.6 Measurement of Variable

3.6.1 Nominal Level of Measurement

Multiple perspectives have been considered on the significance of the nominal scale. Separating units into qualitative categories, whereby the individuals of the same category share defining characteristics, is known as a nominal scale. These categories may be named, as in the case of natural categorizations like gender which is male or female or artificial categorizations like class of group A or B (Ndiyo, 2006). The only characteristic that nominal scale has is the description characteristic, which indicates that it has distinctive labels that may be used to identify the items or assign values to it.

3.6.2 Ordinal Level of Measurement

Ordinal data are separated into categories within a variable that already come with their own fundamental ranking method. On the other hand, the distances that separate the categories are not continuous or are unknown (Bhandari, 2020). Ordinal data are quantitative data that have orders that emerge, and the difference between every of it and other data types is not known. It is possible to title it, put it into groupings, and also classify it. Researchers will get the benefit from having an awareness of the different scales that are available so that data analysis methods can be applied in an accurate format.

4 Result and Discussion

4.1 Demographic Profile of the Respondents

Based on the table 1 below, it can be conclude that male respondents (55.2%) is more than female respondents (44.8%). In term of age, the highest percentage is 23 -26 years which is 50.8% followed by 19 – 22 years (43.1%). Majority of the respondent were Malay (70.7%) followed by Chinese (19.1%), Indian (8.8%) and others (1.4%). In of faculty, there are two faculty which is FKP (57.7%) followed by FHPK (42.3%). Many respondents from year fourth year student (44.2%) followed by second year student (26.5%), first year (16.6%) and third year (12.7%). In term of respondent who ever used food delivery application, majority have use food delivery application (99.4%) followed by who responds no (0.6%). Majority respondent visit online food delivery in every

month (64.1%), followed by respondent visit online food delivery in every week (26.8%) and lastly, in everyday (9.1%). Most application respondent used for making online food delivery were foodpanda (56.4%), followed by grabfood (40.3%) and shopeefood (2.5%), the last one is lalamove (0.8%).

Table 1: Demographic Profile of the Respondents

Items		N	Percent
1.	Gender		
	Male	200	55.2
	Female	162	44.8
2.	Age		
	19 – 22 years old	156	43.1
	23 – 26 years old	184	50.8
	27 – 30 years old	22	6.1
3.	Race		
	Malay	256	70.7
	Chinese	69	19.1
	India	32	8.8
	Others	5	1.4
4.	Faculty		
	Fakulti Keusahawanan dan Perniagaan(FKP)	209	57.7
	Fakulti Hospitaliti, Pelancongan danKesejahteraan (FHPK)	153	42.3
5.	Year of Study		
	First year	60	16.6
	Second year	96	26.5
	Third Year	46	12.7
	Fourth year	160	44.2
6.	Do you ever use food delivery app?		
	Yes	360	99.4
	No	2	0.6
7.	How often you visit online food delivery app		
	Everyday	33	9.1
	Weekly	97	26.8
	Monthly	232	64.1

4.2 Reliability Analysis

Table 2: Cronbach's Alpha Actual Reliability Test

Variables	Cronbach's Alpha	No of Items	Internal Consistency
Customer Satisfaction	0.905	5	Excellent
Efficiency	0.842	5	Good
Fulfillment	0.903	5	Excellent
Privacy	0.913	5	Excellent
Responsiveness	0.885	5	Good

Table 2 above shows the result of reliability analysis and the indicated of Cronbach's Alpha value for customer satisfaction of food delivery service among UMK City Campus student, efficiency, fulfilment, privacy and responsiveness is more than 0.6 and it is considered as reliable.

5 Discussion and Conclusion

5.1 Implication of the Study

The researcher will predict what will happen in the future with the data whether the use of the Online Food Delivery application will be beneficial or not. That's why the researcher took data from the respondents in order to be able to describe the journey of the food delivery industry that will have a positive or negative effect. Future researchers of the food delivery industry. Not forgetting that there are other parties other than the UMK City Campus who have other views about the Online Food Delivery application that has had an impact on customer satisfaction at the UMK City Campus.

The future forecast shows the desired improvement effect of the Online Food Delivery Company due to the excellent response. Through the findings of the respondents, we can see the factor that effect online food delivery (OFD) on customer satisfaction in UMK City Campus. Technology plays a very important role because technology and service facilities can satisfy customers. Advanced technology will also make it easier for customers to avoid queuing, walking and riding to buy food in stores. They just order food from home easily.

The research findings also show that many UMK City Campus students responded very well to this online food delivery application. This illustrates the positive impact that this online food delivery application is still relevant today. Therefore, it can be illustrated that many UMK City Campus students are interested in continuing to use the Online Food Delivery application because of its trusted system, having a good image, fast delivery and efficient food quality care. Therefore, this is why UMK City Campus students will continue to use the Online Food Delivery (OFD) application.

5.2 Limitation of the Study

Limitations in the study are the limitations that occur in this study where various obstacles and constraints in conducting this study. An honest attitude is very important in doing research. This is because it shows that you have made a sincere effort in doing this research.

In the data collection, there are students who sit outside the college (rental house) and it makes it a little difficult in the data collection of the respondents. Not only that, there are also students who are still in the village and have returned to their homes. Hence, they have other commitments when they are at their respective homes.

5.3 Recommendation

As a suggestion, we can encourage UMK city campus students to use online food delivery continuously because it can bring many benefits to UMK city campus students. We will explain why this online food application is important because of its reliable and safe system. This Online Food Delivery (OFD) application system is trusted with honest trackers by avoiding any fraud that occurs. Not only that, but the information of customers who use the service is protected and guarded. Therefore, customers do not need to be afraid of personal information being leaked or stolen, because this application system is protected from any fraud. If fraud occurs, action will be taken.

Personal information such as bank account numbers, telephone numbers and home addresses are well guarded. Therefore, this can convince students to continue using this OFD application by ordering their favorite food.

6   Acknowledgement

We would like to first and foremost to say thank you to everyone who contributed time and effort for this research project's completion and also, we will not be able to complete this research without their support. In addition, we would like to thank our members of our group for their unwavering dedication for the discussions throughout the research project. It will not be impossible to complete this research on time without mutual respect, encouragement, and cooperation. Last but not least, we are extremely appreciative of our parents' support for our education at University Malaysia Kelantan.

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Impact of E-Service Quality on Customer Satisfaction towards Grabfood in the Post-COVID-19 Pandemic in Kota Bharu, Kelantan

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Abstract:
This study aims to see the impact of e-Service quality on customer satisfaction with GrabFood in the Post COVID-19 pandemic in Kota Bharu, Kelantan. This study also proposed a conceptual framework to investigate the effect of several dimensions of GrabFood e-Service quality on customer satisfaction in Kota Bharu, Kelantan regarding online food delivery services. Trust, website design, responsiveness and fulfilment are dimensions studied in the context of e-services quality. Convenience sampling was used to collect data from respondents in Kota Bharu, Kelantan through an online questionnaire. Descriptive analysis, reliability analysis, and correlation analysis were applied to achieve the study objectives. The findings indicated that trust and website design are two dimensions that have a positive and significant influence on customer satisfaction towards using GrabFood as an online food delivery service. Furthermore, the study provides valuable insights for marketing managers and academics on improving the quality of online food delivery services and thereby creating long-term satisfied and loyal customers.

Keywords*: Customer Satisfaction, GrabFood, e-Services Quality, Trust, Website Design*

1   Introduction

The post COVID-19 pandemic, also known as the coronavirus pandemic, started in China and is still active today. It has spread slowly to all over the countries, which is Malaysia one of them. It is considered the greatest health disaster of the century, and it significantly harmed the political, social, and economic spheres the following. The Tablighi Jamaat's large gatherings was conducted in Sri Petaling Mosque in Kuala Lumpur, Malaysia, fuelled antipathy toward religion and led some people to refer to them as "super-spreaders" is now being held responsible for hundreds of new infections across Southeast Asia (Burhani, 2020). The gathering, which drew 16,000 attendees, 14,500 of them were from Malaysia, led to the outbreak of the coronavirus, which has then spread to Thailand, Brunei, and Singapore (Sukumaran, 2020). The catastrophe management team therefore developed their Standard Operation Procedure (SOP), where they oversee the process of distributing charity to the needy. Governmental entities have since, and private organizations started coordinating with one another.

Since then, both public and private organizations have been working together to effectively coordinate to close the gap in services, delivery, and resource availability. There was a consequential shift in what manner consumers spend their money and in what way e-commerce started. The number of customers in the food industries is rapidly declining simultaneously stores together with restaurants are involuntary to shut down and turn to different options, like buying food online. There are numerous food distribution companies in Malaysia providing food delivery services online. Malaysia has GrabFood, Honest Bee, Dah Makan, Delivery Eat, Running Man Delivery, Food Time, Mammam Delivery and Tapau Food (Amran et al., 2023). One of the organizations that can help is GrabFood, which offers Malaysians one of the greatest delivery services starting from the year 2020. The GrabFood application has gained a place in the hearts of the community. This is because repeated unavailability of a brand due to out of stock can profoundly change consumer choice. Positive rejection leads to high satisfaction, while negative rejection leads to low satisfaction (Parker & Matthews, 2001). As a result, it is important to pay close attention to detail and critical thinking when preparing customers to increase customer satisfaction (Deyalage & Kulathunga,2019).

Malaysia has GrabFood, Honest Bee, Dah Makan, Delivery Eat, Running Man Delivery, Food Time, Mammam Delivery and Tapau Food (Amran et al., 2023). But in the latest years, GrabFood antiquated the compatible top-of-mind alternative in the middle of consumers (Zoleta, 2022). Singapore-based an international technology business, Grab Holdings Inc. is also known as Grab. It is the originator of the Grab superior-app, which enables users to approach digital settlement, food delivery, and transportation services using an app in smartphones. Singapore, Malaysia, Cambodia, Indonesia, Myanmar, the Philippines, Thailand, Vietnam, and Singapore are the present countries where Grab is in operation. It is the biggest automation in the area and the earliest decacorn in Southeast Asia. Grab had about 24.7 million active users, 5 million registered drivers, and 2 million registered merchant partners in the second quarter of 2021 (Iwamoto, 2021). Anthony Tan and Tan Hooi Ling became known in 2012 as the Kuala Lumpur, Malaysia-based MyTeksi app, and it set off GrabTaxi the upcoming year. From that time on, it has enlarged to a greater extent services by applying the super-app theory. It replaced its label to "Grab" and migrated its headquarters in 2014 to Singapore.

Hence, this study is interested in investigating how customer service helps its customers by giving answers to questions during pandemics and product information quality that is always up to date, complete, and consistent during pandemic. In addition, customer service helps its customers by purchasing process convenience that offers an easy and quick purchasing process for the customer during pandemic. The focus of this study is to investigate how satisfied customers are with delivery services and the impacts on e-services quality.

2   Literature Review

2.1   Introduction

The independent variables in this research can be known as Trust, Fulfilment, Responsiveness, and Website Design while the dependent variable is customer

satisfaction towards GrabFood. This research will study on the impact of e-service quality on customer satisfaction towards GrabFood during post COVID-19 pandemic in Kota Bharu, Kelantan. Therefore, E-SERVQUAL model will be implement in this research.

2.2   Underpinning Theory

The underpinning theory of this study is adapted from Oliver (1980), the Expectancy Disconfirmation Theory (EDT). EDT is formed on the base of Cognitive Dissonance Theory (CDT) which was proposed by Leon Festinger in 1957. Expectancy Disconfirmation Theory is a theory model that introduced by Oliver (1980), where the researcher discovered that there is a positive relationship between disconfirmation and consumer satisfaction.
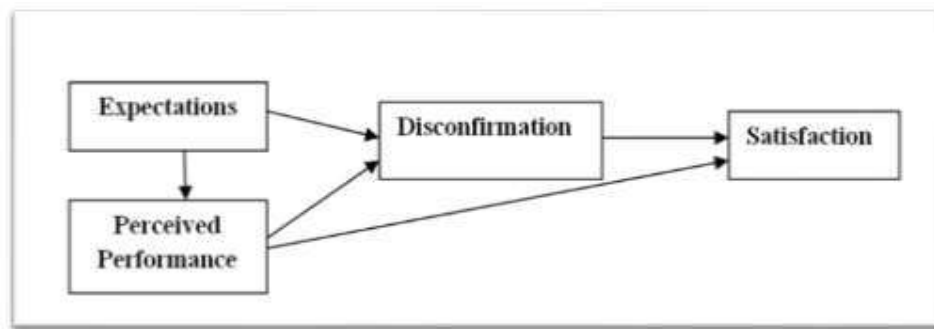
Figure 1: Expectancy Disconfirmation Theory
(Source: Elkhani & Bakri, 2012)

The EDT model consists of four elements, including expectation, perceived performance, disconfirmation, and satisfaction. The EDT shows that consumer expectation influences perceived performance and disconfirmation. Consumer expectations are what a consumer expects a product and service will have similar quality based on their previous purchase experience or the information received in market (Yu & Wang, 2017):

   i.   Positive disconfirmation: Occurs when perceived performance is better than expectation.
   ii. Zero disconfirmation: Occurs when perceived performance is equal to expectation.
   iii. Negative disconfirmation: Occurs when perceived performance is below expectation.

2.3   Customers' Satisfaction

Customer satisfaction can be defined as the feeling of customer satisfaction or dissatisfaction because of a comparison between the performance of a product or service offered (Chaerudin and Syafarudin, 2021). Customers' satisfaction is a "consumer fulfilment response." Furthermore, according to the literature review, customer satisfaction has become one of the most studied market constructs (Kulathunga & Deyalage, 2018). Product scarcity can influence consumer choice, this will indirectly cause more consumer satisfaction response. Consumers' perception of the difference

between product performance and predicted performance has resulted in satisfaction judgments (Oliver, 1980). Customer satisfaction, for example, is influenced by product or service features and perceived quality. Customer loyalty affects emotional reactions, attitudes, and perceptions (Sabir et al., 2013). Increased customer satisfaction can bring benefits to the organization such as increased customer loyalty, extended customer life cycle, customer trust and positive customer word-of-mouth communication. When customers are satisfied with a product or service, they are more likely to use the e-service application to make future purchases and recommend the product or service to others.

2.4 E-SERVQUAL model

2.4.1 Trust

Trust is a crucial element that could make a business successful (Cotirlea, 2011). Trust can form a good business relationship with other parties, including employees, customers, suppliers, and investors. Trust influences consumer satisfaction (Li et al., 2009; Cotirlea, 2011; Rasheed and Abadi, 2014; Sharma, 2017; Ariani et al., 2019). Trust refers to a person's willingness or confidence to believe in other parties (Lien et al., 2015). It is important for e-service providers that build a trusting relationship with consumers. Online sellers should pay attention to increasing consumers' trust and confidence by maintaining good reviews and ratings of products and services (Tasin, 2017). Consumers have the right to choose the e-service providers that they trust and feel safe. E-service providers must be alerted that trust will influence consumer purchase experience and satisfaction and avoid consumers purchasing goods and services from other e-service providers (Tran & Nguyen, 2022). Trust is one of the crucial dimensions of e-service quality that will significantly influence consumer satisfaction. According to Li et al. (2009), high-quality e-service will build trust and confidence in consumers where their wants and needs are fulfilled based on expectations.

2.4.2 Responsiveness

According to Friedman (2009), the technique of a guarantee that the consumer is serviced agreeably and responsibly by administration agencies and executives is referred to as "responsiveness." Meanwhile, Sakarji et al. (2020) revealed that the aspiration and preparedness to accommodate customers and distribute an instant service patch up the proportions of responsiveness. This component emphasizes responsiveness together with preparedness to client demands, inquiries, objections, and challenges. Researchers look at responsive businesses in terms of traits that allow them to adjust in real time, such as valuing the purpose over profit, empowering people over controlling them, and valuing transparency over privacy. Furthermore, a server's responsiveness affects how well, quickly, and where it answers to users. Being accessible to clients via the channels and times of their choice is a sign of good responsiveness.

2.4.3 Fulfilment

The procedure of preparing and delivering a customer's order is referred to as fulfilment. Order fulfilment refers to all the actions taken from the time a customer decides to make a purchase all the way through delivery of the goods and customer satisfaction with its

quality and performance. The following five diverse procedures make up e-fulfilment for online retailers. They may be handled in-house or by outside partners (Gewirth, 2009). According to Pham and Ahammad (2017), the online business's ability to keep its promises is another factor that affects the fulfilment variable in the quality of the e-service. Customers who were very satisfied and loyal in their study noted the value of precise information provided by the internet platform. Customers anticipate that the business will provide the advantages and services it committed to. When there is less of a gap between expectations and fulfilment, clients are more satisfied.

2.4.4 *Website Design*

According to Liu et al. (2017), Web Design can be referred to as the pages used to display the content to the customers on the internet. While Li et al. (2009) stated website design played an important role as presenting a business's image and attracting consumers. All features and elements that customers used on the website can be referred to as the website design (Rita et al., 2019). Color played an important role used to attract and influence the customer reactions and responses (Post, 2019). In the research from Digital Synopsis (2022), 93% of buyers will focus on the visual appearance while 84.7% of buyers claim that color is the primary choice when they have intent to buy a product. Besides that, the elements such as information, navigation, and layout for website design are important but the element is insufficient for consumers. According to Rasli et al. (2018), the content of a website page plays an important role in shaping consumer behavior such that the consumer would get satisfaction when he can acquire information from a single page else his impression on the website will be completely different from the interface of the website. In contrast, poor website interface design affected consumer quick rejection and distrust of websites. The research of Haglund, (2020) stated most of the respondents felt higher trust with the website having creative visual appeal compared to usability

3   Methodology

3.1   Research Design and Data Collection Method

A quantitative method was used in the study, with a survey or questionnaire distributed to GrabFood customers in Kota Bharu, Kelantan. Quantitative research employs structured questions that allow respondents to select responses (Burns et al., 2014). Researcher was collected data about online customer satisfaction on GrabFood delivery services in the post pandemic using surveys and questionnaires as these methods are practical, timely and cost-effective.

3.2   Population and Sample Size

A population is a class of people, modules, or items in distinction to which samples are extracted for measurement. Kota Bharu is the largest city, and it is the capital of Kelantan. Moreover, it has a diverse population that includes Malays, Chinese, Indians, Siamese, and certain other minority ethnic groups. Hence, the research will be conducted in Kota Bharu. A sample is a compact class of subjects pinched from a larger population for the purpose of drawing, finishing regarding the population targeted. To the author's knowledge, the population of the GrabFood service users in Kota Bharu is unknown. If the population is unknown, the minimum sample size number will be

determined by 5 times the number of items (Hair et al., 2018). Thus, a minimum of 125 respondents was needed to answer the questionnaire since there are a total of 25 items needed to analyze for this study. As a result, a total of 125 questionnaires was distributed to respondents who are GrabFood service users in Kota Bharu, Kelantan.

3.3 Research Instrument

Questionnaires was created using Google Forms and distributed through social media platforms. A total of 25 close-ended questions were asked to respondents and include three sections. Section A includes demographic of respondents, Section B includes impact of E-service quality to GrabFood that consists of four variables and Section C includes the customer satisfaction on GrabFood service. Questionnaires have applied the Likert Scale in Section B and C to determine how strongly respondents agreed or disagreed with a message. 5-point Likert Scale included "strongly agree," "agree," "neutral," "disagree," and "strongly disagree" was utilized to identify the variables that impact to customer satisfaction towards GrabFood in the Post COVID-19 pandemic in Kota Bharu, Kelantan

3.4 Procedure for Data Collection and Analysis

This research required analyzing and interpreting the data collected from the questionnaires. Therefore, Statistical Package for Social Science (SPSS) Version 26 was used to analyze the data collected to identify the relationship between independent variables and dependent variable. SPSS can be known as the statistical software used to analyze the various disciplines for quantitative analysis of complicated data (Beddo & Kreuter, 2004). So, four types of analysis were used in this study, including Reliability Analysis, Descriptive Analysis, and Correlation Analysis. Reliability Analysis was used to examine the consistency and strength of scale when variables are repeatedly measuring (Sekaran & Bougie, 2019). Next, Descriptive Analysis was used to measure the central tendency including mean, mode, and median. According to Hair et al. (2019), Correlation Analysis measures the linear relationship between two quantitative variables, including independent variable and dependent variable.

4   Findings and Discussions

4.1   Demographic Profile of Respondents

Table 1 below shows the demographics profile of the research respondents. Among the 125 respondents, 54.4% of respondent were female, and 45.6% of respondent were male. The data showed most of the respondent were from 18-30 years old group. Besides that, more than a half of respondents were students (62.4%) and had less than RM2000 monthly income. The entire respondent agreed that they own a smartphone. Moreover, 52.8% of respondents used GrabFood with a frequency of once a month and there are 61.6% of respondents spent less than RM50 on GrabFood per month.

Table 1: Demographic Profile of Respondents

Characteristics	Frequency (Respondent)	Percentage (%)
Gender		
Male	57	45.6
Female	68	54.4
Age		
Below 18 years old	6	4.8
18 - 30 years old	97	77.6
31 - 40 years old	19	15.2
41 years old and above	3	2.4
Race		
Malay	62	49.6
Chinese	97	31.2
Indian	19	18.4
Others	3	0.8
Occupation		
Student	78	62.4
Government sector	13	10.4
Private sector	21	16.8
Self-employed	13	10.4
Monthly income		
Less than RM 2000	85	68.0
RM 2001- RM4000	27	21.6
RM 4001- RM 6000	9	7.2
RM 6001 and above	4	3.2
Do you own a smartphone?		
Yes	125	100
No	0	0
Do you use your smartphone for GrabFood delivery service?		
Yes	118	94.4
No	7	5.6
Frequency of using GrabFood.		
5 or more times a week	5	4.0
2 to 4 times a week	21	16.8
Once a week	33	26.4
Once a month	66	52.8
Approximately amount you spent on GrabFood per month.		
Less than RM 50	77	61.6
RM 51 - RM 200	41	32.8
RM 201 - RM 500	5	4.0
RM 500 and above	2	1.6

4.2   Reliability Analysis

Table 2: Reliability Analysis

Variation	Alpha Coefficient	Number of Items	Strength of Association
Customer Satisfaction	0.801	5	Very Good
Trust	0.838	5	Very Good
Responsiveness	0.740	5	Good
Fulfilment	0.821	5	Very Good
Website Design	0.818	5	Very Good

Based on table 2 above, it describes the result value of Cronbach's Alpha Coefficient that showed the reliability of instrument. The table shows the Customer Satisfaction = 0.801, Trust = 0.838, Responsiveness = 0.740, Fulfilment = 0.821 and Website Design= 0.818.

