

THE EFFECTS TOWARDS QUALITY OF ONLINE FOOD DELIVERY SERVICES DURING COVID-19 PANDEMIC IN MALAYSIA

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ABSTRACT - Catering businesses and consumers have embraced online food delivery services, which is a modern online to offline mobile technology. They provide two-way beneficial food and beverage distribution services to save catering businesses and meet technological and psychological exceptions for customers, particularly in the case of the COVID-19 global pandemic. The research looked at the satisfaction of 230 online food delivery service users with the use of online food delivery services during the COVID-19 pandemic in Malaysia and developed a detailed model that merged the task-technology fit model and contingency frameworks. Time savings were the most important factor, according to data and discussions, and information quality, privacy and security, as well as price savings, had a direct or indirect positive effect on the quality of online food delivery services during the COVID-19 pandemic. To better understand and clarify the quality of online food delivery services, related research and stakeholders should consider the basic characteristics of the technology associated with the user's technology and psychological understanding.

Keywords – Mobile Technology; task-technology fit model; contingency frameworks Covid-19; Online Food Delivery.

I. INTRODUCTION

With the availability of e-commerce platforms as a shopping medium, customers can easily browse, compare goods and costs, and plan product delivery [1]. The largest market segment of retail e-commerce is online food delivery. The global online food delivery industry has expanded at an exponential rate in recent years [2]. In the food and beverage industry, the online food delivery industry has become a trend. Via alliances with foodservice firms and a greater share of the food and beverage industry, this innovative marketing channel seek to boost revenue. Customers can order food through the restaurant's website or online food ordering systems such as Food Panda, Grab Food, and SmartBite in a restaurant setting thanks to the availability of digital platforms. The availability of online distribution service technologies in the catering industry allows the competitive industry to boost order quality, reliability, and customer relationships as well as broaden its market [3]. Because of the competitive environment, this development is both an opportunity and a challenge for restaurants. It is critical for online businesses to maintain their service quality in this competitive environment.

Simultaneously, beginning in late 2019, a new coronavirus (COVID-19) epidemic became a severe global pandemic, affecting the entirety of China in February 2020 and then eventually spreading worldwide [4]. During the COVID-19 crisis, WHO [5] highly advises wearing masks in public, social exclusion, self-isolation, and other self-protection measures to prevent overt and indirect communication with people and thereby minimize COVID-19 transmissions [6]. Furthermore, due to the lower number of people planning to use public services during the COVID-19 pandemic, the conventional catering sector sustained major losses. COVID-19 has altered people's lifestyles, interactions, and buying choices.

II. Literature Review

2.1 Online Food Delivery Services

Online food delivery services, as an evolving online-to-offline digital technology, combine online ordering and offline delivery services to provide a channel between catering organizations and consumers. There are two types of online food delivery services [7]. The first is the actual restaurant, such as KFC, Domino's, or Pizza Hut. Second, third-party intermediary platforms like Panda Foods, Grab Food, SmartBite, and DeliverEat are common and widely used in Malaysia. In addition, to respond to and resolve the COVID-19 pandemic, Malaysia's online food service providers have implemented a contactless delivery system that allows food to be delivered to customers without direct contact. Simultaneously, online food ordering systems provide consumers with daily supply distribution services. These extra services have proven to be beneficial in preserving social distance during the COVID-19 pandemic, expanding the reach of services, and shortening the time and distance between sales and usage processes [8]. As a result, consumer expectations of online meal delivery services have been profoundly affected.

2.2 Literature Review of the Variables

2.2.1 Information Quality

The quality of information that represents the most basic communication skills between online buyers and sellers is seen as a fundamental determinant of trust-building [9]. The information quality means that the information itself has inherent quality, such as accuracy, reliability and completeness. In particular, the importance of information quality has been demonstrated through its relevance, usefulness and popularity. Information quality is often used to evaluate the performance of information systems and has been found to significantly affect usefulness, ease of use,

attitude, trust, satisfaction, and intent to use in an online environment [10].

Consumers are dissatisfied because they do not have a good quality of information about food delivery services, such as the phone numbers of food delivery workers [11]. Consumers need to be able to identify unknown phone numbers by business name, as most of them simply do not answer unknown phone numbers. This problem of information quality for online food delivery services is happening around the world including Malaysia. According to this statement, this is due to the lack of information provided to customers, which affects the quality of online food delivery services.

The consistency and structure of knowledge in mobile apps have an effect on the users' loyalty to the application [12]. It's plausible because consumers want up-to-date and complete information presented in the appropriate level of detail before they use it. Users of online food delivery services would be put off by false facts, making them hesitant to use them.

