

# THE RELATIONSHIP BETWEEN CUSTOMER SATISFACTION AND SUSTAINABLE SERVICE PERFORMANCE ON E-COMMERCE FOODS LOGISTICS IN MALAYSIA

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**Abstract:** *The objectives of this research are to identify the sustainable service performance of food industry and e-commerce of food logistics during the Pandemic of Covid19. It involves of the overall deliveries, quality, information, timeliness, personnel contacts, and perceived important. It also explores on the customer satisfaction e-commerce of food logistics companies. The epidemic of Covid-19, fresh food e-commerce platforms which online purchases were established extensively. This growth has affected in the final logistics services and become more and more important during the movement control. The development of the e-commerce logistics may be influenced by the competent final logistics solution given by e-commerce of food companies. The survey was conducted using on line questionnaires that involved of 384 respondents. The questionnaires were analysed by using Statistical Package for Social Science (SPSS) software, Pearson Correlation and multiple linear regression. The results of Pearson Correlation and multiple linear regressions show that the Personnel Contact (PCQ), Delivery (DQ), Information (IQ), Timeliness (TQ) and Perceived Important (PIQ) have a positive relationship with customer satisfaction. The results suggest that the variables recommended are able to be used in future developing service performance in foods industry and e-commerce food at the final logistics requirements during pandemic.*

**Keywords:** *food logistics, e-commerce, sustainable service performance, final logistics, delivery quality, information quality, timeliness quality, personnel contact quality and perceived important.*

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### 1. INTRODUCTION

This research investigates on service performance from food logistics towards e-commerce activities during the pandemic of Covid-19. Most of the foods industry services such as Tesco Online, Mydin and restaurant have provided grocery delivery service and selling fresh foods, to their customers. The e-commerce market in Malaysia is in a stage of rapid growth, and therefore has to put more effort in this situation (Inside Retail Asia, 2021). During the pandemic, E-commerce foods are more convenient especially dealt with telecommunication connection. Foods delivery is more difficult than distributing other processed items or materials cause of time factors. In maintaining the product's quality and it is necessary to practice a good logistics system, such as refrigerated



vehicles and containers with proper handling and scheduled times. Delivery on time is a vital in order to maintain the fresh for the places in urban city, isolated locations especially during peak hours. However, after the World Health Organization declared Covid-19 in March 2020, the usage of package items and containers are fully practiced by food providers. As a result of the lockdown restrictions, many businesses have limited their scope of operations or some have closed down their businesses. Several business entities are forced to lay off workers or reduce working hours (Parolin and Wimer, 2020). As a result of the lockdown regulation, internet grocery shopping and surged of food delivery, while retail visitation fell during the quarantine time. In order to create and improve the customers' satisfaction on food industry and e-commerce services, the sustainability of final logistics plays a significant role. This research intends to investigate further on how service performance from foods e-commerce by providing for the best services towards the end customers during the Covid-19.

Due to the Movement Control Order (MCO) in 2019 as imposed by the government, Malaysians have turned to e-commerce platforms to purchase daily items, foods and groceries. In particular, demand for foods such as vegetables, fruits, meat, seafood and fish continues to grow, making the availability of fresh foods as a key driver for e-commerce shops and supermarkets (Boxme, 2021). While the fresh food market is growing rapidly, it is also one of the most complex supply chains to be managed. Foods are perishable items, which storing and transporting had posed a new logistical challenge for e-commerce foods until the final deliveries. Hence, here are some of the most persistent issues in e-commerce and food industry at the final state of delivery.