4.3 Pearson Correlation Analysis

Correlation analysis is the method used to study the strength and the direction of the relationship between the variables in the study. This analysis used to find the connection or the association between the dependent variable and independent variables.

Table 3: Pearson Correlation Analysis

	Trust	Responsiveness	Fulfilment	Website Design
Pearson Correlation	0.759**	0.690**	0.722**	0.791**
Sig. (2-tailed)	0.000	0.000	0.000	0.000
N	125	125	125	125

Based on the table 3 above, the correlation and p-value between the trust and customer satisfaction are 0.759 and 0.000 respectively. Thus, a significant and high positive linear correlation exists between fulfilment and customer satisfaction towards GrabFood. For responsiveness, the Pearson correlation value is 0.690 and the p-value of customers' satisfaction showed 0.000. Therefore, a significant and moderate positive linear correlation exists between responsiveness and customer satisfaction towards GrabFood. Besides that, the fulfilment and website design also show a significant and high positive correlation with customer satisfaction towards GrabFood which the value of Pearson correlation fulfilment, website design and customer satisfaction are 0.722, 0.791, and 0.000 respectively.

5 Discussion

This study aimed to examine the impact of trust, responsiveness, website design and fulfilment on customer satisfaction towards GrabFood in the Post COVID-19 pandemic in Kota Bharu, Kelantan using Statistical Package for Social Sciences (SPSS) Version 27. Among these four determinants of descriptive analysis for the independent variables, the highest mean value was website design which was 4.1728 and followed by fulfilment (4.1536) and trust (4.1536). The lowest mean for the independent variable was responsiveness (4.1184). The mean value for dependent variable was 4.1728. It could conclude that website design was the most influence factor in customer satisfaction towards GrabFood in the Post COVID-19 pandemic in Kota Bharu, Kelantan.

To measure the linear relationship between the two variables which had stated as the objective of this study, researchers had done the Correlation Analysis. The data shows the summary of the Correlation Analysis; there were high positive relationships between trust, responsiveness, fulfilment, and website design with customer satisfaction towards GrabFood in the Post COVID-19 pandemic in Kota Bharu, Kelantan. The result was supported by a previous study where Lien et al. (2015) said that trust refers to a person's willingness or confidence to believe in other parties. The higher the consumer's trust on

the service and brand, the better the consumer satisfaction while using the service. As for responsiveness, Sakarji et al. (2020) stated that the aspiration and preparedness to accommodate customers and distribute an instant service patch up the proportions of responsiveness. In addition, responsiveness is dealing with customer complaints immediately by providing expected information or replacing damaged items so that customer satisfaction is guaranteed. Therefore, the brand's reputation and previous consumer perceptions of the services have an impact on how customers perceive the overall quality of e-services. Moreover, the effectiveness of preparing and delivering a customer's order at the appointed time is referred to as the fulfilment of customer satisfaction Pires et al. (2006). Lastly, humans will be attracted to interesting things, so the behaviour of the consumer may change while interacting with any website such as the website layout and structure Rasli et al. (2018).

6 Conclusion

In this research a total of 125 respondents were collected through Google Form questionnaire method. The data evaluated using SPSS software and method of preliminary analysis. After getting all the results and findings, it was confirmed that four of the independent variables affect the dependent variable. Trust, responsiveness, fulfilment, and website design on customer satisfaction towards GrabFood in Kota Bharu, Kelantan. The findings of this study can be one of the references for the management of GrabFood to improve the GrabFood service. They can use this study to improve a weak e-service quality of food such as incorrect business hours due to the system error. Online delivery system played an important role in customer satisfaction which was affected by many factors such as customer rating, app privacy, human interaction, the quantity, and quality of payment method. Generally, customers in Kota Bharu, Kelantan agree with the service offered by GrabFood. They argue that GrabFood, as an online food delivery service, has provided almost everything that customers require to purchase food and beverages at the touch of a button. Customers do not need to go out and order food in person or call the restaurant. Customers can use the app to search for all nearby restaurants, view menu options, and select the food or drink they want.

7 Acknowledgement

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Online Customer's Satisfaction toward the Quality of Grabfood Services in Pengkalan Chepa during COVID-19

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Abstract:
This research aim to investigate online customer's satisfaction toward the quality of Grabfood services in Pengkalan Chepa during Covid-19. Factor that related to this study is customer service, security perception, purchasing process convenience and product information quality. In this research we use quantitative research method to find the respondent. The total of respondent that researcher collect in this research is 384 respondents. The researcher also use the IBM SPSS (Statistical Package for Social Science) Statistics version 26.0 to analysis the result from questionnaire. To analysis the result researcher execute descriptive analysis, validity and reliability analysis, Pearson's correlation coefficient analysis and multiple linear regression. The result from this analysis show that there are positive relationship between dependent variable which is quality of Grabfood services in Pengkalan Chepa during Covid-19 and independent variable which is customer service, security perception, purchasing process convenience and product information quality. The researcher provided the implication, limitation and recommendation of the research in order to conduct future research.

Keywords*: Customer Service, Purchasing Process Convenience, Product Information Quality and Quality of Grabfood Services during Covid-19*

1 Introduction

1.1 Background of the Study

The purpose of this research is to investigate the online customer's satisfaction towards the quality of Grabfood services in Pengkalan Chepa during Covid-19. Due to the Coronavirus (Covid-19) pandemic, all Malaysians shall stay in residence in 2020. Malaysia has made an announcement of the Movement Control Order (MCO) on March 18, 2020. Due to the global COVID-19 epidemic and expanding consumer behaviour patterns, the expansion of the prepared food business is anticipated to be significantly greater (Lu, Wang, & Li, 2021). This shows that during pandemics, customer purchasing patterns have shifted to include purchases of necessities and fresh produce through online stores and food delivery services. As a result, people's desire to buy fresh products is increasing, and fresh e-commerce is taking the lead.

Over the last year, online food delivery (OFD) has gained popularity around the globe. According to (Cho et al., 2019), OFD is an excellent method for customers to buy a range of food selections online (s). Customer orders are collected via OFD systems and sent to restaurants and delivery personnel (Troise et al, 2021). Due to the convenience of having food delivered to customers' homes, restaurants now have new chances to grow their market and boost their profitability. Due to a stringent lockdown order, online food delivery has become the biggest craze in the world in 2020 and 2021. (Durai, 2020). Grabfood is the one of company that provides service of online food delivery.

1.2   Research Questions

1.   Does the level of customer service and security perception affect the quality of Grabfood services during Covid-19?

2.   Does the level of purchasing process convenience and product information quality affect the quality of Grabfood services during Covid-19?

1.3   Research Objectives

1.   To examine the relationship between the level of customer service and security perception towards quality of Grabfood services during Covid-19

2.   To examine the relationship between the level of purchasing process convenience and product information quality towards quality of Grabfood services during Covid-19

2   Literature Review

In this section, we will discuss about literature review that is related to online customer's satisfaction towards quality of Grabfood service in Pengkalan Chepa during Covid-19. As well as that, in this chapter, we will be exploring a number of factors that may affect the topic for this research and from studying the related topic, we will then be able to discover how each variable that affects customer satisfaction affects this research topic.

2.1   Quality of Grabfood Services during Covid-19

Service quality is defined as the difference between anticipated and perceived services (Zeithaml et al., 2002). Based on the expectation-(dis)confirmation theory, Parasuraman et al. (1988) developed SERVQUAL to quantify customer perception. The 22-item scale categorises service quality into five components, namely, tangibles, reliability, responsiveness, assurance and empathy. Adapting SERVQUAL, Stevens et al. (1995) designed the 40-item DINESERV scale to measure customers' perception of restaurant service quality. Accordingly, tangibles relate to a restaurant's interior design and the look of its employees. It is through the tangible dimensions of GrabFood services that the quality of the service is evaluated.

2.2   Customer Service

According to Lee et al., researchers from 2019, the habit, followed by performance probabilities and societal impact, is what drives the most desire for indefinite use. Furthermore, research indicates the importance of information quality, performance expectations, customer behaviour, and social effect as elements in driving customers to have constant good intents to use meal delivery apps. According to the research, satisfaction may already be measured by a single purchase or a series of contacts with a product or service over time (Ferrentino & Boniello, 2020). When a customer uses a service or product and is pleased with how well it works and how well it meets all of their expectations, this occurs.

H1: There is a positive relationship between the level of customer service and quality of Grabfood services during Covid-19.

2.3   Security Perception

The lack of perceived security is highlighted as one of the primary reasons why the prospective consumers refuse to purchase online. Mainly, due mainly to the danger associated in communicating sensitive information such as credit card information, people are hesitant to participate with online buying activities. Customers that share this information fear that their security may be compromised due to internet operations. A high level of client satisfaction can be achieved when e-retailers incorporate more security elements into their websites (Maditinos & Theordoridis, 2010). Most studies have established a significant and positive association between security perception and online customer satisfaction, according to researchers (Szymanski & Hise,2000; Kim,2005; Schaupp & Belanger ,2005; H. Lin ,2007; Anand,2007; Liu et al.,2008;Kim et.al.,2009; Chang & Chen 2009 ; Maditinos & Theordoridis,2010; Gelard & Negahdari 2011; Guo et al.,2012; Dharmesti & Nugroho,2012 ; Ranjbarian,2012 ; Trong et al., 2014; Evanschitzky et al.,2014). Several studies have shown that security affects customer satisfaction significantly (Thilakarathne & Abeysekara, 2015). Security perception is measured by the dimension of assurance.

H2: There is a positive relationship between the level of security perception and quality of Grabfood services during Covid-19.

2.4   Purchasing Process Convenience

It is critical for an online company to provide customers with a simple, smooth, and speedy purchase procedure (Maditinos & Theordoridis, 2010). According to their research, the easier this procedure is for a consumer, the greater the degree of satisfaction is assigned to the online business. Silva and Abeysekara (2012) discovered in the Sri Lankan context that the convenience that consumers experience throughout their Internet banking activities has a large, positive effect on customer satisfaction. It is critical for an online business to have a simple, smooth, and speedy purchase procedure. Purchasing process convenience is measured by the M-S-QUAL with five dimension that is, efficiency, fulfillment, privacy, contact and responsiveness.

H3: There is a positive relationship between the level of purchasing process convenience and quality of Grabfood services during Covid-19.

2.5 Product Information Quality

According to Savoy and Salvendy (2016), the general description of the product, the quality of the product, the presentation of the product, the transactions performed by the members, and other characteristics of the company organisation all have a substantial influence on the consumer information satisfaction. The availability of information (specific and up-to-date information) significantly increases e-satisfaction (Vasic et al., 2019), however Hila Ludin and Cheng (2014) discovered that information quality has a positive effect on satisfaction when purchasing from the internet. Furthermore, precise product information (such as information about apparel materials or washing instructions) improves online satisfaction (Masnova and Svandova, 2014). In contrast, dissatisfaction with information quality expectations is positively connected to overall satisfaction (Tzeng et al., 2020, p. 5). Product information quality is measured by product durability, product variety, product freshness, product attractiveness, and product equity.

H4: There is a positive relationship between level of product information quality and quality of Grabfood services during Covid-19.

2.6 Theoretical Framework
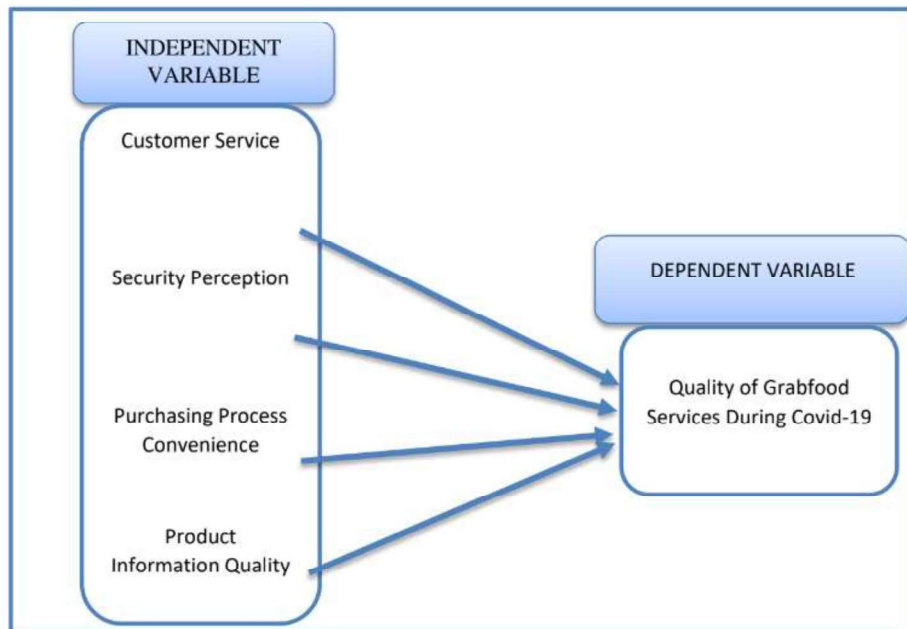
Figure 1: Research Theoretical Framework

3 Research Methodology

3.1 Research Design

The goal of research design is to establish a proper outline of the study. Essentially, in research design it is a study plan that specifies the procedures that researchers should follow to achieve their research objectives or test the hypothesis proposed for their

study. Nonetheless, the study design process entails a number of interrelated considerations.

3.2 Data Collection Methods

For primary data collection method, the researcher will use quantitative data are based on statistical and analysis approaches, such as mean, closed-ended questions, correlation and regression methods, mode and median questionnaires, and others. The information gathered by an online survey or online questionnaire, made with Google Form and related to the study's goal.

Data from secondary sources of information could be more accurate than data from main sources. For secondary data collection method, researcher collects the data from previous study journals using google scholar.

3.3 Sample Size

This table is being used to determine the overall sample size. In Pengkalan Chepa, there are 159,674, so 384 respondents were included in the study. A sample size of 1,000,000 was chosen because Pengkalan Chepa has a population of 159,674. The sample sizes from Krejcie and Morgan (1970) are displayed in Table 1 below:

Table 1: Table for determining sample size from a given population

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—N is population size. S is sample size.

Source: Krejcie & Morgan, 1970

3.4   Research Instrument

This instrument is important because it enables the researcher to obtain the information with more precise and faster. In this research, the researcher has to choose the questionnaires as one of the measurement tools to obtain the information that acquire in efficient way of data collection. In addition, questionnaires will be distributed to respondents where the researcher focus on the Grabfood service users among Pengkalan Chepa area through the online, it will be easier for respondent to complete the scaling and ranking given. This questionnaire will be designed and distributed to respondents in two types of languages which is English and Malay to avoid any difficulties and it will easier for respondents to understand all the questions. One type of closed-ended questionnaire in this study contained likert scale questions. The set of questionnaires will have a total of 30 questions, and the questionnaire will be divided into six parts.

Table 2: Adoption of Questionnaire Measurements

Construct	Adapted from
Quality Of Grabfood Delivery Service (DV)	Nguyen-Phuoc et al. (2020); Lee and Lin (2005); Eid (2011), Namkung and Jang (2007)
Customer Service (IV)	Liu et al. (2008); Chang et al. (2009);Wang, Tang, & Tang, (2001); Jaing and Rosebloom (2015)
Security Perception (IV)	Park and Kim (2003); Liu et al. (2008); Maditinos and Theodoridis (2010)
Purchasing Process Convenience (IV)	Park and Kim (2003);Kim (2005); Maditinos and Theodoridis (2010)
Product Information Quality (IV)	Cho and Park (2001); Park and Kim (2003); Kim (2005); Liu et al. (2008); Maditinos and Theodoridis (2010)

3.4.1   Questionnaire

The respondents will response to the researcher virtually through the link of the google form that will be provides by the researcher. There are 6 parts in the questionnaire design which are Part A, the demographic profile of respondents, Part B, which is about quality of Grabfood service (dependent variable) and followed by Part C, D, E and F which are about the factors on customer satisfaction towards Grabfood (independent variable).

3.4.2   Questionnaire design

This study's questionnaires were developed to carry quantitative data. The primary data instrument used throughout this research was structured as Likert Scale of 1-5 questions, as well as close-ended questionnaires. Measurement of questionnaire:

  i.   Quality of Grabfood service: measured by dimension of tangible
 ii.   Customer service: measured by dimension of responsiveness
iii.   Security perception: measured by dimension of assurance
 iv.   Purchasing process convenience: measured by M-S-QUAL with five dimensions that is, efficiency, fulfillment, privacy, contact and responsiveness
  v.   Product information quality: measured by product durability, product variety, measured product freshness, product attractiveness and product equity

3.4.3   Non Comparative Scale

Non comparative scaling methods come in many different forms, including the visual rating scale, Likert scale, semantic differential scale, and Stapel scale (Swaminathan, 2010). In using non-comparative scale, survey respondents are asked to assess just one service or product. When researchers analyze their findings, they will be concentrated on one component and not make connections to other components.

3.4.4   Likert Scale

In this study, the researcher will utilize the Likert scale to evaluate the respondents' level of agreement and disagreement with statement. For instance, this researcher will utilize a five-point Likert scale from 1 to 5 to collect information from respondents. Consequently, the scale will be based on the following responses: 1 for Strongly Dissatisfied, 2 for Dissatisfied, 3 for Uncertainty, 4 for Satisfied, and 5 for Strongly Satisfied.

3.5   Measurement of the Variable

In this study, the nominal scale is employed in the questionnaire for part A, which is related to the respondents' demographic profile, with age, gender, status, occupation and monthly income all being measured for the analysis of target respondents. In the part B until part F for questionnaire in this research are use five-point Likert scale [strongly dissatisfied (1), dissatisfied (2), uncertainty (3), satisfied (4), and strongly satisfied (5)] this is to help measure the level of strength of either satisfied or dissatisfied about the statement for the variables studied.

3.6   Data Analysis

3.6.1   Descriptive Analysis

The researcher will use the descriptive statistics to provide the demographic profile of respondents of the questionnaire with a summary of gender, age, academic qualification, race, and monthly income. In section A of the questionnaire, the researcher will use descriptive analysis to obtain information from the respondents.

3.6.2   Reliability Test

The purpose of testing is to reduce chance errors and enhance the dependability of the measurement with the awareness that a totally trustworthy measure is rarely achieved. Although a highly reliable test will not provide equal scores for a participant from Time 1 to Time 2, the scores will tend to be comparable if the test is dependable.

3.6.3   Validity Test

A research validity test can determine how well an instrument tests what it is meant to assess. The three types of validity that researchers might use according on the study which is content, construct, and criterion validities.

3.6.4   *Pearson's Correlation Coefficient Analysis*

In this study, the researcher might be using the Pearson Correlation analysis to measure the online customer's satisfaction towards the quality of Grabfood services in Pengkalan Chepa during Covid-19.

3.6.5   *Multiple Linear Regression (MLR)*

Four constructs which consist of customer service, security perception, purchasing process convenience, product information quality expectancy as independent variables will analyze concurrently to examine the online customer satisfaction towards the quality of Grabfood service as the dependent variable in Pengkalan Chepa during Covid-19.

4   Data Analysis and Findings

4.1   Reliability Analysis

A pilot study was conducted among 30 respondents from Pengkalan Chepa area. The researcher carried out a pilot test where sets of questionnaires will be given to the respondents through Google Form questionnaire. After the pilot test has being conducted and explain it consistency, 30 sets of questionnaires have been run for reliability test in order to check the reliability of the question.

Table 3: Reliability Analysis of Pilot Test

Variables	Cronbach's Alpha
Quality Of Grabfood Services	0.964
Customer Service	0.971
Security Perception	0.947
Purchasing Process Convenience	0.958
Product Information Quality	0.970

In the reliability test, Cronbach's Alpha is assigned a value among 0 and 1, with a number nearer to 1 indicating an even greater accurate scale for variables. The closer exact a set of scales remains, the more confident researchers will be in the survey's conduct, ensure about the data or information on results and observations is acceptable to interpret.

4.2   Demographic Profile of Respondents

Table 4: Age Group

	Frequency	Percent	Cumulative Percent
19 years old and below	34	8.9	8.9
20-29 years old	246	64.1	72.9
30-39 years old	53	13.8	86.7
40-49 years old	35	9.1	95.8
50-59 years old	11	2.9	98.7
60 years old and above	5	1.3	100.0
Total	384	100.0	

According to table 4 shows the number of respondents was categorized based on age group in this research. The lowest age and most respondents are the age group of 19 years and below with 34 participants of this study with (8.9 %). Next, the age group between 20 - 29 years is 246 participants who are the respond for this questionnaire with (64.1%). Next the age category of 30 - 39 years was 53 participants with (13.8%). 40 - 49 years were 35 participants with (9.1%). The age group of 50 - 59 years was 11 participants with (2.9%) and finally the age group of 60 years and above approximately 5 participants with (1.3%). As a result, the age group of 20-29 years is highest who has been using Grabfood services and the least users are the age group of 60 years and above.