2.2.2 Privacy and Security

Lowry et al. [13] describe privacy to be how personal data can be accessed, used and copied and destroyed. Name, phone number, postal address, banking information, email address, passcode, and other private details are examples of personal information. As news of well-known firms destroying personal data spreads, customers are becoming increasingly concerned about how and where personal information is used in online transactions [14]. Security poses a threat that creates potential events related to payment security and data storage through online transactions, according to Tabrizchi and Rafsanjani [15]. These develop into a vulnerability that could lead to possible events in the area of payment security and data storage via online transactions. Many people avoid shopping online because of concerns about data security, non-delivery, credit card fraud, and post-purchase services, among other things. Zulkarnain et al. [16] found that confidence levels influence the readiness of consumers to purchase goods online. They noticed that online shoppers were mainly concerned with privacy and security. Many websites have adopted policies to alleviate privacy and security issues, enabling users to check, review and certify privacy policies for online transactions [17].

In a mobile e-commerce environment, consumers want mobile applications or websites protected against potential malware and viruses so that financial details of transactions are not shared or stored in any form [18]. Security vulnerabilities in online retail transactions are seriously hampering the growth of high-quality online food delivery services [19]. Because online food delivery services also allow customers to make payments online, perceived security is one of the issues that online meal delivery businesses are currently dealing with. By protecting themselves when using services for online delivery, people need to use services for online delivery.

According to Surma [20], data breaches have occurred in online food delivery services after users claimed to gain access to a big database containing email addresses, contact information, and client mailing addresses. The emails were sent from a corporate account, according to posts on social networking sites Reddit and Twitter, and featured links to addresses in around 4,300 eateries, as well as the names,

email addresses, phone numbers, and mailing addresses of hundreds of thousands of customers. Users of internet food delivery services are uneasy about this. This demonstrates that one of the issues that online meal delivery services face around the world, including in Malaysia, is privacy and security.

2.2.3 Time Saving Orientation

According to Chopdar et al. [21], the validity of perception refers to a buyer's belief that technology will help them shop more efficiently. The time saved by online shopping is a utility that customers get. Customers find online shopping useful because it saves time, reduces workload, and extends store opening hours and effective checkout [22]. It was also found that high-income consumers valued their time because of the opportunity cost. That is, high-income but short-lived people find online shopping attractive because it helps them save time [23]. In addition, Munshi et al. [24] believe that because of the simplicity consumers obtain from utilizing online payment and banking services, the dimension of time savings has a major impact on post-use utility.

Today's fast-paced world necessitates a quick response, many people can't afford to eat out or wait in restaurants to feed them [25]. Therefore, they make food replace them. It takes the least amount of time to complete a task and is, therefore, a time-saving factor. In the United States, one in two and a half meals is consumed outside the home [26]. Fast-food industry sales remained high even during the recession. Since the 1980s, the takeaway and delivery industries in the United Kingdom have risen substantially. With a wide range of alternatives and food varieties, the takeaway and takeaway marketplaces are highly unstable [27]. The speed, convenience and accuracy of online food delivery services also seem to benefit customers [28].

Customers report several complaints, especially those surrounding incorrect or incomplete orders that are not delivered on time or at the correct service temperature. Since more than 80 percent of respondents said that using third-party delivery was higher than before the COVID-19 pandemic, it was clear that this was a critical customer experience issue in online food delivery services [29]. This kind of problem is not just happening in US but around the world including Malaysia.

2.2.4 Price Saving Orientation

According to Malgieri and Custers [30], price is the monetary value that must be paid in a purchase agreement to exchange products or services. Because they are concerned about how much money they can save through discounts, consumers attempt to save money by reducing prices [31]. Consumers are prepared to make additional trips for store discounts, according to a study by Kapferer and Laurent [32]. Evidence from a study also supports the usefulness of price discounts, which reveals that discounts boost the perceived worth of product quotes by demonstrating that prices are stronger negotiating chips [33]. Lower prices encourage sales in the company, but higher discounts demonstrate the worth of a product to customers. [34]. The price-saving orientation takes into account not only currency savings but also from the point of view that there is no additional cost to purchase or use the product [1].

Lower prices appeal to both managers and consumers, both attractive and alluring [35]. Varying types of consumers pick different degrees of food quality and pricing in the food industry. Yeo et al. [1] found that consumers rationalize and make decisions based on maximizing the benefit from a transaction at the lowest possible price. Consumers will consider the nutritional worth and pricing of the food they want to buy. For example, according to an empirical study [36], consumers are prepared to spend more for more nutritious meals and vice versa. For meals and takeaways, the price of snacks in low-priced restaurants will make consumers more likely to try [8].

Delivery costs are increasingly a factor, with more than a quarter reporting that spending is their biggest deterrent to using online food delivery services [29]. Delivery costs are of course important, and consumers want to know how the price increases for each component of the total meal cost differ across the various online food delivery services. Most people around the world are considered seriously when it comes to price-related, including Malaysia.

III. METHODOLOGY

3.1 Research instrument/measurement

The sample project is based on previous research. Made some modifications based on the origin. This includes issues related to the use of B2C e-commerce classifications.