Sustainable in service performance such as delivery quality, information quality, timeliness quality and perceived importance were facing Four (4) challenges. The first challenge is lack of visibility. Lack of visibility is able to delay the shipments and reduce their quality of foods. Furthermore, a lack of visibility able to lead a breakdown in communication between suppliers and consumers and caused on customers' dissatisfaction. On the other hand, the lack of visibility will generate more delivery processes, which will lead to an increase in carbon emissions (Li, Miroso & Bremer, 2020). The second challenge is poor route planning as planned by food delivery operators. Ineffective route planning will lead to delays in delivery and shorten the life expectancy of fresh food products, which will be impacted of customer satisfaction and increase costs in the business. In addition, failed route planning will lead to more food wastes in the daily practiced. The third challenge is consumer behavior. As a result of the rapid development of new technologies, consumer habits and behaviors have changed, and they have shifted from conventional channels to shopping on e-commerce platforms (eLogii, 2021). As a result, consumers' expectations are higher than before want the food to be the best as required. The fourth challenge is negative environmental impact such as packaging and types of foods to be delivered. However, this method of packaging will result in a large amount of plastic, food wastes and garbage at their homes compound.

Another sustainable service performance such as personnel contacts, addresses, phone numbers, quality lives during the transaction are also facing on the security issues. As e-commerce is achieved by sellers and customers through a virtual online platform, meaning that the two parties to a transaction do not need to meet in the real world, this can easily lead to the problem uncertainty in their transaction (Heikal et al., 2020). As a result, criminals can intercept other people's harmonies through the misuse of the information as revealed to third parties.

## 2. LITERATURE REVIEW

The final logistics or end to end logistics can define as the short geographical portion of delivering communication and media services or products to customers in densely populated locations. It covers the complete on logistics cycles, starting with procurement, distribution, transportation, delivery and ending with return materials (Solodo, 2022). The E-commerce activity is defined as the purchasing or selling products or services over computer networks using methods specifically developed to obtain or place orders. (OECD, 2011). Customer satisfaction is an important factor that must always be considered to achieve the established organizational goals. It also shows that



customer satisfaction directly affects the retention rate of customers for long-term repeated purchases (Ibojo & Bolonle, 2015). According to Tseng, Lim, Wong, Chen & Zhan (2015), stated that sustainable services are defined as products or service provided to the customers in order to fulfil customers' demands and considerably enhance social and environmental performance throughout their lifespan, as compared to traditional or competing products. Delivery quality is a challenging part but profitable for service firms to provide high-quality product continually. Delivery quality also is the one type of services quality that provide by the company. Providing good delivery quality services is able to provide for a long-term competitive edge. Information quality can build up trust among the customer. A study information quality is critical in the company and it reflects on the accuracy of the information provided by the company (Azemi, Zaidi & Hussin, 2017). The term "timeliness" is related to whether the order arrives at the customer's address on time. Factors influencing the Information and Communication Technology (ICT) of Third Party logistics in Malaysia is a core competency in the business ( Omotayo, A., & Melan, M. , 2017). On the other hand ICT is playing an important role in the day to day activities in food logistics especially during the pandemic. The only way to have extensive knowledge on how it used and secure the market at one particular time. In general, timeliness refers to the amount of time that passes between placing an order and receiving the goods. It may help to reduce the time during the services made and the interruptions throughout the whole operation. Discovered that the availability of demand-based flexible timeliness can further improve customer satisfaction (Ho et al., 2012). During the services rendered, communication between service providers and customers are very important. It's able to increase the perception and customer expectations in future. Customers have had evaluated the service quality from three dimensions which include physical quality, enterprise quality and interaction quality. Interaction functions be seen as a communication between service providers, customers, contacts, and other customers are the fundamental aspect of service quality (Uvet, 2020). Customer perception is an important concept in marketing (Suryadi, Suryana, Komaladewi, & Namuri, 2018). It is an important characteristic used to define the attractiveness of a service or good to customers and is the main reason why customers are interested in certain products. It also refers to other modes delivery in the customer satisfaction towards the rail services in Malaysia and Thailand (Melan, M., Hassan, M.G., Prapinit, P., Radasa, N., Pachateeya, B. (2021). It also refers to customers satisfaction to the service industry which applicable to food at present. Both between the sellers and customers have to practice the systematic ways during the COVID especially on the gadget practices for ensuring smooth movement of the ordered materials. Therefore the preferences of an aadoption of business intelligence, technological, individual and supply chain efficiency are vital in these activities (Jalil, N. A., Prapinit, P., Melan, M., & Mustaffa, A. B.(2019). Through the literature reviews the research framework and hypotheses were established (Figure 1).