Table 5: Respondent's Gender

	Frequency	Percent	Cumulative Percent
Male	144	37.5	37.5
Female	240	62.5	100.0
Total	384	100.0	

Based on table 5, it reveals that 144 (37.5%) of respondents are males, with the remaining 240 (62.5%) females. As a result, females are higher than males to use Grabfood services.

Table 6: Marital Status

	Frequency	Percent	Cumulative Percent
Single	273	71.1	71.1
Married	102	26.6	97.7
Others	9	2.3	100.0
Total	384	100.0	

According to the table 6, interpret the number of respondents based on marital status category. For the marital status, single holds the highest number of respondents with 71.1% (273 respondents). The second highest marital status is married with 26.6 % (102 respondents) and others marital status with 2.3% (9 respondents). So, based on this survey 71.1% majority of single's are using the Grabfood service.

Table 7: Occupation

	Frequency	Percent	Cumulative Percent
Government Sector	58	15.1	15.1
Private Sector	68	17.7	32.8
Self-Employed	36	9.4	42.2
Student	198	51.6	93.8
Not working	24	6.3	100.0
Total	384	100.0	

Based on the table 7, it interprets the result about the level of occupation of the respondents. The highest level of occupation user's is student consist of 198 respondents (51.6%). The second highest, private sector occupation which consist of 68 respondents (17.7%). Next is government sector, which consists of 58 respondents

(15.1%), followed by self-employed occupation which consist of 36 respondents (9.4%) and the lowest is not working that be used by the respondents which is 24 respondents (6.3%).

Table 8: Monthly Income

	Frequency	Percent	Cumulative Percent
Below RM 1,000	132	34.4	34.4
RM 1,000 - RM 2,000	45	11.7	46.1
RM 2,001 - RM 3,000	63	16.4	62.5
RM 3,001 - RM 4,000	38	9.9	72.4
RM 4,001 above	19	4.9	77.3
Total	384	100.0	

Based on table 8, it shows that the number of respondents based on the monthly income status group. Furthermore, in the monthly income group, the highest number of respondents are from below RM1000 with 34.4% (132 respondents), followed by others with 22.7% (87 respondents), then followed by below RM2001-3000 with 16.4% (63 respondents), Rm the range of RM1001 to RM2000 with 11.7% (45 respondents), RM3001-4000 with 9.9% (38 respondents) and finally the least consist respondent is RM4001 above with 4.9% (19 respondents).

4.3 Descriptive Analysis

Table 9: Overall Demographic Profile

No.	Item Description	N	Mean	Standard Deviation
1	Age	384	2.37	0.961
2	Gender	384	1.63	0.485
3	Marital Status	384	1.31	0.512
4	Occupation	384	3.16	1.235
5	Monthly Income	384	3.07	1.958

Table 9 showed the descriptive analysis, overall mean score for demographic profile of five demographic. To elaborate this, the mean for demographic 1 is age was 2.37 (Standard Deviation=0.961). Next, the mean for demographic 2 is gender was 1.63 (Standard Deviation=0.485). Besides, the mean for demographic 3 it is marital status was 1.31 (Standard Deviation 0.512). Then, the mean for demographic 4 occupation was 3.16 (Standard Deviation=1.235). Lastly, the mean for demographic 5 monthly income was 3.07 (Standard Deviation=1.958).

Table 10: Overall Mean Score for Dependent Variable and Independent Variables

No.	Item Description	N	Mean	Standard Deviation
1	Grabfood Delivery Services During Covid-19	384	21.0938	4.28569
2	Customer Service	384	20.7969	4.19939
3	Security Perception	384	21.2109	3.82308
4	Purchasing Process Convenience	384	21.5443	3.64238
5	Product Information Quality	384	21.3151	3.90517

Table 10 showed the descriptive analysis, overall mean score for dependent variable and independent variable that consists of five variables. To elaborate this, the mean for

variable 1 is to grabfood delivery services during covid-19 was 21.0938 (Standard Deviation=4.28569). Next, the mean for variable 2 is customer service was 20.7969 (Standard Deviation=4.19939). Besides, the mean for variable 3 it is security perception was 21.2109 (Standard Deviation 3.82308). Then, the mean for variable 4 purchasing process convenience was 21.5443 (Standard Deviation=3.64238). Lastly, the mean for variable 5 product information quality was 21.3151 (Standard Deviation=3.90517).

4.4   Pearson Correlation Analysis

Table 11: Pearson Correlation

		Quality Of Grabfood Services during Covid-19	Customer Service	Security Perception	Purchasing Process Convenience	Product Information Quality
Quality Of Grabfood Services during Covid-19	Pearson Correlation	1	0.767**	0.690**	0.719**	0.725**
	Sig (2-tailed)		0.000	0.000	0.000	0.000
	N	384	384	384	384	384
Customer Service	Pearson Correlation	0.767**	1	0.746**	0.746**	0.750**
	Sig (2-tailed)	0.000		0.000	0.000	0.000
	N	384	384	384	384	384
Security Perception	Pearson Correlation	0.690**	0.746**	1	0.828**	0.737**
	Sig (2-tailed)	0.000	0.000		0.000	0.000
	N	384	384	384	384	384
Purchasing Process Convenience	Pearson Correlation	0.719**	0.746**	0.828**	1	0.753**
	Sig (2-tailed)	0.000	0.000	0.000		0.000
	N	384	384	384	384	384
Product Information Quality	Pearson Correlation	0.725**	0.750**	0.737**	.0753**	1
	Sig (2-tailed)	0.000	0.000	0.000	0.000	
	N	384	384	384	384	384

4.5   Multiple Linear Regression Analysis

Table 12: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.812	.659	.655	2.1717

Table 13: ANOVA

	Sum of Squares	Df	Mean Square	F	Sig
Regression	4633.235	4	1158.309	182.810	.000
Residual	2401.390	379	6.336		
Total	7034.625	383			

Table 14: Coefficients

	Unstadardized Coefficients		Standardized Coefficients	t	Sig
	B	**Std.Error**	**Beta**		
(Constant)	.776	.802		.968	.334
Customer Service	.415	.053	.407	7.904	.000
Security Perception	.056	.065	.050	.856	.393
Purchasing Process Convenience	.235	.070	.200	3.384	.001
Product information	.255	.056	.232	4.511	.000

5   Key Findings

This study includes analysis related to online customer satisfaction towards the quality of Grabfood service in Pengkalan Chepa during covid-19. This study also uses the theory of SERVQUAL and M-S-QUAL and uses an online method by using Google Form to connect with respondents to collect information. The information collected includes a selected area which is a district within Kelantan, Pengkalan Chepa.

Table 15: Demographic Profile of Respondents

Demographic Profile of Respondents	Detail	Total Respondent	Percentage
Age Group	20 until 29 years old	246 Respondent	64.1%
Gender	Female	240 Respondent	62.5%
Marital Status	Single	273 Respondent	71.1%
Occupation	Students	198 Respondent	51.6%
Monthly Income	Below RM 1000	132 Respondent	34.4%

5.1   Discussion

Table 16: Summary of result

Hypothesis	Result	Conclusion
H1: There is a positive relationship between the level of customer service and quality of Grabfood services during Covid-19.	R = 0.767 P = 0.000 Strong positive correlation	Accepted
H2: There is a positive relationship between the level of security perception and quality of Grabfood services during Covid-19	R = 0.690 P = 0.000 Medium positive correlation	Accepted
H3: There is a positive relationship between the level of purchasing process convenience and quality of Grabfood services during Covid-19	R = 0.719 P = 0.000 Strong positive correlation	Accepted
H4: There is a positive relationship between the level of product information quality and quality of Grabfood services during Covid-19	R = 0.725 P = 0.000 Strong positive correlation	Accepted

In this research, researcher has examined that there are relationship between customer service, security perception, purchasing process convenience, and product information quality towards quality of Grabfood services during Covid-19.

The significance value between customer service and the quality of GrabFood services during COVID-19 is 0.00, which is less than 0.01 according to hypothesis 1. The correlation coefficient value for customer service is 0.767. So, it proved that the independent variable has a strong positive relationship with dependent variable. Thus, the relationship between customer service towards quality of Grabfood services during Covid-19 shown that hypothesis was supported and accepted.

Second, researcher has examined the relationship between security perception towards quality of Grabfood services during Covid-19. The significance value between security perception and the quality of Grabfood services during COVID-19 is 0.00, which is less than 0.01 according to hypothesis 1. The correlation coefficient value for security perception is 0.690. So, it proved that the independent variable has a medium positive relationship with dependent variable. Thus, the relationship between security perception towards quality of Grabfood services during Covid-19 shown that hypothesis was supported and accepted.

Third, researcher has examined the relationship between purchasing process convenience towards quality of Grabfood services during Covid-19. The significance value between purchasing process convenience and the quality of Grabfood services during COVID-19 is 0.00, which is less than 0.01 according to hypothesis 3. The correlation coefficient value for purchasing process convenience is 0.719. So, it proved that the independent variable has a strong positive relationship with dependent variable. Thus, the relationship between purchasing process convenience towards quality of Grabfood services during Covid-19 shown that hypothesis was supported and accepted.

Fourth, researcher has examined the relationship between product information quality towards quality of Grabfood services during Covid-19. The significance value between product information quality and the quality of Grabfood services during COVID-19 is 0.00, which is less than 0.01 according to hypothesis 4. The correlation coefficient value for is 0.725. So, it proved that the independent variable has a strong positive relationship with dependent variable. Thus, the relationship between product information quality towards quality of Grabfood services during Covid-19 shown that hypothesis was supported and accepted.

5.2   Implication of the Study

The findings of this study help in understanding the users of Grabfood have been influenced by 4 variables namely customer service, security perception, purchasing process convenience and product information quality. The data collected in this study are very useful and valuable. In this study, the researcher lists several factor of Grabfood that are often used by the community in Pengkalan Chepa area namely.

Through this study, we found that the variables that in this study today lead people to use Grabfood has become one of the prevalence. This is because, wherever they are and at any time, online payments are easier to make. Without making them have to go somewhere to make some payment, this will save time. In addition, the delivery service will send them through door-to-door delivery service to be delivered to customers.

The researcher conducted the research survey in December 2022 with samples from customers who using Grabfood. The total of the respondent of this research is 384. The

respondents were differentiating from their occupation backgrounds which are government sectors, private sectors, self-employed, students and not workings. Through this understanding of study, it is applicable to use Grabfood apps to buy food.

5.3   Limitation of Study

This study was successfully carried out but not without limitation. The major obstacle that was encountered in this research was time. There is minimal research time provided during the conduct of the analysis. This is because of the extremely restricted constraints of time. This makes it difficult for researchers locate study-related knowledge. Very little time with a large increase in work often makes it difficult.

Next, studies also wish to understand a specific subject but only conduct the samples among people in the Pengkalan Chepa area. Researchers had limited ability to gain access to the appropriate of participants. In this case, the respondent's cooperation. This is because some of them answered the question based on their mood.

Lastly, the author cannot make full use of the portal journals because it is necessary to pay and to surpass the journals. And lack of previous research studies on researcher topic, prior research studies that are relevant to our research might be limited especially when we are not able to find a framework from previous research studies that match to our topic studies.

5.4   Recommendation for Future Research

Since just five factors were included in this study, researchers advise evaluating other constructs that affect customer satisfaction in subsequent research. A variety of customer happiness criteria, including delivery, purchasing, and merchandising, offer the chance to assess their impact on customer satisfaction in order to make more accurate predictions about online customer satisfaction.

Additionally, numerous respondents requested that a research be done to determine which of the food delivery apps Pengkalan Chepa, Kelantan residents used the most during the epidemic. However, no such study has yet been undertaken.

The researcher also suggests that future researchers conduct a study on the correlation between the discovered characteristics or others and online customer happiness since the research only focuses on the level of customer satisfaction factors on GrabFood delivery services.

This study has an important significance in helping to increase profitability to the Grabfood delivery service during the pandemic. Other service-related company can also benefit from this study, especially since there were not a lot of studies that focuses on the online customers' satisfaction during the Covid-19 pandemic at the time.

6   Conclusion

In conclusion, this study is aimed to examine online customer's satisfaction toward the quality of Grabfood service in Pengkalan Chepa during Covid-19. All previous research

studies in Chapters 1–3 were mostly concerned with determining online customer's satisfaction toward the quality of Grabfood services in Pengkalan Chepa during Covid-19. This research concludes the key findings, discussions, implications, limitations and recommendations set out in Chapters 4 and 5. The Pearson Correlation Analysis showed that all variables, including Customers Service, Security Perception, Purchasing Process Convenience and Product Information Quality had a positive relationship in dependent variable which is quality of Grabfood services during Covid-19.

In addition, all data collection was collected through an online questionnaire and the data was analysed by using SPSS software based on descriptive analysis, validity and reliability analysis, Pearson's Correlation Coefficient analysis and multiple linear regression. The Pearson Correlation Analysis showed that all variables, including Customer Service, Security Perception, Purchasing Process Convenience and Product Information Quality had a significant positive relationship towards quality of Grabfood services during Covid-19. Finally, the researcher also discussed some limitations encountered during the course of the research, as well as some recommendations for improvement in future research. As a final word for this study is aims to give an overview of this research.

7   Acknowledgment

Special thanks and appreciation for the efforts of all group members who showed their responsibilities during the research process. Additionally, we would like to thank all those who gave assistance and ideas in helping us complete this research study.

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Factors That Influenced Customer Satisfaction in Online Shopping Groceries among People in Kota Bharu, Kelantan

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Abstract:
The aim of this study was to investigate the factors that influence customer satisfaction in online shopping groceries among people in Kota Bharu, Kelantan. This study had three objectives which are to determine the relationship between the security and customer satisfaction in online shopping groceries among people in Kota Bharu, to determine the relationship between the quality of information sharing and customer satisfaction in online shopping groceries among people in Kota Bharu and to determine the relationship between the website design and customer satisfaction in online shopping groceries among people in Kota Bharu.A questionnaire was used as the research instrument to collect data, and the quantitative research method was chosen. In this study, 390 respondents were evaluated using the random sampling method. In this study, a structured questionnaire was used. Utilizing a Google form and questionnaire, the data were gathered. This study also used Statistical Packages for Social Science Version 26 (SPSS Version 26). This research will provide a deeper understanding of the factors that influence consumer satisfaction in online shopping groceries among people in Kota Bharu.

Keywords*: Customer satisfaction, security, quality of information sharing, website design, online shopping groceries*

1 Introduction

A measure of how satisfied your customer with your product or service is customer satisfaction. There is no pressure, and for many businesses, it is the difference between success and failure. Satisfaction with your customers is important because it helps you solve problems, keep customers from leaving, and find satisfied customers who can become your supporters. Customers are crucial to a business's existence and growth on the market. Therefore, it stands to reason that businesses wishing to compete must offer valuable and distinctive terms that meet the requirements of their customers. This satisfaction binds not only the emotions that are associated with the purchasing procedure, but also the atmosphere both before and after the purchase (Leninkumar, 2017).

The trend of shopping online is expanding rapidly. A growing number of people shop online to make purchases, get information about products, or just browse for fun. As a result, online shopping environments are increasingly influencing the relationship between markets and their customers. For example, online shopping is divided into many categories which are groceries, clothing, car accessories and many more. The goal of online shopping is to provide customers with an easy way to shop. Customers will be able to save money and time while also quickly retrieving all product information with just a few clicks. In addition, they can shop whenever and whatever suits their needs and wants (Wai et al., 2019).

According to (Vasić et al., 2019), online shopping gives customers more options, more information, and more ways to compare prices and products. It also makes it easier and more convenient for them to find the products they want online. When a customer sees an ad or online promotion on an online platform, it can increase their interest in these particular products from advertisements. The customer may seek assistance by seeking additional information prior to undoing a purchase decision. They will look for them online, such as through online catalogs, websites, or search engines, if there is insufficient information.

The objectives of this study are to determine the relationship between the security and customer satisfaction in online shopping groceries among people in Kota Bharu, to determine the relationship between the quality of information sharing and customer satisfaction in online shopping groceries among people in Kota Bharu and to determine the relationship between the website design and customer satisfaction in online shopping groceries among people in Kota Bharu.

2 Literature Review

2.1 Online Shopping

Online shopping has gained popularity among consumers as a method of shopping. This new shopping invention offers a wide range of products to potential customers, as well as several company opportunities and a huge market. E-commerce has grown rapidly over the past several years as a result of numerous benefits associated with online shopping, including simpler transactions and reduced costs when compared to other methods of shopping. Through online shopping, anyone may purchase a variety of goods or services more quickly, with more options, and for a lower price (Cuneyt Koyuncu; Gautam Bhattacharya, 2017). Thus, online shopping has become a popular shopping method ever since the Internet has declared a takeover.

2.2 Online Shopping In Malaysia

Online shopping in Malaysia is encouraging consumer growth. 80% of Malaysians make online purchases of goods or services (Simon and Sarah, 2019). The practical benefits of online shopping have increased consumers' desire to make transactions there (Ratih et al., 2020). In addition, compared to going shopping the traditional way, internet buying can save time and energy. According to the Malaysian Communications and Multimedia Commission's (2018) findings, those between the ages of 20 and 30 make up the majority of those who adopt e-commerce. This result is in line with the

findings of EcInsider (2019), which also indicated that this age group makes up the majority of internet customers.

2.3   Customer Satisfaction

According to Mascarenhas, J.B. (2018), stated how satisfied a customer is with a product, its quality, and their whole experience is measured by their level of customer satisfaction. It shows whether or not a customer is satisfied to interact with a business. It is crucial for determining how successful a business is. Recent research on customer happiness across several industries suggests that physical and psychological dynamics taking place in a three-dimensional area influence consumer satisfaction (Suhartanto et al., 2018). An developing industry with significant future potential is online shopping. Thus, examining satisfaction generation in various target industry sectors is vital when seeking to understand the factors that influence consumer satisfaction. According to Kumar & Velmurugam (2017), customers are more likely to be satisfied with their purchases at an online store if everything goes according to plan, and research has shown that customers are more likely to be satisfied and make additional purchases on the same website. Essentially, purchasing products online is the most convenient way to reach customer satisfaction.

2.4   SERVQUAL Model Theory

According to Mason (2021), previous study on the impact of the pandemic has focused on customer satisfaction as well as measures to prevent. However, the impact of the epidemic on customer outcomes has received less attention. This causes the SERVQUAL Model being used to study changes in customer social media behavior since the outbreak occurred. Nevertheless, the parameters for providing customer satisfaction have caused significant changes in the post-pandemic world (Monmousseau et al., 2020; Srivastava and Kumar, 2021; Wu et al., 2021). In addition, customer satisfaction will result if efficiency in good service will increase engagement and relationships between customers (Chang et al., 2017). This is so that firms may be more competitive in the market by using the SERVQUAL framework in this study to assess service quality, which is linked to high levels of customer satisfaction. This approach for evaluating service quality considers five factors, including tangibility, dependability, responsiveness, assurance, and empathy. Determining service problems and client happiness can therefore lead to great service quality.

2.5   Customer Satisfaction Theory

According to Chiu (2019) customer satisfaction is the primary principle of interest in marketing. In this context, the term "satisfaction" refers to an emotional state that includes a customer's reaction to their complete shopping experience with an online retailer (Faraoni et al., 2018; Pandey & Chawla, 2018). This suggests that if a consumer is happy, the affective rather than the cognitive part may be more significant. Customer satisfaction can also be characterised as the user's affective attitude toward a connection, and affective experience, like cognitive experience, has a significant impact on customer satisfaction and nice word in a successful buying setting (Barari et al., 2020).

2.6   Security

Security is considered an important factor that is taken seriously by consumers shopping online. Park & Kim defines security as the ability of online stores to control and keep security of data transactions. Further, according to Park & Kim (2012) explained that security guarantees play an important role in the establishment of trust to reduce consumer concern about misuse of personal data and transactions that can be easily damaged. When security concerns can be accepted and meet the customer expectation then they may be willing to open their personal information and feel secured. A study by Raman and Viswanathan (2013) found that there is a positive and significant influence of safety factors (e-security) on consumer purchasing decisions. It includes the segment for all security activities such as security of online shop websites. So, consumers feel confident and safe to make purchases via online shops because their personal data information is confidentially safe and not misuse by irresponsible parties. Through an extensive literature review Aggarwal and Rahul (2018) explicate a comprehensive model to explain the impact of perceived security on consumer purchase intentions and how it contributes to trust and satisfaction towards online shopping context, it was found that two attributes of website personality, i.e., transaction security and payment system are constituents of perceived security. Thus, the study attempted to explore the relationships between security and customer satisfaction.

H1: There is a positive relationship between the security and customer satisfaction in online shopping groceries among people in Kota Bharu.

2.7   Quality of information sharing

Information sharing plays an important role in the performance of a business. According to previous individual studies, information sharing potential factors that affect customer satisfaction. However, most studies focus on testing the positive relationship between customer satisfaction and information sharing. Therefore, it is necessary to evaluate customer satisfaction with information sharing. Product information pertains to detailed information about product features, consumer recommendations, evaluation reports, etc., and service information pertains to FAQs, promotional notifications, membership information, orders and delivery information, etc. (Tzeng et al., 2020).When interacting with a seller's website, online customers navigate the web pages and search for relevant product information before they generate a purchase intention or a commitment to buy (Pandey & Chawla, 2018). Information quality is the perception of customers on the quality of information displayed on a mobile commerce application. Information quality consists of two dimensions, namely content adequacy (reliability, sufficiency, and completeness of information provided) and content usefulness (informativeness and valuableness of information displayed). Add thus, the study at tempted to explore the relationship between quality of information sharing and customer satisfaction.

H2: There is a positive relationship between the quality of information sharing and customer satisfaction in online shopping groceries among people in Kota Bharu.

