

## 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 the food industry and e-commerce of food logistics during the Pandemic of Covid19. It involves the overall deliveries, quality, information, timeliness, personnel contacts, and perceived importance. It also explores the customer satisfaction e-commerce of food logistics companies. During the pandemic of COVID-19, fresh food e-commerce platforms which online purchases were established extensively. This growth has affected the final logistics services and becomes more and more important during the movement control. The development of e-commerce logistics may be influenced by the competent final logistics solution given by the e-commerce of food companies. The survey was conducted using online questionnaires that involved 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 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 can be used in the future developing service performance in the foods industry and e-commerce food at the final logistics requirements during the 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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### INTRODUCTION

The COVID-19 pandemic has changed how people live and how the economy works. Almost all of the countries shut down their economies by putting in Movement Control Order (MCO), including Malaysia. To secure the economy remains competitive during the MCO, E-commerce is a new gateway to carry out business activities. The growth of e-commerce industries are mainly due to the expansion in the number of online shoppers. Therefore this expansion has also prompted a shift in the business strategy of Malaysian retailers toward e-commerce and Internet-of-Things (IoT). Alternatively, this has created opportunities for the country's leading logistics sectors including e-commerce, and third-party logistics service providers (Mazlan, 2021). This study aims to investigate service performance from food logistics towards e-commerce activities during the pandemic of COVID-19. This understanding issue was considered due to most of the foods industry services such as Tesco Online, Mydin and restaurants have provided grocery delivery service and selling fresh foods, to their customers. As a whole, the e-commerce market in Malaysia is in a stage of rapid growth and is required to generate more effort on how this e-commerce service is perceived by the customers during the pandemic (Inside Retail Asia, 2021). On the other hand, e-commerce foods are more convenient especially dealt with

telecommunication connections. Food 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 vital to maintain the freshness of places in an urban city and 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 practised 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 food delivery, retail visitation fell during the quarantine time. To create and improve customer satisfaction in the food industry and e-commerce services, the sustainability of final logistics plays a significant role. This research intends to investigate further how service performance from foods e-commerce by providing the best services to the end customers during the COVID-19 pandemic.

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 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 the e-commerce and food industry at the final stage of delivery.

Sustainable 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 which is intended to delay the shipments and reduce the quality of foods. Furthermore, a lack of visibility able to lead a breakdown in communication between suppliers and consumers and influence 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 customer satisfaction and increase costs in the business. In addition, failed route planning will lead to more food waste in daily practice. 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). Resulting in consumers' expectations being higher than before wanting the food to be the best as required. The fourth challenge is the 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 waste and garbage at the compound of their home.

Other sustainable service performances such as personnel contacts, addresses, phone numbers, and quality lives during the transaction are also facing 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 of 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.

## 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 logistics cycles, starting with procurement, distribution, transportation, and delivery and ending with return materials (Solodo, 2022). The e-commerce activity is defined as the purchasing or selling of 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 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 services provided to customers to fulfil customers' demands and considerably enhance social and environmental performance throughout their lifespan, as compared to traditional or competing products. Similarly delivery quality is a challenging part but profitable for service firms to provide high-quality services and products continually that provide by the company. Providing good delivery quality services can provide a long-term competitive edge. Information quality can build up trust among the customer. The 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 is 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 is very important. It's able to increase the perception and customer expectations in future. Customers have evaluated the service quality from three dimensions which include physical quality, enterprise quality and interaction quality. Interaction functions are seen as 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). Since perception 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 can refer to other modes of 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). Ultimately tt

also refers to customer satisfaction in the service industry which applicable to food at present. Both the sellers and customers have to practice systematic ways during the COVID-19, especially the gadget practices for ensuring a smooth supply chain of the ordered materials. Therefore the adoption 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). Based on the literature reviews the research framework and hypotheses were established in Figure 1.