### 3. RESEARCH FRAMEWORK

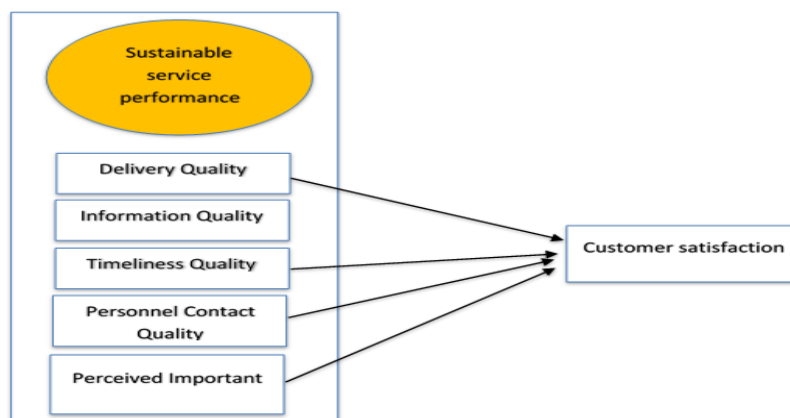


Figure 1 Research framework for customer satisfaction



The following hypotheses are proposed:

Hypothesis 1 (H1): The delivery quality in sustainable service performance has effect on the final logistics in e-commerce foods industry .

Hypothesis 2 (H2): The information quality in sustainable service performance has effect on the final logistics in e-commerce foods industry.

Hypothesis 3 (H3): The timeliness quality in sustainable service performance has effect on the final logistics in e-commerce foods industry.

Hypothesis 4 (H4): The personnel contact quality in sustainable service performance has effect on the final logistics in e-commerce foods industry.

Hypothesis 5 (H5): The perceived important quality in sustainable service performance has effect on final logistics in e-commerce foods industry .

#### 4. METHODOLOGY

The instruments used for this study were survey questionnaires as the method data collection and other information. There were 32 total items adopted from Jiang et al. (2021). Two types of scales were chosen for the study, i.e. a Likert and Multiple-choice scales. The Likert scale is a five-point scale used to allow individuals to express the extent to which they agree or disagree with the statement. The multiple choice scale, on the other hand, provides respondents with more than two options to choose from. The questionnaires were distributed among 400 respondents and only 384 were accepted. Data collections were collected through random sampling in Malaysia from December 2021 and it takes about six months in the whole processes.

#### 5. RESULT AND DISCUSSION

Table 1, represents the online shopping duration and gender of the respondents. The data collections involved 384 respondents. The survey categorizes with five (5) types of online shopping duration which 51.8% (199 respondents ) represents using less than 1 hour on online shopping, 17.7% (68 respondents) use 1 hours, 12.5% (49 respondents) use 2 hours, 10.9% (42 respondents) use 3 hours and 7% (27 respondents) using more than 3 hours on online shopping. The categories of genders were female 68.8% (204 respondents) and male 31.3% (120 respondents).

Table 1; Respondent background and profiles

Online Shopping Duration	Frequency	Percent
Less than 1 hour	199	51.8
1 hour	68	17.7
2 hours	48	12.5
3 hours	42	10.9
More than 3 hours	27	7
Total	384	100.00
Gender	Frequency	Percent
Male	120	31.3
Female	204	68.8
Total	384	100.00

#### 6. PEARSON CORRELATION

Testing the correlation between the independent variables was conducted in this study. Pearson correlation coefficient values will range from -1.0 to +1.0. Since  $P < 0.05$  (0.000), the relationship between personnel contact quality, delivery quality, information quality, timeliness quality, perceived important and customer satisfaction were significant. As a result, all five independent variables have positive correlation with the customer satisfaction. Table 2 shows all the research variables, which are Personnel Contact (PCQ), Delivery (DQ), Information (IQ), Timeliness (TQ) and



Perceived Important (PIQ). These variables were significantly correlated with Customer Satisfaction (CS) when p at least <0.05.