2.8   Website design

According to Xiao (2020), online marketing research, consumers shop online for benefits such as product variety and the assurance of reliable delivery options, all of

which contribute significantly to higher website satisfaction (Tzeng et al., 2020), better attitudes toward online shopping. Alam et al. (2008) found that website design is one of the unique features affecting Journal of Marketing Development and Competitiveness 2010 online shopping environment. Shergill and Chen, (2005) identified web site design characteristics as the dominant factor which influences consumer perceptions of online purchasing. Ho and Wu (1999) study confirmed homepage presentation and reliability are the important factors that have the most influential effect on online shopping. Therefore, the study attempted to explore the relationships between website design and customer satisfaction.

H3: There is a positive relationship between the website design and customer satisfaction in online shopping groceries among people in Kota Bharu.

2.9 The relationship between security, quality information sharing, website design and customer satisfaction

Customer happiness is regarded as the main marketing goal and a major tenet of interest in the area of marketing (Chiu & Cho, 2019).The satisfaction of the consumer is always vital to the success of a business. Numerous studies have been conducted to uncover the factors necessary to satisfy internet customers. Customer satisfaction is influenced by information quality, website design, fiscal stability, and consumer perception. Customer satisfaction, which may be impacted by security, privacy, trust, and quality, plays a crucial part in deciding the success or failure of online purchasing. In order to satisfy consumers who buy things online but cannot see or touch them in person, websites should give clear and detailed photographs and information. The most influential factors on online customer satisfaction are information, task suitability, transaction capability, and response time.

According to Shergill and Chen (2005), identified web site design elements as the key factor dictating how consumers see online shopping. Customers first interact with shops via their websites, which are basically information systems. Therefore, the design of this information system has a significant impact on the purchase experience of the client. The utility of website design has been examined. Usability of a website is the ease with which users can navigate a site. Usability is affected by website download speeds and how information is organised and integrated into the visual design layout. A user-friendly interface is vital for influencing traffic and purchases. For instance, online retailers that make it easy for consumers to locate and evaluate products may provide a price premium to time-sensitive customers. Product details and website layout are crucial for enhancing the online experience of clients. E-commerce has shifted substantially as a result of the broad use of the Internet. Due to the abundance of online shopping platforms, consumers are increasingly choosy and selective while using them. Merchants must be aware of customers' attitudes and behaviour intentions in order to design websites that satisfy customer wants and help them accomplish their profit objectives.

Gunawan & Ayuningtiyas (2018), state that information pertaining to the goods and services offered for purchase online should be included in the online shop's information. Predicting the value and usefulness of goods and services should be possible using this knowledge, which should be relevant and valuable. The information provided on

products and services must be accurate, consistent, and simple to grasp in order to meet the information demands of online shoppers. More high-quality information provided to quality online buyers will increase their interest in purchasing these products, according to customer perceptions of the site's information about its products or services (Ikhsan & Krisnadi, n.d.). How much information about products and services is relevant and useful for online shoppers in predicting? This is according to (Rachmawati et al., 2019) who define information as data that has been processed into a form that has meaning for the recipient and has real value and is felt for current decisions or future decisions. Information about an online company consists of both product and service-related facts, such as price, descriptions, and reviews. All shopping information supplied should be recent, adequate, consistent, and easy to understand in order to maximise client satisfaction. Prior empirical research has shown the positive and substantial influence of information quality on customer satisfaction. It obtained equivalent findings and replicated the relationship in the Asian environment. As a specific component of information quality, the availability of information also has a considerable effect on consumer satisfaction.

For clients who wish to make online purchases of goods or services, perceived security is the most crucial and difficult problem, especially if the website that facilitates the transaction has flaws (Belanger et al., 2002; M. Kim et al., 2011). Customers are more likely to provide financial or personal information and make purchases if they are confident that the website's security promise meets their expectations, highlighting the importance of security in attracting and retaining customers as loyal users of online stores (Park & Kim, 2003). "Perceived security" refers to the subjective likelihood that consumers believe the information they disclose online during transactions will not be stolen, saved, or shared with unauthorized people. According to Chang and Chen (2009), customers' subjective perception of risk is a major factor in e-commerce adoption, not just the website's perceived objective security but also the likelihood that the transaction is secure (Roca et al., 2009). As perceived security risk decreases, consumers' satisfaction will rise, as evidenced by an increase in satisfaction with the performance of online retail services (Massad et al., 2006; Park & Kim, 2003; Szymanski & Hise, 2000).

2.10 Conceptual Framework

There are three independent variables (IVs) involve in this research, which are security, quality of information sharing and website design. The dependent variable (DV) is the customer satisfaction in online shopping groceries among people in Kota Bharu. The research conceptual framework show as below:
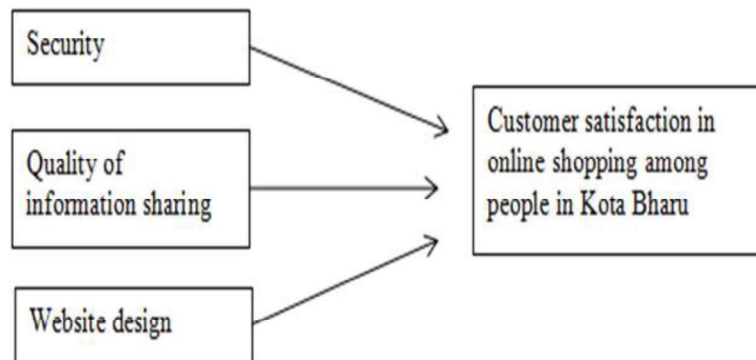
Figure 1: The Conceptual Framework of Study

3   Methodology

3.1   Research Design

According to Asenahabi (2019) research is a methodical approach to problem-solving and discovering new information. A systematic process of human knowledge discovery and advancement is another definition of research. The primary focus of design is on the aims, uses, purposes, intentions, and plans within the practical constraints of location, time, money, and the researcher's availability. By means of a structure plan that demonstrates how the major components of the research cooperate to try to answer the research questions. The term "research design" refers to a strategy for answering a research question, which is defined as the researcher's logical combination of various research components in order to deal with the research problem with the assistance of the chosen method. It was divided into qualitative and quantitative research groups (Ridder, 2017). This study was carried out using a quantitative research strategy. A quantitative study is one that uses strategies like surveys and questionnaires to measure the numerical data gathered during an overview inquiry. In order for speculations based on the findings to have a greater basis in fact, the study requires a larger sample size (Ridder, 2017).

3.2   Data Collection

Primary data is the original data collected by the researcher. In this case, the researcher will conduct a study to obtain data that has not been obtained by anyone. In this study, data was obtained from questionnaire responses distributed to respondents among residents in Kota Bharu. Additionally, the primary data in this survey was collected through google forms. This is because, by distributing the questionnaire, it can improve the accuracy and reliability of the data collected. The survey will be conducted online using the google form platform and will be distributed using social media such as whatsapp, telegram and others. For this study the researcher chooses 390 respondents by dristibute questionnaire form.

3.3   Sampling Method

The sampling method that will be used in this study is probabilistic sampling technique. Simple random sampling will be used to represent respondents in these studies and a

total 390 questionnaires will be collected during this process. Kelantan was selected since it is a remote place from the city. The population of adults between the ages of 15 and 64 in the Kelantan region is anticipated to number 1,141,293 (Department of Statistics Malaysia, 2022). Therefore, the researcher may determine that the population size is too great to do study. In order to save time and money, an analyst may adopt a more practical strategy by picking a subset of the population. A sample size is a subset of the population that is used to represent the full population. At the same time simple random sampling is one of the basic forms of probability sampling. It describes a population that has the equivalent chance to be selected.

3.4   Data Analysis

Data analysis is sums up with gathered information. It involves interpreting data using analytical and logical reasoning to identify relationships, trends, or patterns. Techniques for explicit information research include information mining, content review, business insights, and information perceptions, among others. There were four data types of data analysis used in this study, that were frequency analysis, descriptive analysis, reliability analysis and Pearson correlation. The data obtained was analyzed by using Statistical Package for the Social Science (SPSS) version 26.

4   Findings

4.1   Demographic Profile of the Respondents

The frequency analysis was part of the study's basic analysis. The data from Section A of the questionnaire included questions from various demographic variables of respondents such as gender, age, race, monthly income, what kind of items are often bought using online shopping, how often visit online shopping, how often purchase online and which shopping online platform used the most. The demographic profiles of the respondents were presented in the form of a table.

Based on the table 1 showed the gender of respondents. The total number of respondents for male was 84 respondents while the number of females was 306 respondents. Out of 390 respondents, 21.5% of total respondents were male and the remaining of 78.5% were female respondents who were involved in this study. Besides, there were 390 respondents whose age from 15-24 (72.8%), 25-34 (21.3%), 35-44 (2.8%), 45-54 (2.6%) and 55-64 (0.5%) had responded to the questionnaire. Based on the data, it shows that 78.5% of the respondents are Malay with the number of 306. The next group of respondents came from 51 Chinese with the percentage 13.1 %. There are also 33 respondents as Indian and the percentage is 8.5 %.

The highest is 66.2% (258 respondents) whose monthly income is below RM 1,000 have answered the questionnaire, and the second highest is 22.8% (89 respondents) who have income levels from RM 1,000 – RM 2,000, followed by 7.7% (30 respondents) who have an income level from RM 2,001 – RM 3000, monthly income from RM 3,001 – RM 4,000 as much as 2.3% (9 respondents) and the least respondents are those who have a monthly income from more than RM 4,001 which is as much as 1.0% (4 respondents).

The highest data of respondents was 54.9% of respondents chose grocery items with a number of 214. The next group of respondents consisted of 151 people who chose to buy food online with a percentage of 38.7%. There were also 25 respondents who chose others as items purchased online and the percentage was 6.4%.

The table 1 shows the majority who answered weekly as the frequency of visiting online shopping because it has the highest percentage value of 65.9% and the frequency of 257 respondents. In addition, respondents who visited online shopping monthly had the second highest percentage value of 13.3% and a frequency of 52 respondents. Next, the percentage value for respondents for the frequency of visiting online shopping once in a month is 12.1%, with a frequency of 47 respondents. Finally, the percentage value for respondents who visit online shopping every day is 8.7% with a frequency of 34 respondents.

The table shows the majority who answered weekly as the frequency of online purchases was the highest percentage value of 61.0% and the frequency of 238 respondents. In addition, respondents who answered online purchases every month had the second highest percentage value of 21.0% and a frequency of 82 respondents. Next, the percentage value for respondents for the frequency of online purchases once in a few months per month is 16.2%, with a frequency of 63 respondents, followed by the frequency of online purchases every day is 1.5%, with a frequency of 6 respondents. Finally, the percentage value for respondents who never buy online is 0.3% with a frequency of 1 respondent.

The table 1 shows the majority who answered shopee as an online shopping platform because it has the highest percentage value of 91.3% and a frequency of 356 respondents. In addition, respondents who answered the online shopping platform using Lazada had the second highest percentage value of 4.6% and a frequency of 18 respondents. Next, the percentage value for respondents for online shopping platforms in other platforms such as TikTok is 2.1%, with a frequency of 8 respondents, followed by online shopping platforms using Amazon is 1.0%, with a frequency of 4 respondents. Finally, respondents for online shopping platforms using Carousell and Mudah.com have the same percentage value of 0.5% with the same frequency of 2 respondents.

Table 1: Respondent Profiles

Profile	Items	Frequency	Percentage (%)
Gender	Male	84	21.5
	Female	306	78.5
Age	15 – 24 years old	284	72.8
	26 – 34 years old	83	21.3
	35 – 44 years old	11	2.8
	45 – 54 years old	10	2.6
	55 – 64 years old	2	.5
Race	Malay	306	78.5
	Chinese	51	13.1
	Indian	33	8.5
Monthly Income	Below RM1000	258	66.2
	RM1000-RM2000	89	22.8
	RM2001-RM3000	30	7.7
	RM3001-RM4000	9	2.3
	More than RM4001	4	1.0

Types of goods purchased	Food	151	38.7
	Groceries	214	54.9
	Others	25	6.4
How often visit online shopping	Everyday	34	8.7
	Weekly	257	65.9
	Monthly	52	13.3
	Once within several month	47	12.1
How often purchase online	Everyday	6	1.5
	Weekly	238	61.0
	Monthly	82	21.0
	Once within several month	63	16.2
	Never	1	.3
Which shopping online used the most	Amazon	4	1.0
	Carousell	2	.5
	Lazada	18	4.6
	Mudah.com	2	.5
	Shopee	356	91.3
	Others	8	2.1

4.2 Reliability Analysis

The alpha reliability of the independent variable and dependent variable internal consistency was used in this study to determine the variable size of independent and dependent variable. However the acceptable Coefficient Alpha should be greater than or equal to 0.6. In order to verify the measurement instrument's internal consistency, the independent variables were subjected to the reliability test. For each variable, Cronbach's Alpha was between 0.901 and 0.934. According to Junyong (2017), they were significantly higher than the minimum acceptable level of reliability, which was 0.6. Cronbach's Alpha of 0.934 makes website design the most reliable. It demonstrated that the customer satisfaction in online shopping was more influenced by website design factors. Cronbach's Alpha values of 0.913 and 0.908 indicated that security and quality of information sharing factors were reliable, and all variables were retained for further investigation.

Table 2: Result of Reliability Analysis

Variables	Number of Item	Cronbach's Alpha
Security	3	0.913
Quality of information sharing	3	0.908
Website design	3	0.934
Customer satisfaction in online shopping	3	0.901

4.3 Descriptive Analysis

Table 3 shows the number of respondents, the mean and standard deviation of the dependent variable and the independent variables. The mean of the dependent variable that is the customer satisfaction in online shopping is 4.59 and the standard deviation is 0.631. For the independent variables, website design has the highest mean which is 4.55 followed by quality of information sharing at 4.51 and security at 4.49. And the highest standard deviation will be quality of information sharing with 0.719 followed by security at 0.718 and website design with 0.683.

Table 3: Descriptive Statistics of Independent Variable and Dependent Variable

Variables	N	Mean	Standard Deviation
Security	390	4.49	.718
Quality of Information sharing	390	4.51	.719
Website design	390	4.55	.683
Customer satisfaction in online shopping	390	4.59	.631

4.4 Pearson Correlation Analysis

Pearson's correlation analysis was one of the important analyses that measured the linear relationship between the two variables. The objective of this analysis was to determine whether there are correlations between independent variables (security, quality of information sharing and website design) and the dependent variable (Customer satisfaction in online shopping). If the relationship is significant, researchers must decide whether the level of strength of the association is acceptable.

Table 4: Pearson Correlations Analysis

		Security	Customer Satisfaction In Online Shopping
Security	Pearson Correlation	1	.777**
	Sig. (2-tailed)		.000
	N	390	390
Customer Satisfaction In Online Shopping	Pearson Correlation	.777**	1
	Sig. (2-tailed)	.000	
	N	390	390
		Quality of information sharing	**Customer Satisfaction In Online Shopping**
Quality of information sharing	Pearson Correlation	1	.737**
	Sig. (2-tailed)		.000
	N	390	390
Customer Satisfaction In Online Shopping	Pearson Correlation	.737**	1
	Sig. (2-tailed)		.000
	N	390	390
		Website design	**Customer Satisfaction In Online Shopping**
Website design	Pearson Correlation	1	.733**
	Sig. (2-tailed)		
	N	390	390
Customer Satisfaction In Online Shopping	Pearson Correlation	.733	1
	Sig. (2-tailed)		.000
	N	390	390

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

Hypothesis 1: Security

There is a significant relationship between security and customer satisfaction in online shopping groceries among people in Kota Bharu. From the result of the correlation test, the correlation value for security and customer satisfaction in online shopping groceries

among people in Kota Bharu show a positive value of 0.777. Therefore, the results indicate the alternative hypothesis (H1) is accepted. Based on the research question 1, the study can conclude that there is a positive and significant relationship between the security and customer satisfaction in online shopping groceries among people in Kota Bharu.

Hypothesis 2: Quality of Information Sharing

There is a significant relationship between quality of information sharing and customer satisfaction in online shopping groceries among people in Kota Bharu. From the result of the correlation test, the correlation value for quality of information sharing and customer satisfaction in online shopping groceries among people in Kota Bharu show a positive value of 0.737. Therefore, the results indicate the alternative hypothesis (H2) is accepted. Based on the research question 2, the study can conclude that there is a positive and significant relationship between the quality of information sharing and customer satisfaction in online shopping groceries among people in Kota Bharu.

Hypothesis 3: Website Design

There is a significant relationship between website design and customer satisfaction in online shopping groceries among people in Kota Bharu. From the result of the correlation test, the correlation value for website design and customer satisfaction in online shopping groceries among people in Kota Bharu show a positive value of 0.733. Therefore, the results indicate the alternative hypothesis (H3) is accepted. Based on the research question 3, the study can conclude that there is a positive and significant relationship between the website design and customer satisfaction in online shopping groceries among people in Kota Bharu.

5   Discussion and Recommendation

Based on the findings and conclusion presented, the following recommendations for future research are listed which are focus on speed and ease of use. Make it easy for customers to register, find the products they require, add items to their shopping carts, review and update their orders, and make payments. Make sure that pages load quickly. Customers can leave their carts in the event that the website loads slowly, preventing them from making a purchase.

Customers' internet security is something grocery stores must assure. Because they think their financial information will be shared, many customers avoid internet shopping. Retailers must strictly enforce the security of consumer data and ensure that it is not disclosed to or shared with third parties in any form. Due to the impersonality and technological nature of online grocery purchasing, this issue is especially important.

Retailers can keep their customers for a long time if they provide high-quality products to their customers, as product quality is the most important factor in determining customer satisfaction. Due to this, both customers and rival retailers had a favorable perception of the retailer's brand. Customers are very conscious of how much time they spend shopping, and they prefer to visit stores and look for things as little as possible.

6 Conclusion

The researcher must present the study's goal in relation to the study's problem at the chapter's conclusion. This study looks at how security, quality of information sharing and website design factors have affected the customer satisfaction in online shopping groceries among people in Kota Bharu. This study intended to determine how each independent variable's component relates to the dependent variables.

Through the use of an online survey, 390 respondents have participated in this study. Based on descriptive statistics, reliability analysis, and correlation analysis, the data were collected and analyzed using SPSS version 26. The reliability analysis revealed that most of the factors are a reliable number of variables which was 0.901 to 0.934. As a result, this study can accept the demonstrated result as reliable.

To conclude, the purpose of this study is to learn how security, quality of information sharing and website design factors affect the customer satisfaction in online shopping groceries among people in Kota Bharu who purchase on online websites. Acceptable is the outcome of the research objectives, which were to determine the security, quality of information sharing and website design that influence customer satisfaction in online shopping groceries among people in Kota Bharu. In the meantime, such outcomes can be predicted regarding the security, quality of information sharing and website design factors that influence customer satisfaction in online shopping groceries among people in Kota Bharu.

7 Acknowledgement

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Factor That Affecting Customer Satisfaction on Online Shopping Among the Students of Universiti Malaysia Kelantan

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Abstract:
This research study was carried out to explore the factors that affecting customer satisfaction on online shopping among the students of University Malaysia Kelantan. Due to Covid-19, online shopping became the most popular to purchase goods and services. New technology and shopping apps has made life much easier for consumers to purchase safely and saves more time with e- shopping. In this study, the researchers had examined four factors which are reasonable price, product quality, service quality and security. To describe the independent variables and dependent variables, the disconfirmation model of customer satisfaction was used. The researchers gathered information systematically to gain more in depth knowledge about customer satisfaction. In this analysis, a quantitative data collection method and simple random sampling technique were used. A total of 341 students of University Malaysia Kelantan were tested using questionnaires and being analyzed by using Pearson's Correlation Statistic Package (SPSS). The result indicates that all the elements have a significant relationship with University Malaysia Kelantan student's intention. The implication and future research of the study were discussed at the end of this paper.

Keywords*: Customer satisfaction, Online shopping, Reasonable price, Product quality, Service quality, Security*

1   Introduction

1.1   Background of the Study

Customer satisfaction can be defined as the user's fulfillment response. The response given is the customer's evaluation based on the product or service received and whether the product or service can meet the customer's needs or expectations. Customer satisfaction can be assessed if the customer's expectations of the product or service are met (Emy, 2019). In other words, customer satisfaction is the happy feeling that results when the goods purchased and received meet the customer's expectations. Customer satisfaction is an important thing in every business because a business that improves over time depends on customers when their products or services can satisfy customers.

E-commerce is purchase and sale of goods or services over the internet that involves the transfer of money (Shouvik, 2019). The word e-commerce is also known as electronic commerce where it is used by users to purchase physical goods online and make online payments through devices such as smartphone. The popularity of e-commerce has increased over time and it has replaced the old method of physical buying and selling. Among the types of e-commerce that are often used by customers, especially in Malaysia, are such as Shopee, Lazada, Agoda, Booking.com, and so on. These types of e-commerce are divided into several uses such as food delivery, hotel reservations, online shopping, and so on. Based on previous research from Eugene (2022), in Malaysia, the use of e-commerce has increased following Covid-19 which has hit the world and requires customers to buy goods over the internet. Covid-19 makes e-commerce has improved sales and performance which makes customers trust to buy goods over the internet. The use of e-commerce is also increasing because it has made it easier for customers to buy goods globally.

The use of the internet in today's times is increasing day by day and has brought the intention of consumers to online shopping. Online shopping has become a convenient platform as it makes it easy for consumers to buy the things they need and want. Consumers only need a little time for online shopping and it is more convenient for them than physical shopping, which will face traffic jams, limited time, distant malls, etc. Based on previous research from Roszi (2021), there is a 577% increase in internet users out of three billion internet users globally compared to the year 2000, and 80% of internet users in Malaysia have made purchases online.

Based on previous research from Puveandharan (2021), a small population of Malaysia is people aged 40 and above who still do not shop online because they think shopping directly from a store is more accessible. Younger generations such as generation Z are more inclined to online shopping because they are tech-savvy. Generation Z is tech-savvy because they were born in the late 2000s which is at that time they had started using the latest technologies that made it easy for them to use the internet.