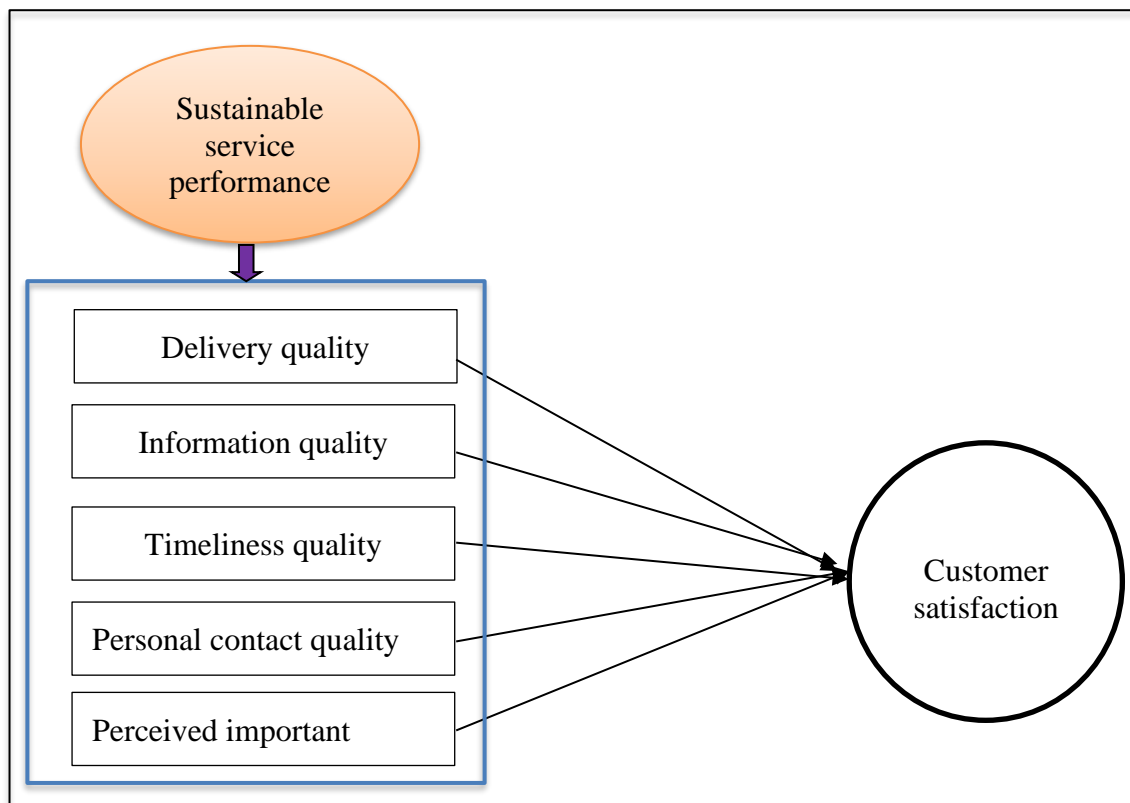


Figure 1. Research framework for customer satisfaction

The following hypotheses are proposed as follows:

- H1: The delivery quality in sustainable service performance affects the final logistics in the e-commerce foods industry.
- H2: The information quality in sustainable service performance affects the final logistics in the e-commerce foods industry.
- H3: The timeliness quality in sustainable service performance affects the final logistics in the e-commerce foods industry.
- H4: The personnel contact quality in sustainable service performance affects the final logistics in the e-commerce foods industry.
- H5: The perceived importance of quality in sustainable service performance has an effect on final logistics in the e-commerce foods industry.

**METHODOLOGY**

The instruments used for this study were survey questionnaires as the method of 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. 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. A total of 400 questionnaires were distributed among 400 respondents and only 384 were accepted. A random sampling technique was used to collect the data in Malaysia from December – May 2021. The data were analyzed by using Statistical Package for Social Science (SPSS) software and conducted Pearson Correlation and multiple linear regression to meet the research objectives.

**RESULT AND DISCUSSION**

Table 1, represents the online shopping duration and gender of the respondents. The data collection involved 384 respondents. The survey categorizes 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 hour, 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).

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**Table 1: Respondent background and profiles**

<b>Online Shopping Duration</b>	<b>Frequency</b>	<b>Percentage</b>
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
<b>Total</b>	<b>384</b>	<b>100.00</b>

<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b>
Male	120	31.3
Female	204	68.8
<b>Total</b>	<b>384</b>	<b>100.00</b>

**PEARSON CORRELATION**

Pearson correlation was conducted to test the relationship between independent and dependent variables. Results reveal 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 was significant. As a result, all five independent variables have a positive correlation with 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 was at least  $< 0.05$ .

**Table 2: Pearson Correlation**

	Personnel contract	Delivery	Information	Timeliness	Perceived Important
Personnel contract	1				
Delivery	0.718**	1			
Information	0.725**	0.762**	1		
Timeliness	0.620**	0.710**	0.813**	1	
Perceived important	0.487**	0.535**	0.616**	0.629**	1

**REGRESSION**

Furthermore, multiple linear regression was conducted to test the hypothesis. Based on the regression results, it also can be found that the four independent variables (Delivery, Information, Timeliness, and Perceived Important) are all of great significance in explaining customer satisfaction because their P values are all  $< 0.05$ . These independent variables are 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 is not statistically significant. All factors explained 66.6% ( $R^2 = 0.666$ ) of variance in delivery service quality. Table 3 refers to multiple linear regression for the research.

**Table 3: Multiple linear regression**

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

**CONCLUSION**

This study provides an understanding and explanation of the final logistics service provided through e-commerce food delivery from the perspectives of Malaysian respondents. Through multiple regression analysis, there are four independent variables which include delivery, information, timeliness, and perceived important are significant towards the dependent variable (Customer satisfaction) because their p values are < 0.05 while personnel contact quality variable's p value is > 0.05, indicating is not significant to the dependent variable. The result enables the researchers to obtain new information and knowledge of food e-commerce logistics services within the framework of various data analyses and findings. The sustainable service performance toward the customers' satisfaction can use several indicators such as delivery quality, information, times, contacts, and perceived important to any transaction during the disasters. The four hypotheses were established and suggested to be used in future guidelines for a country as and when facing the pandemic or disasters. Even though this study tries to establish the relationship between customer satisfaction and sustainable performance but remains some limitations. The first limitation of this study the research was conducted in six months with the constraints of COVID-19 with the movement control order. Second, the survey was conducted online using social media platforms or email and took a long time to answer the question or survey. With a specific time frame, the research able to be ended until all hypotheses were established. The research suggested future improvements which able to increase the diversity of the data. Finally, the 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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