**Table 2; Pearson Correlation**

		Personnel contract	Delivery	Information	Timeliness	Perceived Important
Personnel contract	Pearson Correlation	1	0.718**	0.725**	0.620**	0.487**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000
	N	384	384	384	384	384
Delivery	Pearson Correlation	0.718**	1	0.762**	0.710**	0.535**
	Sig. (2-tailed)	.000		.000	.000	0.000
	N	384	384	384	384	384
Information	Pearson Correlation	0.725**	0.762**	1	0.813**	0.616**
	Sig. (2-tailed)	.000	.000		.000	0.000
	N	384	384	384	384	384
Timeliness	Pearson Correlation	0.620**	0.710**	0.813**	1	0.629**
	Sig. (2-tailed)	.000	.000	.000		0.000
	N	384	384	384	384	384
Perceived important	Pearson Correlation	0.487**	0.535**	0.616**	0.629**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	384	384	384	384	384

**7. REGRESSION**

It also can found that the Four (4) Independent variables (Delivery, Information, Timeliness, and Perceived Important) are all of great significance in explaining customer satisfaction, because their P values are all < 0.05. Due to these independent variables significant predictors of Customer Satisfaction at p < 0.05. While the P value for the Personnel Contact variables is >0.05, this means that it isn't statistically significant. In sum, these results supported all hypothesized relationships in this study. All factors explained 66.6% (R<sup>2</sup> =0.666) of variance in delivery service quality. Table 3 refers to Multi linear regression for the research.

**Table 3; Multi linear regression**

Relationship	B	T	Sig.	R <sup>2</sup>	Decision
Personnel Contact □ Customer Satisfaction	0.081	1.767	0.078		Rejected
Delivery □ Customer Satisfaction	0.103	2.052	0.041		Accepted
Information □ Customer Satisfaction	0.152	2.491	0.013	0.666	Accepted
Timeliness □ Customer Satisfaction	0.405	7.514	<0.001		Accepted
Perceived Important □ Customer Satisfaction	0.197	5.048	<0.001		Accepted



## 8. CONCLUSION

This study provides an understanding and explanation of the final logistics service which provide through the e-commerce food delivery from the perspectives of Malaysian respondents. According to the Pearson correlation data, the dependent variable, Customer Satisfaction, has a linear connection with all five independent factors. Customer satisfaction has the strongest association with timeliness quality, as shown by ( $r = 0.776$ ). Followed by The strongest relationship is between Information Quality and Customer Satisfaction with a correlation of 0.740. In addition, through multiple regression analysis, there are 4 independent variables which include Delivery, Information, Timeliness, Perceived Important are significant towards dependent variable (Customer Satisfaction) because their P values are  $< 0.05$  while personnel contact quality variable's p value is  $> 0.05$ , therefore it is not significant to the dependent variable. The result enables the researchers to obtain new information and knowledge of foods e-commerce logistics services within the framework of various data analysis and findings. The sustainable service performance towards the customers' satisfaction is able to use several indicators such as delivery quality, information, times, contacts, and perceived important to any transaction during the disasters. All hypotheses were established and suggest that to be used in future guidelines for country as and when facing the pandemic or disasters.

## 9. LIMITATIONS AND FUTURE STUDIES

The research was conducted in six month with the constraints of Covid 19 with the movement control order. The survey was conducted through online using social media platforms or email and taken longer times to answer the question or survey. With specific time frame, the researches able to be ended until all hypotheses were established. The research suggested for future improvement which able to increase the diversity of the data. Finally, future study may use long-term surveys to examine changes in consumer satisfaction with fresh food e-commerce for final logistics service in different scenarios.

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