1.2 Research objectives

1. To examine the significant relationship between price and customer satisfaction recognition.
2. To observe the impact of product on customer satisfaction recognition.
3. To investigate how the service quality has influenced on customer satisfaction recognition.
4. To determine the significant relationship between security and customer satisfaction recognition.

1.3 Significant of study

The significance of this study implies advantages that were gained by few parties afterconducting this study. This research is to identify the factors affecting towards customer satisfaction on online shopping based on the four elements as stated in previous section.

The main aim of doing this research is to make the researcher to realise the actual factor that affect in customer satisfaction. To obtain the information based on the topic through

online research, article, journal, magazine, and many more. The researcher also did create some application that will give benefits to the respondents, the students of University Malaysia Kelantan Pengkalan Chepa.

The researcher or entrepreneur was given the ability to carry out the study by using the techniques they studied during the lecture period. The findings of this study will provide potential entrepreneurs with knowledge who want to explore the research relevant to this sector. Based on the knowledge from the study, new entrants can also strengthen their company approach and also able to form more imaginative and creative application compared to us. The information or the research that the researcher has done can also help the entrepreneur to achieve their goals in the future.

The benefit of this research will be gained by some of the students, and staffs too as they are one of the online purchasers. This is because the research is about a topic that the factor affecting in customer satisfaction on online shopping to improve some of the problem that arises among the purchasers while do shopping on online. The researcher targeted the university students as one of the online purchaser to see on how the four elements get influencing them while doing online shopping.

2   Literature Review

2.1   Word by mouth

Word of mouth is the process of informing others about a specific product or service. Word of mouth is also plays an important role of affecting customer satisfaction. Recommendations from word of mouth for other customer that is easily discussed among people who have direct relationship, experience or not real experience (Nguyen et al, 2019). The impact of sales performance on online retailers indicated by online products reviews even though there is some argument about which dimension or metric associated with online reviews is most influential (Wu et al, 2018).

Furthermore, word of mouth is the greatest way to sell products or services because it is a human to human communication. Word of mouth is trustworthy because they will recommend the product or services that they use and impressed to family or friends (Nguyen et al, 2019). As stated above, word of mouth is marketing information among customers that can affect customers' satisfaction EWOM is a way of communication from customers on the Internet (Al- Gasawneh et al, 2019).

Based on a research, contribution from EWOM that gives information to customers will experience different level of social and psychological distance among them and the product (Yang et al, 2020). For that reason, word of mouth is very crucial to the retailers. It is called indirect marketing strategies that will benefit the customer and also the retailers especially from online platform based on the reviews or social media marketing.

Additionally, word of mouth is also affected by customers' expectations of products and content. In other words, customers will accept the product quality as beneficial based on the star ratings reviews since it may meet their expectations (Moore et al, 2019). As a result, customer word of mouth can increase sales and product reliability and drive to

customers' satisfaction. (Anastasiei et al, 2019). That is why word of mouth is critical to online retailers that can lead to customers' satisfaction.

2.2 Customer satisfaction

Customer satisfaction can be defined as the user's fulfillment response. The response given is the customer's evaluation based on the product or service received and whether the product or service can meet the customer's needs or expectations. Customer satisfaction can be assessed if the customer's expectations of the product or service are met (Emy Ezura A. Jalil, 2019). Online shopping is a process where customers can buy goods and services directly from sellers without meet face to face. In other words, online shopping is the process of buying goods and services using a machine via the internet (Thangavel, 2015).

Due to the convenience, many customers choose to online shopping compared to shopping directly at the store. Online shopping allows customers to buy goods and services globally. In other words, there is no limit to where to get the desired goods and services for example, customers from Malaysia want to buy goods from China and only need to buy online without having to go to China. However, online shopping happens when customer satisfaction can be achieved. Customer satisfaction can be achieved through previous experience and customer trust in online shopping. Based on previous research from Rashed Al Karim (2013), customers prefer online shopping because it is very convenient for them as they can make purchases 24/7 hours. But in customer satisfaction, it depends on several factors such as price, security, and so on. Online shopping will not happen if customer satisfaction is not achieved if these factors are not managed well by the seller.

2.3 Reasonable price

From the perspective of the consumer, "price is what is given up or sacrificed to Obtain a product or service," according to Zeithaml (1988). Based on Bei and Chiao's (2001) findings, "What is sacrificed or given up in order to obtain a good or service is referred to as the price, according to Kotler and Armstrong (2012), who also argued that the price is the sum of money. The total of the values that consumers exchange for the advantages of owning or utilising a good or service; the price that is put on a good or service".

The high-low price range of a product can have a big impact on a customer's decision to buy it. This is how people perceive a certain price. Customers will pay close attention to what other customers have spent; nobody likes to spend more money than other customers. The fairness of the price will affect customers' perceptions and, eventually, their willingness to purchase. For example, toothpaste goods, the price is the sum of money withheld from the consumer in return for a tube of toothpaste, customer value transferred to obtain the advantages of toothpaste ownership or use. Kotler, Keller, and Kusdiyah (2012) described pricing as a measurable concept made up of a number of indications, including the price that is reasonable, fair, discounted, competitive, and suitable in online purchasing at Lazada.

Hypothesis 1: Reasonable rice has a significant and positive impact on word by mouth.

2.4 Product quality

Product quality is a set of features and characteristics of a marketable goods that meet basic requirements and can be controlled by the supplier in order to meet consumer expectations. Researchers agreed that product quality is one of the most influental indicators of customers' satisfaction. Lee (2017) stated that a high risk purchase existed when the product was important to customer and customer may have a stronger desire to learn more about the product or look for alternative option such as product from Lazada, Shopee and much more.

Customers prioritize quality over anything else when it comes to shopping online. Although online shopping does not allow consumers to directly touch or feel the quality of the product, comments on the website such as Shopee can provide some indication of the product quality (Guo et. al, 2017). According to a finding, quality is an essential property of a product and the expected standard of product or service achievement. Improving product quality will have a positive impact on consumer satisfaction.

One of the factors that lead to customer satisfaction is product quality which companies must understand in order to create it. Yanti Murni stated that quality has a major impact on customer satisfaction. Consequently, it is agreed that customer satisfaction were effected by quality of the products. Apart from that, customers tend to shop online more often if they satisfied with the products.

Hypothesis 2: Product quality has a significant and positive impact on word by mouth.

2.5 Service quality

A research shows that factors of online shopping include the service quality. Service quality is essential for businesses to survive while maintaining customer trust. The highest relation for service action is the quality, which is a determinant of the company's success. Quality, satisfaction and dissatisfaction are all discussed in the context of service quality. If the customer receives a higher than expected level of service, then the service is high quality. If the service meets the customer's needs, then the service is good and achieves customers' satisfaction. In contrast, if the service received fails to meet the customer's expectations, the service is poor quality or incompetent.

Service quality has a direct impact on customers' ability to maintain strong and loyalty from online stores. According to Guo et al., the quality of services can support online traders in generating an effective and efficient way of shopping, shipping products and services. The concept of service quality was first introduced by Parasuraman et al. Service quality is described as the extent to which service meets the needs of customers and measured by comparing the expectation. A study showed that service quality is improvements made by businesses to increase the quality of products, processes and services. SERVQUAL was created by Parasuraman et al. to measure the service quality from the customers' perceptions. There are five dimensions of SERVQUAL model including reliability, tangibility, assurance, responsiveness and empathy.

In contrast, a number of studies on online commerce believe that service quality has significant impact on customer satisfaction (Vasic et al, 2019). This is why provide a

high quality service plays a crucial role in improving the customer satisfaction. Muh Feroza stated that the level at which a website can effectively and efficiently influence the customers shopping needs, making purchases and the delivery of the products.

Hypothesis 3: Service quality has a significant and positive impact on word by mouth.

2.6   Security

Security plays a substantial role in online shopping, it is seen as a key factor that online shoppers take serious. Security issues associated with digital banking arises as a result of such traitor from the medium through which online banking is carried out and those who use it, rather than from transactions. The reason of doing so or not is obvious, where the security concerns have gradually leaped into online banking, and thence the use of e-banking by the social circle is also encouraged by security (Kelly, 2019). The data transmission in security is seen as a crucial component in online banking since it protects the user data from being accessed and theft the data by hackers. On the other hand, authentication is also seen as another crucial step which restricts access to the data to only authorised individuals. It's essential to avoid complicated authorisation in order to process data rapidly (Ibrahim et al., 2016). Based on the study done by Hayikader et al., they had looked at several security concerns with the structure of online banking platform and do investigate the security ways to address the problems.

Hypothesis 4: Security has a significant and positive impact on word by mouth.
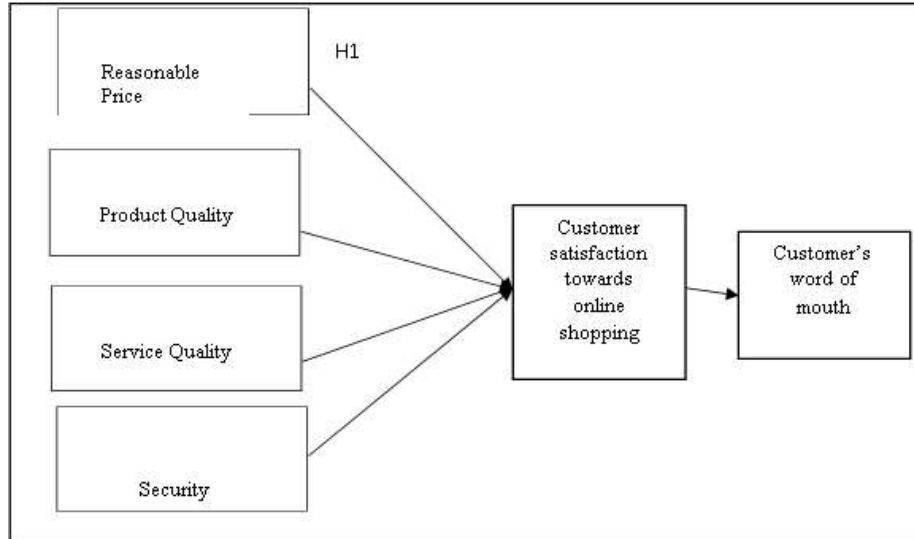
2.7   Conceptual framework

Figure 1: The conceptual framework

3   Material and Method

The sort of information the researcher use in this analysis is quantitative. The technical process used in this research which is involving the collection of data, methods of analysis, and statistical tool in order to describe the factor affecting customer's

satisfaction on online shopping among the students of University Malaysia Kelantan (UMK) in Pengkalan Chepa. According to the result of some research, most of the researcher had used Quantitative Design Method to carry out the study.

In this study, the researcher used two research methods which are primary data and secondary data. For primary data, the researcher used a questionnaire and distributed it to the respondents to collect data. For secondary data, the researcher use previous studies by collecting existing data to support this study.

The population of this study is wider than the concept sample frame. In this study, the population has been determined by the researcher who is a Universiti Malaysia Kelantan, Pengkalan Chepa student. There are 3451 students under the Faculty of Entrepreneurship and Business. These students include several courses such as accounting (SAA), Islamic bank and financial (SAB), entrepreneur (SAE), commerce (SAK), logistics (SAL), and retailing (SAR).

Sampling is a technique used by a researcher to select a relatively small number of individuals from defined population as a subject for a study based on the objectives of the research (G Sharma, 2017). Sampling is an important factor in determine the quantity and reliability of much quantitative research. In this study, the participant of the population used is students from University Malaysia Kelantan of Kampus Kota. The sample size of this study is based on the table of Krejcie and Morgan table.

Sampling processes involves studying a subset of the total number of individuals from the population in order to make assumptions about the entire population. A specific sampling process is used to select random people. Choosing sampling method necessities several decisions for researchers. The most crucial decision is to use probability or non-probability methods. There are two faculties of students University Malaysia Kelantan which is Faculty if Entrepreneurship and Business and Faculty of Hospitality, Tourism and Wellness. Probability sampling is used to getting the results from the population.

A thorough analysis of the pertinent literature served as the foundation for the creation of a survey questionnaire. According to respondents' detailed responses, the target audience consists of UMK students, who are typically between the ages of 20 and 26 and utilise the internet to conduct various tasks, such as shopping. Because the researcher wishes to distribute the questionnaire to anyone who is familiar with online shopping. Additionally, information is gathered from respondents who have experience purchasing online in order to study the factors that affecting customer satisfaction on online shopping using e-commerce.

For this study, a questionnaire that included a brief explanation of the study's objective and importance was employed as the instrument. In this study, we have used interval scale in the questionnaire. The interval variable is a measuring variable that is used to specify values measured along a scale with each point spaced evenly apart. The interval scale collects and measures data where intervals between two points are of equal distance. One of the most used interval scale questions is arranged on a five-point Likert Scale question, where each emotion is denoted with a number (1 to 5), and the variables range from strongly disagree to strongly agree.

Once the data is acquired and recorded, the data will be analysed with several methods. This is important to guide and support the data collected using the questionnaire that are associated to both dependent and independent variables to achieve more accurate result. Statistical package for the social science (SPSS) is used for the simple descriptive data compute the mean score of factors and the advanced statistical procedures of factor analysis. It will be presented in form of tables, figures, and percentages. Then, the interpretation and discussion of the data will be constructed. SPSS is used in this study because it can collect the data and generate tabulated reports, charts and plots of distribution and trends, descriptive analysis and complex statistical analysis.

In meantime, one of the leading software tools, the partial least squares called SmartPLS were used in this study too where it provides a rich documentation of analyses and reports to generate squares regression, bootstrapping options, blindfolding and matrix analysis. This is easy-to-use software where it represented as the best choice for most computation (Wong, 2013).

4   Findings

4.1   Demographic profile

Table 1: Respondent of demographic profile

Respondent	Classification	Frequency (N=341)	Percentage (%)
Gender	Female	210	61.4
	Male	132	38.6
Age	19 - 20 years old	54	15.8
	21 - 22 years old	99	28.9
	23 - 24 years old	155	45.3
	25 years old and above	34	9.9
Race	Chinese	84	24.6
	Indian	84	24.6
	Malay	134	39.2
	Other	40	11.7
Course year	First year	51	14.9
	Fourth year	158	46.2
	Second year	66	19.3
	Third year	67	19.6
Courses	SAA	37	10.8
	SAB	36	10.5
	SAE	50	14.6
	SAK	60	17.5
	SAL	119	34.8
	SAR	40	11.7

Table 1 shows the number of respondents on gender which consists of female and male. Based on the table above, the number of female respondents is more than the male respondents. The percentage of female are 61.4 (n=210), while 38.6 percent (n=132) are the male. Table 1 shows the number of respondents based on level of age. The highest respondents who answered the survey are from age of 23-24 years old with 45.3 percent (n=155), while the second highest respondents are from 21-22 years old with 28.9

percent (n=99), and the rest percentage with 15.8 and 9.9 are the respondents from age 19-20 and 25 & above respectively.

Table 1 shows the number of respondents on race. The races have been divided into four categories, which are Chinese, Indian, Malay, and others. Among them, Malay respondents shows the highest score on answering the survey with 39.2 percent (n=134). Meanwhile, the percentage of Chinese and Indian respondents have answered are same in percentage number which is 24.6 (n= 84) each. The percentage of 11.7 (n=40) shows for the respondents answered from the others race. Table 1 shows the number of respondents from course year. The respondents of students who have answered the survey with the percentage of 46.2 (n=158) are from fourth year, 19.6 percent (n=67) from third year, 19.3 percent (n=66) from second year, and 14.9 percent (n=51) are from first year. Based on the chart, respondents from fourth year have answered the survey with the highest percentage, while the least are showed by the first year respondents.

Table 1 depicts the numbers of respondents on courses. Respondents from course SAL showed the highest rank from all other courses with 34.8 percent (n=119). The second highest respondent have answered the survey are from SAK course with 17.5 percent (n=60).The rest three course of SAA, SAB, and SAE courses have ranked in average with its percentages of 10.8, 10.5, and 14.6 each.

The descriptive analysis that showed independent variables verified moderate mean score for reasonable price (M = 4.02, SD = 1.103). Altogether the dimension variables also scored a moderate mean score for product quality (M = 4.08, SD = 1.151), service quality (M = 4.09, SD = 1.123), security (M = 4.13, SD = 1.128) and word of mouth (M = 4.16, SD = 1.026)

4.2 Descriptive Analysis

Table 2: Descriptive analysis

Variable	Mean	Standard Deviation	Item
Word by mouth	4.02	1.103	5
Reasonable price	4.08	1.151	5
Product quality	4.09	1.123	5
Service quality	4.13	1.128	5
Security	4.16	1.026	5

The descriptive analysis that showed independent variables verified moderate mean score for reasonable price (M = 4.02, SD = 1.103). Altogether the dimension variables also scored a moderate mean score for product quality (M = 4.08, SD = 1.151), service quality (M = 4.09, SD = 1.123), security (M = 4.13, SD = 1.128) and word of mouth (M = 4.16, SD = 1.026).

4.3 Preliminary Analysis

The information gathered from the study was dissected utilizing the Statistical Package for the Social Science (SPSS) version 26.0 software and Partial Least Square (PLS-SEM) as a data analysis tool, which is a non-parametric statistical tool. A pilot study was completed by gathering information from 20 respondents. Then it had been tested on reliability test. Preliminary analysis was carried out to access the question's

reliability. Additionally, preliminary analysis is the first important step in analysing the data often performed by any researchers. The purpose of this reliability test is to access the consistency of the data collected. Besides the preliminary analysis was conducted to ensure the analysis reliable of the data obtained from the survey. The data were measured by using Cronbach's Alpha value in the SPSS software. Based on table 3, the range of Cronbach's Alpha coefficient for Customer Satisfaction towards online shopping is 0.940.

Table 3: Reliability test for customer satisfaction towards online shopping

Variables	Cronbach's Alpha	No of items	N (sample size)
Customer Satisfactiontowards online shopping	0.940	5	341

4.4 Reliability Test

Table 4: Result of reliability test

Dimension	Cronbach's Alpha
Price	0.959
Product quality	0.965
Service quality	0.970
Security	0.938
Word-of-mouth	0.940

There are four main measures in independent variables. The first variable's Cronbach's Alpha value is 0.959 which considered preferable. Next for the product quality, the Cronbach's Alpha value is 0.965 it indicates reliable. Later, the Cronbach's Alpha value for service quality is 0.970 which is best, then for security variable, the Cronbach's Alpha value is 0.938. And the value of Cronbach's Alpha for dependent variable, which is the word-of-mouth is 0.940 is considered as preferable.

4.5 Hypothesis testing

Table 5: Pearson correlation analysis

		Word by mouth	Price	Product quality	Service quality	Security
Word by mouth	Pearson Correlation	1	.876**	.898**	.883**	.884**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	342	342	342	342	342
Price	Pearson Correlation	.876**	1	.944**	.950**	.933**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	342	342	342	342	342
Product quality	Pearson Correlation	.898**	.944**	1	.967**	.943**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	342	342	342	342	342
Service quality	Pearson Correlation	.883**	.950**	.967**	1	.952**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	342	342	342	342	342
Security	Pearson Correlation	.884**	.933**	.943**	.952**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	342	342	342	342	342

Hypothesis 1 (H1) is reasonable price has significant and positive impact with word by mouth. The table 5 shows the value of r is 0.876 and value of p is 0.000. Thus, the

hypothesis 1 (H1) is accepted that reasonable price has significant and positive impact with word by mouth.

Hypothesis 2 (H2) is product quality has significant and positive impact with word by mouth. The table 5 shows the value of r is 0.898 and value of p is 0.000. Thus, the hypothesis 2 (H2) is accepted that product quality has significant and positive impact with word by mouth.

Hypothesis 3 (H3) is service quality has significant and positive impact with word by mouth. The table 5 shows the value of r is 0.883 and value of p is 0.000. Thus, the hypothesis 3 (H3) is accepted that service quality has significant and positive impact with word by mouth.

Hypothesis 4 (H4) is reasonable price has significant and positive impact with word by mouth. The table 5 shows the value of r is 0.884 and value of p is 0.000. Thus, the hypothesis 4 (H4) is accepted that reasonable price has significant and positive impact with word by mouth

5   Discussion and Recommendation

The first hypothesis predicted a positive and significant relationship between reasonable price and customer satisfaction recognition. Based on the Pearson Correlation Analysis, the results show that reasonable price is highly influences on customer satisfaction on online shopping. This refers to Pearson Correlation results that shows good positive correlation between independent variable which is reasonable price and dependent variable at $r = 0.876$, $p > 0.01$ are shown.

The first independent variable which is reasonable price with the statement "The product features can be considered the most valuable for its price" has the highest mean of 4.14. This is because University Malaysia Kelantan students can be said as customers that believe the word of mouth will provide them useful information that leads to online shopping desire. Earlier research has identified trust and satisfaction as the primary determinants of word of mouth in foreign markets. (Xin Zhang et al, 2019).

The second hypothesis predicted a positive and significant relationship between product quality and customer's satisfaction recognition. According to the Pearson Correlation Analysis, the results show that product quality is highly influences on customer satisfaction on online shopping. This refers to Pearson Correlation results that shows good positive correlation between independent variable which is product quality and dependent variable at $r = 0.898$, $p > 0.01$ are shown.

The second independent variable which is product quality with the statement "The quality of product are concerned from other customers' review and comments about the particular item" has the highest mean with 4.13. This is because University Malaysia Kelantan students as customers believe that product quality and can provide them satisfaction from word of mouth. Customers who are satisfied will return to purchase and they will begin word of mouth marketing and invite others. This result is supported by Baharch Ahmadinead (2019).

The third hypothesis predicted a positive and significant relationship between service quality and customer's satisfaction recognition. According to the Pearson Correlation Analysis, the results show that service quality is highly influences on customer satisfaction on online shopping. This refers to Pearson Correlation results that shows good positive correlation between independent variable which is service quality and dependent variable at $r = 0.883$, $p > 0.01$ are shown.

The third independent variable which is product quality with the statement "Online stores offers varieties mode of services (life chats, SMS texting, self- service menus and so on)" has the highest mean from all five questions with 4.17. This is because University Malaysia Kelantan students as customers believe that service quality and can provides them satisfaction from word of mouth. The previous research focuses on customers perceptions of various aspects of service quality (Kaushik Mukerjee, 2018).

The fourth hypothesis predicted a positive and significant relationship between security and customer's satisfaction recognition. Based on the Pearson Correlation Analysis, the results show that security is highly influences on customer satisfaction on online shopping. This refers to Pearson Correlation results that shows good positive correlation between independent variable which is security and dependent variable at $r = 0.884$, $p > 0.01$ are shown.

The fourth independent variable which is product quality with the statement "I will check for the security of the website stores and then only will proceed to pay". has the highest mean from all five questions with 4.40. This is because University Malaysia Kelantan students as customers believe that security and can provide them satisfaction from word of mouth. Online customers prefer to use websites that they believe are secure when the websites provide high level of security (A.S Al Adwan et al, 2020).

Based on findings, the independent variables which are reasonable price, product quality, service quality, and security has significant impact to dependent variable and moderate variable which are word by mouth and customer satisfaction toward online shopping among the students of Universiti Malaysia Kelantan. This study was conducted in only one place, namely Universiti Malaysia Kelantan, Pengkalan Chepa. For future studies, researchers are suggested to expand the area of the place to get a large population such as some areas of the district or state. A large population allows the researcher to get a large sample, which means getting a high number of respondents so that the results of the study can be improved.

In this study, the researcher only studied a few factor to produce the results studied such as reasonable price, product quality, service quality, and security. Therefore, future researchers are suggested to add other characteristics as variables to be studied such as consumer behavior, income, etc. to provide new insights to the readers. Furthermore, various studies of different variables can increase knowledge and improve the parties involved in online shopping.

Lastly, some respondents did not show interest in answering the questionnaire if the questionnaire was only distributed indirectly to the respondents. Therefore, future researchers are suggested to distribute the questionnaire directly to the respondents because it allows the researcher to get responses at the same time. Furthermore,

distributing the questionnaire directly to respondents can also ensure that respondents are involved in responding.

6   Conclusion

The main purpose of this research is to examine the relationship between reasonable price, product quality, service quality, security and customers' satisfaction in word of mouth. In Chapter 3 has mentioned the total numbers of the 341 respondents among the students in University Malaysia Kelantan. The population of respondent focused on University Malaysia Kelantan in Faculty of Business and Entrepreneurship students. Next, in Chapter 4 are the findings of result from the questionnaires survey that was analyse using frequency, descriptive, Pearson correlation analysis, and reliability test. The data obtained from the questionnaire has been evaluated by software program using Statistical Package for the Social Science (SPSS) and partial least square (SmartPLS) Lastly in Chapter 5 is about the summarize of the results based on data analysis. Thus, the entire hypothesis such as H1, H2, H3 and H4 stated are accepted. According to the results, all independent variables which is reasonable price, product quality, service quality, security and customers satisfaction in word of mouth.

In addition, the results that have been studied show that students at Universiti Malaysia Kelantan are tech-savyy. With tech-savvy, they are easy and good at using certain platforms to shop online. Furthermore, they are easily influenced by social media and word of mouth about satisfaction in online shopping.

Finally, the outcome from this study can benefit all parties involved such as Shopee, Lazada and others to maintain customer satisfaction and improve customer satisfaction in using their services.

7   Acknowledgement

First and foremost, praises and thanks to the God, the Almighty, for His shower of blessings throughout our research work to complete this research. Next, we would like to congratulate and thank ourselves and our team members for giving their full commitment to this study. We worked hard and supported each other to complete this research perfectly. We feel so proud of ourselves because we gained lots of knowledge throughout this research journey and we improved our silly mistakes that were made earlier of this research. Finally, our completion of this project could not have been accomplished without support of our parents, family, and friends. They are the most supportive that we ever had. Thanks to them because always understand and gave us time to complete this study.

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The Impact of Price, Time, Trust, and Convenience on Customer Purchase Behaviour on Shopee Platform in East Coast Malaysia

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Abstract:

Shopee is one of the leading e-commerce platforms in Malaysia and the largest e-commerce in Southeast Asia in 2020. Despite fierce competition in the e-commerce space, Shopee has grown aggressively across the Southeast Asia region over the past few years. The successful expansion of his business may be due to its deep competitive advantage. This study was to examine the main factors that impact customer attitudes around the east coast states of Malaysia namely Kelantan, Terengganu and Pahang towards the use of Shopee. The four factors that have an impact are price, time, trust and convenience. Survey questionnaires are used for data collection. A total of 385 Shopee users from the east coast residents of Malaysia namely Kelantan, Terengganu and Pahang responded to the survey. The results of the study have revealed that price, time, trust and convenience have had a positive impact on influencing customer attitudes towards Shopee users in Malaysia. This study provides Shopee with valuable insights and guidance on customers' perceptions of Shopee, leading to better customer satisfaction.

Keywords*: Shopee, price, time, trust, convenience, customer attitude and e-trading*

1 Introduction

Shopee is a digital marketplace created by Singaporeans that operates under the umbrella of the technology company Garena. Shopee facilitates fast, simple, and secure online transactions between buyers and sellers around the globe (Fadhillah et al., 2021). As a result of the convenience and reach of the internet, small and medium-sized enterprises have a greater opportunity to succeed. Shopee website and application are meant to streamline the online buying experience for their users. Moreover, the specialized marketer sees a dramatic uptick in the total number of clients who fall into their ideal demographic. Business transactions may be handled anytime, anywhere, and with little outlay of time and resources thanks to the advent of e-commerce.

Shopee dominated the Southeast Asian e-commerce market in 2020 in terms of both gross merchandise value and total orders (Daisy et al. 2021). In spite of stiff competition, Shopee is the second highest of the top 50 e-commerce players in Malaysia

based on the average quarterly traffic, social media followers, mobile application rankings and the number of employees opposed by other online retailers (The Sun Daily, 2018). Shopee has grown rapidly over the past few years over the entirety of Southeast Asia. At the same time, Shopee dominated the e-commerce market in the ASEAN country in terms of Gross Merchandise Value (GMV) and orders placed by 2020. Its substantial competitive advantages have undoubtedly contributed to the company's rapid growth.

In Malaysia, customers frequently buy products from internet retailers like Shopee. In 2015, Shopee was introduced in Malaysia with 501–1000 employees (Nee, 2017). Presently, Shopee ranks high among Malaysia's most popular online marketplaces (Similarweb, 2021). Shopee offers a wide range of services, including safe payment options, chat with sellers, logistical and customer assistance, and shopping. This online shopping platform also enables customers to purchase anytime, anywhere, with a large selection of reputable marketplace vendors and mall vendors who offer the greatest prices and significant savings (Shopee, 2019). Reported that the monthly visit rate was 12,330,200 users, placing it second only to Lazada and outperforming other rivals like 11th Street, Lelong, Zalora, eBay, and others (iPrice, 2018). Shopee has struggled to compete with Lazada in all areas, including the number of monthly visitors and the business models employed to achieve operational excellence (Lim, 2017). Hence, to better understand what influences customers' decisions to use these online shopping platforms, it is crucial to research Shopee's customer behaviour.

2   Significance of the Study

2.1   Shopee Platform

Shopee platform can get more benefits in this research for developing more effective marketing strategies to maintain and increase their business, especially from online customers in East Coast Malaysia. Shopee online has become increasingly popular among customers for purchasing purposes due to the benefits and enjoyment that come with it.

2.2   Online Customers

This study conducted to know the impact of price, time, trust, and convenience on customer purchase behaviour on Shopee platform in East Coast Malaysia. The study is very important for online customers because they can make purchases in less time. Online customers can save money in the form of a lower shipping fee.

2.3   Future Researcher

This study will provide more information about the impact of price, time, trust, and convenience on customer purchase behaviour on Shopee platform in East Coast Malaysia. So, the future researcher can get more information about the impact on customer purchase behaviour on Shopee platform in East Coast Malaysia for improving the respondent research in the future.

3   Literature Review

3.1   Customer Behaviour

According to Rafsandjani (2018), customer behavior is the study of how people, groups, and organizations choose, purchase, use, evaluate, and discard goods and services that might satisfy their needs and wants and turn them into devoted customers. It is a process where customers pick and decide whether to purchase, utilize, or discard goods and services to satisfy their needs and wants (Kim, 2004).

3.2   Price

According to Kotler and Armstrong (2018) price is the amount of value that customers give up in exchange for the advantages of a good or service. It has long been a critical determining factor in buyer decision making.

3.3   Time

According to Duarte et al. (2018) for customers who wish to purchase more quickly and efficiently, the internet is perfect. Online purchasing is more likely to be preferred by customers that value convenience and time. Mobile applications are becoming more prevalent thanks to advancements in e-commerce sites, enabling customers to save time and effort.

3.4   Trust

According to Aziz and Wahid (2018) trust minimizes perceived risk when shopping online, resulting in an increase in ecommerce sales.

3.5   Convenience

Delafrooz et al. (2009) state that three factors that are time spent, shopping location, and purchasing process are used to evaluate comfort. It can effectively persuade customers to make online purchases. It might be said that convenience is the primary driver or element encouraging customers to shop online instead of in real stores.

4   Research Hypothesis

Three hypotheses are developed in this study which are as following: -

H_1: There is a significant relationship between price and customer purchase behaviour on Shopee platform in East Coast Malaysia.

H_2: There is a significant relationship between time and customer purchase behaviour on Shopee platform in East Coast Malaysia.

H_3: There is a significant relationship between trust and customer purchase behaviour on Shopee platform in East Coast Malaysia.

H_4: There is a significant relationship between convenience and customer purchase behaviour on Shopee platform in East Coast Malaysia.

5 Conceptual Framework

Figure 1 shows the conceptual framework of this study. It consists of price, time, trust and convenience on customer purchase behaviour on Shopee platform on East Cost Malaysia.
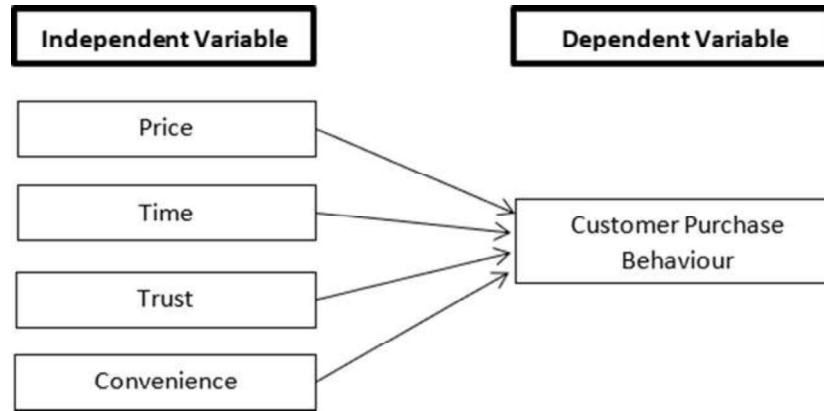

Figure 1: Conceptual Framework

6 Research Methodology

6.1 Research Design

This study will use descriptive research analysis to further explore the customer purchase behaviour on Shopee platform in East Coast Malaysia. The descriptive research describes the current situation or the characteristics of the population or phenomenon that is being studied. This study used quantitative method where construct a survey questionnaire to collect data and cross-sectional study design to test the hypotheses and respond to research questions in a more systematic way.

6.2 Measurement Development

This research developed an online questionnaire to collect data. Measurement scales of the research model constructs were adopted from previous studies. This study used 6-point Likert scales, moving from "strongly disagree "to "strongly agree" to measure the items. The questionnaire was having two versions which are English and Bahasa Malaysia.

6.3 Sample Size

In order to achieve the reliable and valid sample, Krejcie & Morgen (1970) used to determine the sample. A sample size of 384 is sufficient for the study.

6.4 Data Collection

For this study, primary data will be used, and data collected through an online survey which is an online questionnaire. Online survey via google forms was selected as the instrument for this study due to easy data collection and handling. Questionnaires will be distributed to share the survey on social media such as WhatsApp, Facebook, twitter

and Instagram randomly to respondents around the main cities in the East coast of Malaysia namely Kuala Terengganu, Kota Bharu and Kuantan.

6.5 Data Analysis

This study applied Statistical Package for the Social Sciences (SPSS) 27.0 to analyse data. There were data types of data analysis used which are descriptive analysis, reliability analysis, Pearson Correlation analysis and multiple regression analysis.

7 Result and Analysis

7.1 Background of the Respondent

The table 1 showed that sample characteristics of 385 respondents from the residents of East Coast Malaysia which is Kota Bharu, Kuala Terengganu and Kuantan. Every consequence of the demographic and screening questions are showing by frequency and percentage.

Table 1: Profile of Respondent

Demographic Variable	Categories	Frequency	Percentage
1. Gender	Male	102	26.5%
	Female	283	73.5%
2. Age	< 20 years old	30	7.8%
	21-30 years old	231	60.0%
	31-40 years old	118	30.6%
	41-50 years old	5	1.3%
	More than 50 years old	1	0.3%
3. Race	Malay	163	42.3%
	Chinese	110	28.6%
	Indian	109	28.3%
	Other	3	0.8%
4. Occupation	Student	109	28.3%
	Self Employed	73	19.0%
	Unemployed	11	2.9%
	Government Sector	64	16.6%
	Private Sector	128	33.2%
5. Monthly Income Level	RM0-RM999	114	29.6%
	RM1,000-RM1,999	31	8.1%
	RM2,000-RM2,499	74	19.2%
	RM2,500-RM2,999	55	14.3%
	RM3,000 and above	111	28.8%
6. Place of Residence	Kota Bharu, Kelantan	110	28.6%
	Kuantan, Pahang	146	37.9%
	Kuala Terengganu, Terengganu	129	33.5%
7. Do you ever use Shopee app?	Yes	375	97.4%
	No	10	2.6%
8. How often do you buy online using Shopee platform?	Daily	56	14.5%
	Weekly	135	35.1%
	Monthly	178	46.2%
	Yearly	12	3.2%
	Never	4	1.0%

7.2   Pearson Correlation

In accordance with the study objectives, Pearson Correlation coefficient has been used to investigate the relationship between price, time, trust and convenience on customer purchase behaviour. Based on the table 2, there is a strong relationship between four impacts (price, time, trust and convenience) toward customer purchase behaviour on Shopee platform in East Coast Malaysia. All impacts are significant and positively influences customer behaviour as it supported by significant level four impact is lower than 0.01 which p-value is at 0.000 as well as the correlation value is at 0.894 (price), 0.754 (time), 0.838 (trust), and 0.896 (convenience) respectively where express that the relationship between impact of price, time, trust and convenience and customer purchase behaviour on Shopee platform in East Coast Malaysia is positive.

Table 2: Pearson Correlation Analysis

Customer Purchase Behavior			Price	Time	Trust	Convenience
Customer Purchase Behaviour	Pearson Correlation	1	.894**	.896**	.754**	.838**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	385	385	385	385	385
Price	Pearson Correlation	.894**	1	.870**	.779**	.816**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	385	385	385	385	385
Time	Pearson Correlation	.754**	.779**	.760**	1	.847**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	385	385	385	385	385
Trust	Pearson Correlation	.838**	.816**	.828**	.847**	1
	Sig. (2- tailed)	.000	.000	.000	.000	
	N	385	385	385	385	385
Convenience	Pearson Correlation	.896**	.870**	1	.760**	.828**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	385	385	385	385	385

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

7.3   Reliability Analysis

Cronbach's Alpha was employed in this study to see if the data was reliable, or if it fit the standard internal consistency measurement. Internal consistency reliability is a test that determines if the replies of respondents are consistent throughout all parts (Sekaran & Bougie, 2016). The reliability coefficients for the variables in the study shown in table 3. Hence, further analysis is able to be executed as all the variables were reliable.

Table 3: Cronbach's Alpha Reliability Test Result

Dimensions	Cronbach's Alpha	No of Items	Result
Customer Purchase Behavior on Shopeeplatform in East Coast Malaysia	.949	5	Excellent
Price	.937	5	Excellent
Time	.886	5	Good
Trust	.849	5	Good
Convenience	.958	5	Excellent

7.4 Hypothesis Testing

The hypothesis on significant relationship between price, time, trust and convenience with customer purchase behaviour on Shopee platform in East Coast Malaysia were tested by using Pearson correlation analysis. All hypotheses were accepted at 0.01 significant levels.

Table 4: Hypothesis Testing

Hypothesis	Pearson's correlation result	
H1: There is a significant relationship between price and customer purchase behaviour in East Coast Malaysia.	$r = 0.894$, $p < 0.01$ *(positive correlation)	Accepted
H2: There is a significant relationship between time and customer purchase behaviour in East Coast Malaysia.	$r = 0.754$, $p < 0.01$ *(positive correlation)	Accepted
H3: There is a significant relationship between trust and customer purchase behaviour in East Coast Malaysia.	$r = 0.838$, $p < 0.01$ *(positive correlation)	Accepted
H4: There is a significant relationship between convenience and customer purchase behaviour in East Coast Malaysia.	$r = 0.896$, $p < 0.01$ *(positive correlation)	Accepted

7.5 Multiple Linear Regression Analysis

Multiple linear regression was used in this study to predict the outcome of customer purchase behavior on Shopee platform in East Coast Malaysia based on the independent variables which are price, time, trust and convenience. Furthermore, this analysis in table 5 helps to find out the strongest impact price, time, trust and convenience on customer purchase behavior on Shopee platform in East Coast Malaysia. Based on the table, the value of R Square is 0.867, the extend of the influences by impact of price, time, trust and convenience as independent variable toward customer purchase behaviour on Shopee platform in East Coast Malaysia of dependent variable is illustrated through multiple regression analysis. Hence, the model is acceptable.

Table 5: R Square for mutual determination

	R	R Square	Adjusted RSquare	Std. Error of theEstimate
1	.931^a	.867	.865	.34720

a. Predictors: (Constant), Convenience, Time, Price, Trust

According to the result of multiple regression analysis listed in the table 6, for the first objective, the relationship between price and customer purchase behaviour is found significant at $\beta = 0.412$. In accordance to the second objective, the relationship between trust and customer purchase behaviour is found significant at $\beta = 0.216$. The third objective, the relationship between convenience and customer purchase behaviour also found significant at $\beta = 0.399$. Therefore, there are only three out of four objectives are satisfied.

Table 6: Standard Multiple Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	.436	.097		4.502	.000
	Price	.420	.042	.412	9.920	.000
	Time	-.049	.034	-.053	-1.440	.151
	Trust	.215	.042	.216	5.114	.000
	Convenience	.354	.037	.399	9.538	.000

8 Conclusion and Recommendation

The findings of this study consistently point to the beneficial impact that time, trust, convenience, and price have on shoppers' decisions to make purchases on the Shopee platform. In general, the respondents have a good grasp of the logistics field. In future studies, the researcher might increase the number of respondents and/or look at more factors that are not related to the study. With the surveys being sent out to just residents of East Coast Malaysia, if researchers wanted to do their study the same way all over Malaysia, they might include people from other states or even countries in their pool of possible participants. This will ensure that the study is representative of a larger population.

9 Acknowledgment

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Impact of E-Service Quality on Customer Satisfaction towards Shopee among Generation Y in the Post-COVID-19 Pandemic

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Abstract:
The impact of e-service quality on customer satisfaction towards Shopee among generation Y in the post-COVID-19 pandemic will be the focus of this study. In this research, researchers looked into the connections between privacy, efficiency, fulfilment and website design with customer satisfaction. This study also has chosen generation Y as respondents to complement this study. In collecting respondent data, an online questionnaire form has been used because it is easy to connect, obtain and analyze data from all over Malaysia. Non-probability sampling has been applied in this study because the populations are unknown. In order to accomplish the objective of this study, a quantitative method will be used. Reliability, descriptive and correlation analysis have been used in this study. The result of the analysis confirmed that only two independent variables have a relationship with the dependent variable. It showed a positive and significant correlation exists between privacy and fulfilment with customer satisfaction. Besides, this study has identified some limitations of this research. As a result, recommendations have been made for additional investigation. Future researchers can therefore identify the strategies to enhance this problem for future study.

Keywords*: Privacy, Efficiency, Fulfilment, Website design, Customer Satisfaction*

1 Introduction

Background of Study The internet has developed as a powerful business platform. E-commerce is a 2.29 trillion-dollar sector that is predicted to grow to $4 trillion by 2020 (eMarketer, 2016). Even developing Asian nations with weak infrastructure and low internet penetration rates are exploring online shopping. Customers are becoming more interactive, and through internet feedback, they can affect the decisions of other possible purchases. As online shopping continues to gain popularity, there have been more reports of online shopping scams.

E-commerce is a new platform for scammers to do their online commercial activity (Talib & Rusly, 2015). Customers have to be aware of online crime that exists in this era. If they are not aware, it will give a loss to the customer, thus will defame the company. Great customer satisfaction levels necessitate high service quality, which

typically leads in favourable behavioural intentions (Brady & Robertson, 2001). Companies must specify and communicate whether those ratings will be expressed as stars, numbers, smiley faces, or something else. Product recommendations to groups of five to six people are more likely to be made by customers who are pleased with their purchases.

When Movement Control Order (MCO) was enforced in Malaysia, the citizens could not leave the house. However, only the head of the family is permitted to go out to buy necessities. This results in most businesses having slowed down or closed their operation during the Covid-19 pandemic (Nurfarhana et al., 2022) because they could not make a profit during that period. Some companies are forced to close their businesses due to not being able to bear the cost of the losses experienced. Therefore, most business operators have tried to utilise online shopping platforms to prevent losses (Nurfarhana et al., 2022).

However, even though various platforms have been introduced over time, Shopee has become a platform that is growing rapidly in Malaysia compared to other platforms. Although the pandemic is now over but online shopping has become a part of everyone's life. Generation Y or the millennial generation is more oriented toward technology in their daily lives. Therefore, the study examines and focuses on the relationship between privacy, efficiency, fulfilment and website design with customer satisfaction towards Shopee among generation Y in the post-Covid-19 pandemic.

2 Literature Review

2.1 Customer Satisfaction

Customer satisfaction is a measurement that shows whether an efficient business's products or services fulfil the expectations of its customers. Customer satisfaction adds value to the customer by monitoring their expectations and meeting their needs (Guzzo, 2010). It is one of the most important indicators for future purchases and client loyalty. As a result, it supports forecasting business growth and revenue. Service quality is the factor that relates to client satisfaction and loyalty (Willot, 2020). Every strong business strives to improve customer satisfaction. This research aims at how customer satisfaction is impacted by privacy, efficiency, fulfilment and website design.

2.2 Privacy

In the context of information privacy, privacy can be known as an individual's outlooks of justice (Benard & Makienko, 2011). Customer will usually feel hesitant to use an online purchase application because it involves their personal data such as telephone number, home address, bank account number including credit card information and so on (Holloway & Beatty, 2008). According to Zandi et al. (2021), online privacy is more challenging to protect than offline privacy. Internet privacy confidence appears to have the strongest impact on customer satisfaction. Based on the study by Raman and Annamalai (2011), the positive relationship between privacy and customer satisfaction can be proof that customers feel safe and confident to make purchases via online shops because their privacy data information is safe and not misuse by irresponsible party. Hence, the study suggests the following hypothesis:

H1: Privacy has positive relationship with customer satisfaction towards Shopee among generation Y in the post-Covid-19 pandemic.

2.3 Efficiency

Efficiency is a large part of online shopping (Frick & Matthies, 2020). In Frick and Matthies's research, they found that online shopping makes consumers' shopping behaviour cost lower than physical store shopping. Efficiency also refers to how quickly and easily one may access and use a website. This aspect is crucial to motivating the user to utilise the electronic platform conveniently, frequently, and effectively (Firdous & Farooqi, 2019). According to Duarte et al. (2018), there is a close association between online efficiency and customer pleasure in terms of satisfaction (Duarte et al., 2018). This evaluation is critical since customer satisfaction is a key to sustaining and developing a competitive advantage. Furthermore, service attributes, consumer variations, and firm-related factors all have an impact on how customers perceive how convenient a service is. In view of that, the following hypothesis is suggested:

H2: Efficiency has positive relationship with customer satisfaction towards Shopee among generation Y in the post-Covid-19 pandemic.

2.4 Fulfilment

Fulfilment refers to activities that ensure customers receive what they ordered, including order correctness, delivery timing, and condition (Blut, 2016). Customer happiness is one of the most crucial signs of success in the business-to-consumer online ecosystem (Shin et al., 2013). Happy online shoppers are more likely to make other purchases and refer others to online merchants (Pereira et al., 2017). So, dissatisfied consumers will leave their online retailers whether they have any complaints or not. Therefore, the fulfilment offered by the company is intimately tied to customer attitudes and intents, which are elements of customer behaviour that directly, affect the consumer's behavioural intentions (Holloway et al., 2005). Previous studies have shown a significant relationship between the calibre of e-services and user happiness through a very significant and diverse fulfilment that is able to attract the interest of generation Y to buy on the Shopee platform, (Kitapci et al., 2014). Taking head of this study, the third hypothesis is stated as follows:

H3: Fulfilment has positive relationship with customer satisfaction towards Shopee among generation Y in the post-Covid-19 pandemic.

2.5 Website Design

Information quality, website aesthetics, purchase procedure, website convenience, product selection, price offerings, website personalization, and system availability are all considered to be components of website design (P. Rita et al., 2019). According to research, websites provide useful information and boost client happiness (Tzeng et al., 2020). As a result, it would be reasonable to believe that providing clients with a clear, accessible, and user-friendly design as well as ample and trustworthy information would lessen their apprehension and hesitancy while using an online service. According to the study by Rita et al. (2019), there is a positive link exists between website design and overall customer satisfaction. A past study by Wang et al. (2019) also explained that

website design has a significant impact on customer satisfaction. Thus, the fourth hypothesis is proposed:

H4: Website design has positive relationship with customer satisfaction towards Shopee among generation Y in the post-Covid-19 pandemic

2.6 Conceptual Framework

The conceptual framework for privacy, efficiency, fulfilment, website design and customer satisfaction towards Shopee is as shown in Figure 1.
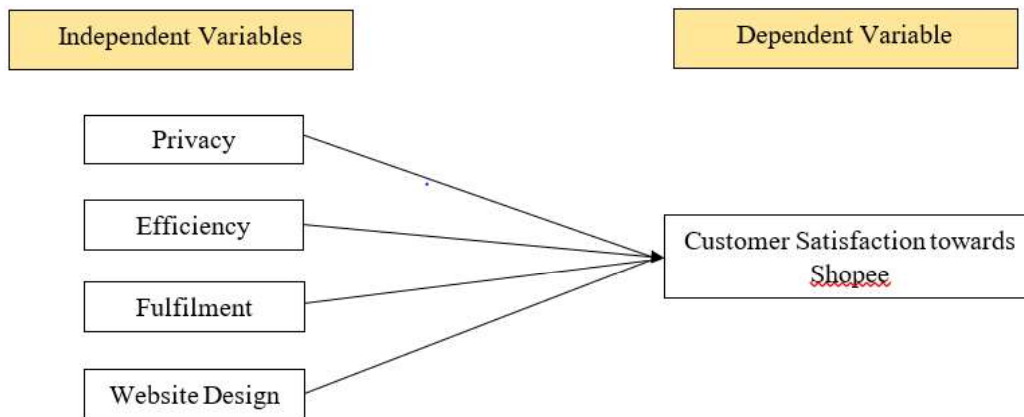

Figure 1: Conceptual Framework

3 Methodology of Study

3.1 Research Approach and Study Design

The quantitative analysis method was selected because the qualitative research method is applied for sample size. The method assists researchers in determining the relationship between the selected independent variables (privacy, efficiency, fulfilment and website design) and the dependent variable (customer satisfaction). The method was chosen based on the study's objectives to do a numerical analysis of the results.

3.2 Population and Sample Size

The purpose of this study is to examine the relationship between customer satisfaction and independent variables such as privacy, efficiency, fulfilment, and website design among generation Y Shopee users in the post-Covid-19 pandemic. As a sample strategy, probability sampling was selected for the analysis. The study by Shukla stated that depending on the goal of their research, researchers can choose from a variety of sampling techniques. According to Hair et al. (2010), the sample size was at least five times of items to be analyzed if researchers cannot find the number of populations. This research, it requires 115 completed questionnaires (5× 23 items to be analyzed). Nevertheless, 150 will be distributed to the respondents of Gen Y who had used Shopee in Malaysia.

3.3   Research Instrument

The study employed a questionnaire with 23 closed-ended questions and three sections: Section A contains demographic profile information, Section B has four independent variables that influence customer satisfaction, and Section C contains the dependent variable. According to Betram (2007), a five-point Likert scale is measured with 1 = Strongly Disagree and 5 = Strongly Agree. Therefore, the questionnaire used the Likert scale, 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. The final questionnaire consisted of 23 closed-ended questions, including demographics questions, with 5 of the questions providing for a range of replies on a five-point Likert scale: strongly agree, neutral, agree, disagree, and strongly disagree. The questions included every significant impact on customer satisfaction among Shopee users of generation Y in the post-Covid-19 pandemic.

3.4   Procedure for Data Collection and Analysis

Using descriptive analysis, the demographic data of the research were analysed. Researchers can use descriptive analysis to make raw data easier to understand and interpret by reorganising, organising, and modifying the data to produce descriptive data (Zikmund, 2003).

In the meantime, the frequency distribution is transformed and displayed as a pie chart and histogram (Saunders et al., 2009). As a result, a pie chart was used to illustrate the percentage and frequency of respondents from the study's demographic data summary. According to Saunders et al. (2009), Spearman Correlation Analysis is valid for measuring the linear strength of the association between independent and dependent variables. In addition, the Spearman correlation coefficient was used to analyse the link between the respective variables. The closer the alpha coefficient value is to +1 or -1, the more relevant the independent variables are in relation to the dependent variable, and positively associated if the value is positive, and negatively related if the value is negative.

4   Finding and Discussion

4.1   Demographic profile of respondents

As shown in Table 1, among the 150 respondents, most were female respondents (68.0%), while the male respondents were 32.0%. The Malays dominated the data collection, with 64.0%. The majority of the respondents were from the student's group (65.3%) and had an income range of less than RM 2000 and 46.0% using shoppe 2-4 times per month. Lastly, 56.0% of respondents spend on Shopee per month less than RM 200.

Table 1: Demographic profile of respondents

Demographic profile	Group	Frequency (N)	Percent (%)
Gender	Male	48	32.0
	Female	102	68.0
Race	Malay	96	64.0
	Chinese	32	21.3
	India	13	8.7
	Others	9	6.0
Occupation	Student	98	65.3
	Government	12	73.3
	Private	20	86.7
	Self-Employed	12	94.7
	Others	8	100.0
Monthly Income	Less than RM 2000	107	71.3
	RM 2001 - RM 4000	20	13.3
	RM 4001 - RM 6000	12	8.0
	More than RM 6001	11	7.3
Times using Shopee per month	Once a month	43	28.7
	2 - 4 times	69	46.0
	5 - 8 times	21	14.0
	More than 8 times	17	11.3
Amounts spend on Shopee per month	Less than RM 200	84	56.0
	RM 201 - RM 400	36	24.0
	RM 401 - RM 600	14	9.3
	RM 601 - RM 800	7	4.7
	More than RM 800	9	6.0

4.2 Reliability Analysis

The reliability of the questionnaires was analyzed using reliability analysis. Before being delivered to 150 respondents via the online survey method, the pilot test was conducted with 30 respondents.

Table 2: Result of Reliability Coefficient Alpha for the Independent Variables and Dependent Variable

Variable	Number of item	Cronbach's Alpha	Strength of Association
Privacy	5	0.945	Excellent
Efficiency	5	0.933	Excellent
Fulfilment	5	0.941	Excellent
Website Design	4	0.949	Excellent
Customer satisfaction	4	0.876	Very Good

4.3 Pearson Correlation Analysis

Pearson's correlation coefficient was used to examine the statistical relationship between independent variables and Customer Satisfaction towards Shopee among Generation Y in the post-Covid-19 pandemic. Based on Table 3, the correlation between variables is shown.

Table 3: Pearson Correlation Analysis

		Customer Satisfaction	Privacy	Efficiency	Fulfilment	Website Design
Customer Satisfaction	Pearson Correlation	1	0.848[**]	0.768[**]	0.812[**]	0.781[**]
	Sig. (2-tailed)		0.000	0.000	.000	0.000
	N	150	150	150	150	150
Privacy	Pearson Correlation	0.848[**]	1	**0.798[**]**	**0.831[**]**	**0.799[**]**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000
	N	150	150	150	150	150
Efficiency	Pearson Correlation	0.768[**]	**0.798[**]**	1	**0.831[**]**	**0.801[**]**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000
	N	150	150	150	150	150
Fulfilment	Pearson Correlation	0.812[**]	**0.831[**]**	**0.831[**]**	1	**0.865[**]**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000
	N	150	150	150	150	150
Website Design	Pearson Correlation	0.781[**]	**0.799[**]**	**0.801[**]**	**0.865[**]**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	150	150	150	150	150

5   Discussions

This study aimed to examine the relationship between logistic services quality and customers' satisfaction and determinants of Customer Satisfaction towards Shopee among Generation Y in the post-Covid-19 pandemic. The findings discovered that all four logistic service quality dimensions have a significant relationship with customer satisfaction. The finding also proved that all these four logistic services quality dimensions were the determinants of customer satisfaction towards Shopee among Generation Y in the post-Covid-19 pandemic. It can be summarized here that all variables have met the minimum value requirements for the acceptance of reliability analysis as the value should be more than 0.6 or pass the poor stage of the strength of association.

6   Conclusions

The convenience offered by online shopping has replaced many traditional shops. Online shopping has become a trend nowadays. This study objective is to determine the relationship between privacy, efficiency, fulfilment, website design and customer satisfaction towards Shopee among generation Y in the post-Covid-19 pandemic. Based on the findings, it can be concluded that privacy and fulfilment have influenced customer satisfaction towards Shopee among generation Y in the post-Covid-19 pandemic. This study helps to a better understanding of the critical aspects of online shopping that influence customer satisfaction

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Factors Influencing Customer Satisfaction and Brand Loyalty toward Shopee Application among University Students in Kota Bharu

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Abstract:

Nowadays, smartphones have been successful in influencing people's behaviour in a variety of ways, especially in shopping styles. Shopee was the online shopping platform that received the most electronic commerce site in Malaysia. This study focuses on customer satisfaction and brand loyalty toward Shopee application among university student in Kota Bharu. This study examines the relationship between, accuracy of delivery order, price of delivery, information quality, ease of payment and security of payment toward Shopee apps. A quantitative study was conducted to complete this research. The sampling of this study is 370 respondents among the student's university in Kota Bharu. Descriptive analysis, reliability test and Spearmen correlation were used to analyse the data. The relationship between customer satisfaction and brand loyalty with Shopee apps is influence accuracy of delivery order, price of delivery, information quality, ease of payment and security of payment. The result supports all variables. In conclusion, the accuracy of delivery order, price of delivery, information quality, ease of payment and security of payment greatly affects the level of customer satisfaction and brand loyalty with the highest value.

Keywords*: Satisfaction and brand loyalty, accuracy of delivery, ease of payment, Shopee Application, prices of delivery, information quality, security of payment and delivery services*

1 Introduction

Smartphones have been successful in influencing people's behaviour in a variety of ways, including in the economic, lifestyle, social and shopping style. As a result of this behaviour, numerous application development firms are currently producing e-commerce-based applications for smartphones devices that are being made available to users all over the world (Pandiangan et al., 2022). The rapid growth of online spending has pushed logistic service provider (LSP) be such an essential element in facilitating the movement of goods which also increased consumer demand for specialized delivery services. Due to increase of using the couriers, online shoppers have high standards for delivery of their packages (Siali, 2018). Customer satisfaction is important which help to measure the significant impact on long term performance purchasing behavior by

customer. Shopee will attract customer with lower prices, free shipping, and next day delivery of good products.

The objective of the study is to investigate the determinants factors (accuracy of delivery order, price of delivery, information quality, ease of payment and security of payment) influencing satisfaction and brand loyalty toward Shopee Application among university students in Kota Bharu. This research will help us gain a more comprehensive understanding of the factors that can influence students' towards Shopee Application in Kota Bharu. This research will allow us, as students of the Faculty of Entrepreneurship and Business, to obtain more information and knowledge that we can share with the community about the importance of Shopee Application.

2   Literature Review

2.1   Customer Satisfaction and Brand Loyalty

The first terms are customers' satisfaction. Cambridge dictionary said the meaning of customers' satisfaction in English is a measure of how happy customers feel when they do business with a company. It also means in business or film, this can occur for example in term of product quality, product cost and customers satisfaction. Customer's satisfaction is a measure and level of expectation between customers and company or the product (Bayad Jamal Ali, etc., 2021). Brand loyalty was defined as the quality of being loyal for the brand. It can be described about your felling of support or duty towards someone or something by Cambridge dictionary. Brand loyalty is the degree to which a customer's remain loyal to the brand and a customer in term of attitude and behaviour even when there are alternatives from other suppliers (Liss Jenneboer, etc. 2022). They also write that returning customers or loyal customers help to ensures a higher average customer value that importance of customers loyalty.

2.2   Accuracy of delivery order

While accuracy is the fact of being exact or correct. Accuracy of delivery can is how correct the status of the parcel. For example, is 'your order is out for delivery' mean it has been given to the person who will deliver the item and will be with you soon. The accuracy of delivery is a fundamental and integral objective of online customers (Zaiullah, Yi and Akher, 2014).

H1: There is a relationship between accuracy of delivery order with customer satisfaction and brand loyalty.

2.3   Price of delivery

Price mean the amount of money for which something is sold, and delivery is the act of taking goods, letters, parcel, etc. such as to people's houses or places of work. This also can describe as a price for which seller agrees to deliver merchandise to purchaser at place. Low price product is the best for customers. Price is one factor that can affect a person for the purchase decision states that the price significantly influences the purchase decisions (Rizky, Hidayat, & Devita, 2019)

H2: There is a relationship between price of delivery with customer satisfaction and brand loyalty.

2.4   Information quality

Information quality is the fact about a situation, person, event, etc. and how good or bad something is said Cambridge dictionary. Plus, it also can be described as the level of the situation. Nando (2020) said information quality of Shopee Apps is about customers to know the current situation of their purchase by the application or online.

H3: There is a relationship between information quality with customer satisfaction and brand loyalty.

2.5   Ease of payment

Cambridge dictionary on their website state that ease means to make or become less severe, difficult, unpleasant, painful, etc. and payment is an amount to paid. Example, to ease the way of payment for their customers, Shopee comes out with the latest technology of QR code. the payment method on purchasing for the user is a customer friendly (LY et. al., 2022)

H4: There is a relationship between ease of payment with customer satisfaction and brand loyalty

2.6   Security of payment

Security of payment is a protection of the amount of paid to against threats such as crime or scam state Cambridge dictionary. Ali (2021) said year by year the number of scam and loss of money because of a weak security from apps and website make customers' loss their money but strong security bring trust from customers.

H4: There is a relationship between security of payment with customer satisfaction and brand loyalty.

2.7   Framework

Figure 1: The Research Framework

3   Methodology

The research design that the researchers decide to use for the study such as quantitative or qualitative. These two methods are different, but some researchers apply both methods in their study. This design enables the researcher to fine-tune research methodologies that suited for the study. The design that researcher used for this study is a quantitative method. Quantitative method is used to identify demands that highlight objective phenomena, and it is regulated through data gathering analysis. This method belongs to the e-questionnaires that created in Google Form as a required data. Questionnaires will be distributed to respondents especially a student in Kota Bharu through the social applications. According to the most recent data from Academic Administration Department, there are three public Universities in Kota Bharu which is consist of University Malaysia Kelantan Pengkalan Chepa (UMK PC), University Sains Malaysia Kubang Kerian (USM KK) and University Teknologi MARA (UiTM KB). There are 6,237 students in UMK PC, 1,079 students in UiTM KB and 2,217 students for USM KK. Therefore, the total number of students at public university in Kota Bharu is 9,533 so the target population will consist of 9,533 students. As mentioned above, the researchers stated that are 9,533 students at public university in Kota Bharu based on most recent data. The researchers used G*Power version 3.1.9.7 to perform the power analysis to identify the minimum sample size which is deemed more suitable for determining minimum sample size (Zaato, et al., 2022). Therefore, the researchers identified the required minimum sample size as 92 respondents for the data collection. The researchers chose 370 target respondents to collect data to maximize the result. However, according to the Sekaran, & Bougie, (2016) cited from Krejcie & Morgan (1970), the authors recommended the sample size for students at public university in Kota Bharu which have a population of 9,533 should be 370 respondents.
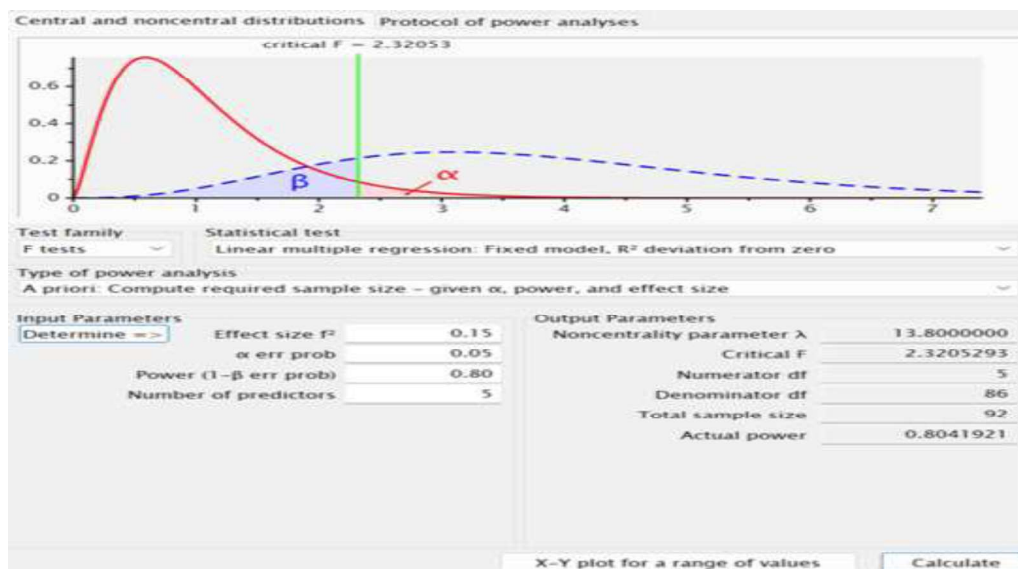

Figure 2: G*Power Calculation

In this study, researcher use different measurement scale. In section B, with the dependent variable, this is customer satisfaction and brand loyalty (dependent variable) of respondents and is divided into five questions to use the 7-point scale. In section B,

respondents were asked to circle their level of agreement on a 7-point Likert scale ranging from 1 to 7 on the dependent variable, with 1 being "completely dissatisfied" and 7 being "completely satisfied" in Section B. While the questionnaire in Section C deals independent variable of accuracy of delivery order, price of delivery, information quality, ease of payment and security of payment divided into five questions to use the 5-point scale. Section C, respondents were asked to circle their level of agreement on a 5-point Likert scale, with 1 representing "strongly disagree" and 5 representing "strongly agree" in Section C for all the independent variables.

4   Results

In this study, SPSS Statistical version 26 was used for data analysis to produce results. This study uses descriptive analysis of the respondent's profile and correlation analysis to determine the significance level of the relationship between the independent and dependent variables. We collected and analysed data from a total of 370 respondents.

4.1   Pilot Test

For the pilot test, forty (40) sets of questionnaires were sent to the targeted respondents. After data collection, the information will be put into the software Statistical Package for the Social Sciences (SPSS) and validated for correctness. Lastly, if any problems are discovered, the questionnaire survey will be revised and issued for the main study based on the results of the pilot test.

Table 1: Scale of Cronbach Alpha

Cronbach Alpha	Internal Consistency
A ≥ 0.9	Excellent
0.9 > A ≥ 0.8	Good
0.8 > A ≥ 0.7	Acceptable
0.7 > A ≥ 0.6	Questionable
0.6 > A ≥ 0.5	Poor
0.5 > A	Unacceptable

Table 2: Result Cronbach Alpha Pilot Test

Variables	Construct	Cronbach's Alpha	N of Items	Result
DV	Customer Satisfaction and Brand Loyalty	0.948	5	Excellent
IV 1	Accuracy of Delivery Order	0.954	5	Excellent
IV 2	Price of Delivery	0.939	5	Excellent
IV 3	Information Quality	0.955	5	Excellent
IV 4	Ease of Payment	0.960	5	Excellent
IV 5	Security of Payment	0.948	5	Excellent

Table 2 showed the reliability of pilot test analysis for independent variable and dependent variables from 40 questionnaires. Accuracy of delivery order, price of delivery, information quality, ease of payment and security of payment were the independent variable in this study. The results of Cronbach's alpha showed coefficient value of 0.954, 0.939, 0.955, 0.960 and 0.948 respectively were acceptable. The customer satisfaction and brand loyalty shown in table above was the dependent

variable in the study and its Cronbach's alpha coefficient value showed 0.948 which acceptable and reliable. Since the Cronbach's alpha charge for the variables has exceeded 0.7, it showed that the questionnaires were highly reliable and can proceed with the study. Furthermore, this means the questionnaires has been accepted for this study and the reliability has proven that the respondent understood the questions provide.

4.2 Demographic Profile of Respondent

Table 3: Gender

Classification	Frequency N = 370	Percentage (%)
Male	120	32.4
Female	250	67.6

The contextual profile of 370 respondents has been collected in this research. The table 3 is about gender. There were 32.4% from male respondents with 120 students and over 67.6% of them were 250 of the female students that were involved in this questionnaire.

Table 4: Age

Classification	Frequency N = 370	Percentage (%)
19 - 22 years old	86	23.2
23 - 25 years old	222	60
26 – 30 years old	48	13
31 and above years old	14	3.8

The table 4 is about age respondents. The highest age of the respondents was from 23 - 25 years old which is 60% with a total of 222 students followed by 23.2% from 19 - 22 years old with a total of 86 students. Meanwhile, respondents aged 26-30 years old are 13% with a total of 48 students and 3.8% of 31 and above years old respondents.

Table 5: Ethic

Classification	Frequency N = 370	Percentage (%)
Malay	218	58.9
Chinese	104	28.1
Indian	34	9.2
Others	14	3.8

The table 5 is about race consists of Malay, Chinese, India, and others. The number of ethnic-based demographic respondents was 218 for Malay respondents, 104 for Chinese respondents, 34 for Indian respondents and 14 for other races such as Iban, Bumiputra, Kadazan and Dusun respectively, which accounted for 58.9%, 28.1%, 9.2% and 3.8% in this study.

Table 6: University

Classification	Frequency N = 370	Percentage (%)
University Malaysia Kelantan (UMK)	211	57
University Sains Malaysia (USM)	103	27.8
University Technology Mara Kota Bharu (UiTM)	56	15.1
University Malaysia Kelantan (UMK)	211	57

Respondent profile by university. The highest percentage from University Malaysia Kelantan (UMK) with 211 respondents (57%). The second highest university group was from University Sains Malaysia (USM) with 103 respondents (27.8%). The next highest was from University Technology Mara Kota Bharu (UITM) with 56 respondents (15.1%).

Table 7: Have you ever made an online purchase through Shopee Application?

Classification	Frequency N = 370	Percentage (%)
Yes	358	96.8
No	12	3.2

The table 7 shows the respondents for each made online purchase through Shopee Application. Majority percentage is yes respondents use Shopee application is 96.8% (N=358) and no with 3.2% with 12 students.

Table 8: How many times online purchase through Shopee Application per month?

Classification	Frequency N = 370	Percentage (%)
1 - 2 times	128	34.6
3 - 4 times	122	33
5 - 6 times	78	21.1
Above 6 times	42	11.4

The table 8 shows the respondents of times online purchase through the Shopee Applications was used by the 370 respondents who used in university, Kota Bharu. The highest respondents are the Shopee Applications that is used once to twice a month was 128 respondents with 34.6% respectively. The next highest respondents of Shopee Applications used three to four times a month were 122 respondents with 33% respectively. The other respondents were used online purchase through Shopee Applications in five to six times a month and above six times a month were 78 respondents with 21.1% and 42 respondents with 11.4% respectively.

4.3   Descriptive Analysis

Table 9: Descriptive Analysis of Customer Satisfaction and Brand loyalty

No.	Customer Satisfaction and Brand Loyalty	Mean	SD	N
1.	I would recommend Shopee Applications to others who ask me for advice	5.72	1.449	370
2.	I will continue to use Shopee Applications service.	5.72	1.376	370
3.	I only pay attention to Shopee Applications.	5.39	1.594	370
4.	I feel loyal to Shopee Applications.	5.46	1.537	370
5.	I believe that Shopee Applications is the best app brand in the online purchase and selling.	5.60	1.595	370

Based on Table 9, descriptive analysis of price factor consists of five questions. It shows the mean of respondent's response on the price factor variable according to Seven-Point Likert scale. Five (5) questions were measured and two of the items had the highest mean values, in the statements "I would recommend Shopee Applications to others who ask me for advice" and "I will continue to use Shopee Applications service" with a mean value of 5.72 and standard deviations of 1.449 and 1.375, the highest mean values are since they have been used for a long time. In the statement "I believe that Shopee Applications is the best app brand in the online purchase and selling", the mean is 5.60

with a standard deviation of 1.595, since the Shopee Applications gives people a sense of dependency. Next, in the statement "I feel loyal to Shopee Applications", the mean was 5.45 with a standard deviation of 1.537, since the Shopee Applications gives people peace of mind when shopping. In the statement "I only pay attention to Shopee Applications", the lowest mean was 5.39 with a standard deviation of 1.594 since there are other brands to compare with the Shopee Applications.

Table 10: Descriptive Analysis of Accuracy of Delivery

No.	Accuracy of Delivery	Mean	SD	N
1.	Purchased products via Shopee Applications are delivered during the stipulated delivery time.	4.15	0.985	370
2.	The speed of delivery that has be made by Shopee Express influencing of my level of satisfaction and brand loyalty to Shopee Applications.	4.13	1.034	370
3.	Shopee Express delivers goods or in-package services to customers according to the time promised in the Shopee application.	4.08	0.994	370
4.	Shopee Express delivery services help me accomplish things more quickly purchasing process in Shopee Applications.	4.13	0.982	370
5.	Shopee Express follows the Shopee Application display and delivers securely.	4.14	0.990	370

Based on the table 10, descriptive of delivery measured using the mean and standard deviation of each item. A total of five (5) questions were measured, with the highest mean of 4.15 for question 1 and a standard deviation of 0.985 due to the very efficient shipping of the Shopee Application. The statement of question 5, take the mean value of 4.14, standard deviation 0.990. In the question 2 and 4 with a mean of 4.13 and standard deviations of 1.034 and 0.982. Follow question 3 that had the lowest mean and standard deviation were 4.08 and 0.994, respectively.

Table 11: Descriptive Analysis of Price of Delivery

No.	Price of Delivery	Mean	SD	N
1.	The price charged affecting brand loyalty in my level of satisfaction toward Shopee Applications.	4.20	0.933	370
2.	The delivery prices made by Shopee Express in Shopee Applications is low compared to other online application.	4.04	1.025	370
3.	The preferences of price offered by sellers in Shopee Application.	4.18	0.928	370
4.	The delivery price set of Shopee Applications is reasonable with the weight of item or parcel.	4.15	0.941	370
5.	I think the customer satisfaction with the delivery price of using the Shopee application affects my loyalty to it.	4.21	0.891	370

Based on table 11, descriptive analysis for price of delivery. Five (5) questions were measured with one item having the highest mean of 4.21 and standard deviation of 0.891 with the statement of question 5. The statement question 1 has a mean of 4.20 and a standard deviation of 0.933 since price depends on the speed of logistics. On the question 3, the mean is 4.18 with a standard deviation of 0.928. Next, on the statement of question 4, the mean is 4.15 with a standard deviation of 0.941 since the weight of each item is different. Follow the question 2 the lowest mean is 4.04 with a standard deviation of 1.025, since Shopee Express does not give free shipping like other platforms.

Table 12: Descriptive Analysis of Information Quality

No.	Information Quality	Mean	SD	N
1.	The information on the Shopee Applications is straightforward.	4.26	0.914	370
2.	The information on the Shopee Applications is recent.	4.28	0.905	370
3.	For buying decisions, Shopee Applications information is complete.	4.21	0.961	370
4.	Shipping information of Shopee Express in Shopee Applications is appropriate and accurate.	4.24	0.917	370
5.	Information provided about service in Shopee Applications is appropriate and correct.	4.18	0.937	370

Based on table 12, descriptive analysis of convenience factor consists of five questions. The highest mean 4.28 and standard deviation 0.905 on the statement "The information on the Shopee Applications is recent". This was closely followed by the statement "The information on the Shopee Applications is straightforward" with a mean of 4.26 and a standard deviation of 0.914 because of its possession of perfect information. The statement "Shipping information of Shopee Express in Shopee Application is appropriate and accurate" has a mean of 4.24 and a standard deviation of 0.917. On the statement "For buying decisions, Shopee Applications information is complete", the mean is 4.21 with a standard deviation of 0.961. Followed the lowest mean 4.18 and standard deviation 0.937 on the statement "Information provided about service in Shopee Applications is appropriate and correct.

Table 13: Descriptive Analysis Ease of Payment

No.	Ease of Payment	Mean	SD	N
1.	Payment method of Shopee Applications is regarded as very compact, easy to use and understand, and offering numbers of payment alternative.	4.30	0.916	370
2.	Shopee Applications offers many methods of payment such as bank transfers, Shopee Pay, COD and third-party.	4.22	0.900	370
3.	I will continue to use Shopee Pay in Shopee Application even though the transaction fees of other e-money providers are lower.	4.13	0.992	370
4.	I can complete a transaction quickly in Shopee Applications.	4.25	0.919	370
5.	I find Shopee Applications payment is easy to navigate.	4.27	0.916	370

Table 13 showed the descriptive analysis of ease of payment. For the statement "Shopee Applications payments are considered very compact, easy to use and understand, and offer a variety of payment options", five (5) questions were measured with a maximum mean of 4.30 and a standard deviation of 0.916. This was followed closely by "I find Shopee Applications payments easy to navigate" with a mean of 4.27 and a standard deviation of 0.916. The statement "I can complete a transaction quickly in Shopee Applications" has a mean of 4.25 and a standard deviation of 0.919. On the statement "Shopee Applications offers many methods of payment such as bank transfers, Shopee Pay, COD and third-party", the mean is 4.22 with a standard deviation of 0.900. On the statement "I will continue to use Shopee Pay in Shopee Application even though the transaction fees of other e-money providers are lower", the mean is 4.13 with a standard deviation of 0.992 because of ease of use, simplicity, and speed.

Table 14: Descriptive Analysis for Security of Payment

No.	Security of Payment	Mean	SD	N
1.	Symbols and messages that signal the site is safe appear on the Shopee Application payment.	4.24	0.900	370
2.	The Shopee Application informs me of the security of personal information when making the payment.	4.19	0.955	370
3.	The Shopee Application guarantees that sensitive information is not shared with others.	4.22	0.927	370
4.	I feel comfortable to provide credit card details on this Shopee Applications payment.	4.09	0.993	370
5.	There are ample security features on the Shopee Applications payment.	4.20	0.954	370

Table 14 shows the security of payments using the mean and standard deviation of the items. There were five (5) questions measured with the highest mean of 4.24 and standard deviation of 0.900 regarding "Symbols and messages that signal the site is safe appear on the Shopee Application payment". This was followed by "The Shopee Application guarantees that sensitive information is not shared with others" with a mean of 4.22 and a standard deviation of 0.927, due to prevent scams. The statement "There are ample security features on the Shopee Applications payment" has a mean of 4.20 and a standard deviation of 0.954. In the statement "The Shopee Application informs me of the security of personal information when making the payment", the mean is 4.19 and the standard deviation is 0.955, to give guests peace of mind when making payments. In the statement "I feel comfortable to provide credit card details on this Shopee Applications payment", the mean value is 4.09 and the standard deviation is 0.993, because it is secure in the payment again.

4.4   Reliability Test

Table 15: Actual Reliability Test of 370 Respondents

Variables	Construct	Cronbach's Alpha	N of Items	Result
DV	Customer Satisfaction and Brand Loyalty	0.923	5	Excelent
IV 1	Accuracy of Delivery Order	0.917	5	Excelent
IV 2	Price of Delivery	0.888	5	Excelent
IV 3	Information Quality	0.918	5	Excelent
IV 4	Ease of Payment	0.904	5	Excelent
IV 5	Security of Payment	0.915	5	Excelent

Table 15 shows the value of Cronbach's alpha for each variable was measured by using SPSS reliability analysis. There are five independent variables which are accuracy of delivery order, price of delivery, information quality, ease of payment and security of payment. Based on the SPSS result, each of the independent variables has achieved by Cronbach's alpha coefficient value of 0.917, 0.888, 0.918, 0.904, and 0.915, respectively. While customer satisfaction and brand loyalty as a dependent variable, which has the Cronbach's alpha coefficient value of 0.923 shows excellent internal consistency in this study. The results showed that the actual questionnaire for 370 respondents is reliable and accepted in this study.

4.5 Correlation Analysis

Table 16: Spearman Correlation Coefficient

			Customer Satisfaction Brandloyalty	Accuracyofdelivery	Pricesof delivery	Informationquality	Easeofpayment	Securityofpayment
Spearman's rho	Customer Satisfaction And Brandloyalty	Correlation Coefficient	1.000	.641**	.677**	.624**	.655**	.624**
		Sig. (2-tailed)	.	.000	.000	.000	.000	.000
		N	370	370	370	370	370	370
	Accuracyofdelivery	Correlation Coefficient	.641**	1.000	.801**	.802**	.743**	.756**
		Sig. (2-tailed)	.000	.	.000	.000	.000	.000
		N	370	370	370	370	370	370
	Pricesofdelivery	Correlation Coefficient	.677**	.801**	1.000	.777**	.783**	.781**
		Sig. (2-tailed)	.000	.000	.	.000	.000	.000
		N	370	370	370	370	370	370
	Informationquality	Correlation Coefficient	.624**	.802**	.777**	1.000	.774**	.783**
		Sig. (2-tailed)	.000	.000	.000	.	.000	.000
		N	370	370	370	370	370	370
	Easeofpayment	Correlation Coefficient	.655**	.743**	.783**	.774**	1.000	.793**
		Sig. (2-tailed)	.000	.000	.000	.000	.	.000
		N	370	370	370	370	370	370
	Securityofpayment	Correlation Coefficient	.624**	.756**	.781**	.783**	.793**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.
		N	370	370	370	370	370	370

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

The table 16 shows that accuracy of delivery on customer satisfaction and brand loyalty were significantly correlated at r = 0.641, p < 0.05. The value between price of delivery on customer satisfaction and brand loyalty were significantly correlated at r = 0.677, p < 0.05. The value between information quality on customer satisfaction and brand loyalty were significantly correlated at r = 0.624, p < 0.05. The value between ease of payment on customer satisfaction and brand loyalty were significantly correlated at r = 0.655, p < 0.05. The value between security of payment on customer satisfaction and brand loyalty were significantly correlated at r = 0.624, p < 0.05.

The value of correlation coefficient of customer satisfaction and brand loyalty is r = 0.747, p < 0.05; accuracy of delivery is r = 0.756, p < 0.05; price of delivery is r =

0.771, p < 0.05; information quality is r = 0.755, p < 0.05; ease of payment is r = 0.710, p < 0.05 and security of payment is r = 0.721, p < 0.05.

5   Discussion

Table 17: Hypothesis of study

Hypotheses	B-Value	T-Value	P-Value	Decision
1. There is a significant effect between the accuracy of delivery on customersatisfaction and brand loyalty toward Shopee Applications among university students in Kota Bharu.	1.183	23.394	0.000	Supported
2. There is a significant effect between the price of delivery on customer satisfaction and brand loyalty toward Shopee Applications among university students in Kota Bharu.	1.348	25.600	0.000	Supported
3. There is a significant effect between the information quality on customer satisfaction and brand loyalty toward Shopee Applications among university students in Kota Bharu.	1.287	24.207	0.000	Supported
4. There is a significant effect between the ease of payment on customer satisfaction on customer satisfaction and brand loyalty toward Shopee Applications among university students in Kota Bharu.	1.346	25.952	0.000	Supported
5. There is a significant effect between the security of payment on customer satisfaction and brand loyalty toward Shopee Applications among university students in Kota Bharu.	1.233	22.649	0.000	Supported

Table 17 shows that it can be concluded that there is a significant effect between the accuracy of delivery, price of delivery, information quality, ease of payment and security of payment on customer satisfaction on brand loyalty. This is because, it can be seen (p <0.05) that shows a significant correlation between all the variables since p <0.05.

H1: There is a significant effect between the accuracy of delivery on customer satisfaction and brand loyalty toward Shopee Applications among university students in Kota Bharu. This is because the results show (p <0.05, r = 0.773). This indicates a significant correlation between the variable. Based on the previous study by Hongfang Qiao, et al (2022), they agreed that the level of timely or accuracy of delivery is a symbol to measure the comprehensive strength of the company. Plus, the accuracy of delivery is a fundamental and integral objective of online customers said Zaiullah, Yi and Akher (2014).

H2: There is a significant effect between the price of delivery on customer satisfaction and brand loyalty toward Shopee Applications among university students in Kota Bharu. This is because the results show (p <0.05, r = 0.800). This indicates a significant correlation between the variables. Supported on previous study by Rizky, Hidayat, & Devita (2019), they agreed that price is one of the factors that can affect a person for the purchase decision states that the price significantly influences the purchase decisions.

H3: There is a significant effect between the information quality on customer satisfaction and brand loyalty toward Shopee Applications among university students in Kota Bharu. This is because the results show ($p < 0.05$, $r = 0.784$). This indicates a significant correlation between the variables. Further on the previous study by Nando Septiapp and Linda (2022), they agreed that the effort of the Shoppe of building courier services is for product cannot separate from its determination to improve the quality of delivery services and achieve the customer satisfaction and loyalty. Further from Zhi Pei et al., (2022) also agreed that customers can browse the online ordering page that is official Shopee Website or can directly access the application.

H4: There is a significant effect between the ease of payment on customer satisfaction and brand loyalty toward Shopee Applications among university students in Kota Bharu. This is because the results show ($p < 0.05$, $r = 0.804$). This indicates a significant correlation between the variables. Further from the previous study by Santia and Maftuchach (2022) agreed that the payment method on purchasing for the user is a customer friendly

H5: There is a significant effect between the security of payment on customer satisfaction and brand loyalty toward Shopee Applications among university students in Kota Bharu. This is because the results show ($p < 0.05$, $r = 0.763$). This indicates a significant correlation between the variables. Refer to Nizar and Jusoh (2021), they agreed that security is a significant factor that influencing demand for e-commers, and customers will be buy from the online platform that secure and has a good reputation on managing customer information and privacy like Shopee.

6   Recommendation

In summary, our research findings indicate that several aspects. The researchers have some recommendations that might be helpful to individuals who want to carry out study on themes related to this research. The respondents' target population needs to be precisely defined before the study is conducted. Before choosing a respondent for the study, make sure they are reachable and available. As a result, it will avoid the issue of having inadequate respondents at the study's conclusion. Future researchers can explore many ways to improve the accuracy and reliability of the study results, future researchers can expand the sample size of more than 370 respondents. The issue will jeopardize the overall research results' accuracy and reliability. Additionally, the respondents need to be well-versed in the subject matter. As a result, the opinions of respondents who possess some basic information will be more helpful to researchers than those of respondents who possess no such expertise. These respondents' study result will likewise be more acceptable.

7   Conclusion

In nutshell, the aim of the study is to determine the factors influencing customers satisfaction and brand loyalty toward Shopee Application among University student in Kota Bharu. Several tests were applied to the data collected from the survey to examine this thesis. The findings of the study show that independent variables (accuracy of delivery order, price of delivery, information quality, ease of payment and security of

payment) in this study have a significant relationship on customer satisfaction and brand loyalty toward Shopee Application among University students in Kota Bharu. Furthermore, based on the Spearman Correlation test results, it can be concluded that five independent variables have a strong positive relationship with customer satisfaction and brand loyalty toward Shopee Application among University students in Kota Bharu. In conclusion, this study has an impact on future researchers as well as the technology and logistics.

8   Acknowledgment

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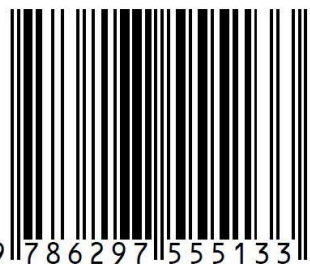
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