3.1.1 Independent Variables

The measurement for independent variables is as illustrated in Table 3.1.

Table 3.1: Measurement for Independent Variables

Variables	Items	Sources
Information Quality	1. I think that the online food delivery services application provides information at the right of detail that I need. 2. I enjoy using online food delivery services because it gives me believable information. 3. I think that online food delivery services application provides accurate information. 4. I feel that information in the online food delivery services application is in an appropriate format. 5. I find that online food delivery services provide me with up-to-date information related to restaurants, food and discount.	[37]
Privacy and Security	1. I perceive secure using my credit/debit card information through online food delivery services. 2. I would feel safe providing sensitive information about myself over the online food delivery services. 3. I perceive that online food delivery services are secure	[38]

	systems to conduct a transaction. 4. I believe the information I provide during my transaction with online food delivery services will not be manipulated by inappropriate parties. 5. I have confidence in the security of my transaction with online food delivery services.	
Time Saving Orientation	1. I can easily find things that I need in an online food delivery services application. 2. I believe that using online food delivery services is very useful in the purchasing process. 3. I believe that using online food delivery services helps me accomplish things more quickly in the purchasing process. 4. I believe that I can save time by using online food delivery services in the purchasing process. 5. It is important for me that the purchase of food is done as quickly as possible using online food delivery services.	[39]
Price Saving Orientation	1. I can save money by using the prices of different online food delivery services. 2. I like to search for cheap food deals on different online food delivery services' websites or applications. 3. I feel that the discount provided encourages me to use online food delivery services. 4. I think that the promotion expiry date influences me in making an order. 5. Online food delivery services offer better value for my money.	[40]

3.1.2 Dependent Variable

The measurement for the dependent variable is as illustrated in Table 3.2.

Table 3.2: Measurement for Dependent Variable

Variable	Items	Sources
Quality of Online Food Delivery Services	1. I am satisfied that online food delivery services meet my requirements during the COVID-19 pandemic. 2. I am satisfied with online food delivery services' efficiency during the COVID-19 pandemic. 3. My interaction with the	[41] [42]

	<p>online food delivery services is very satisfying.</p> <p>4. I am satisfied with online food delivery services transaction security during the COVID-19 pandemic.</p> <p>5. I think I did the right thing by using online food delivery services during the COVID-19 pandemic.</p>	
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IV. DATA ANALYSIS

4.1 Descriptive Analysis

This part will be discussed on the demographic information of respondents. The information includes gender, age range, employment status, the highest level of education and frequency using online food delivery services. To acquire data about current research, a sum of 230 sets of questionnaires were distributed to the respondents.

Table 4.1: Gender of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	108	47.0	47.0	47.0
Female	122	53.0	53.0	100.0
Total	230	100.0	100.0	

The data in Table 4.1 is based on two categories which are male and female. The data were collected from 230 respondents of which 47.0% of the data are from male respondents while 53.0% of the data are from female respondents. Hence, female contributed more to this research.

Table 4.2: Age Range of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 17 years old and below	5	2.2	2.2	2.2
18 years old – 25 years old	154	67.0	67.0	69.1
26 years old – 33 years old	32	13.9	13.9	83.0
34 years old – 41 years old	18	7.8	7.8	90.9
42 years old – 49 years old	8	3.5	3.5	94.3
50 years old and above	13	5.7	5.7	100.0
Total	230	100.0	100.0	

Table 4.2 above is the data of the age range of the 230 respondents. The age range of the respondents is divided into six categories. The age under the first category is 17 years old and below, the second category is from 18 years old - 25 years old, the third category is from 26 years old - 33 years old, the fourth category is from 34 years old - 41 years old, the following category is from 42 years old - 49 years old and the last category is from 50 years old and above.

It shows that respondents under the age range of 17 years old and below (2.2%) contributed to this research followed by respondents under the age range of 42 years old - 49 years old (3.5%), 50 years old and above (5.7%), 34 years old - 41 years old (7.8%), 26 years old - 33 years old (13.9%) and 18

years old - 25 years old (67%) contributed most to this research.

Table 4.3: Employment Status of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Students	116	50.4	50.4	50.4
Employee	66	28.7	28.7	79.1
Self-employed	14	6.1	6.1	85.2
Retiree	5	2.2	2.2	87.4
Unemployed	14	6.1	6.1	93.5
Freelancer	8	3.5	3.5	97.0
Other	7	3.0	3.0	100.0
Total	230	100.0	100.0	

Table 4.3 above is the data of the employment status of the 230 respondents. The employment status of the respondents is divided into seven categories. The employment status of the first category is student, the second category is employee, the third category is self-employed, the fourth category is retiree, the fifth category is unemployed, the sixth category is freelancer, and the last category is other.

It shows that student (50.4%), employee (28.7%), self-employed (6.1%), retiree (2.2%), unemployed (6.1%), freelancer (3.5%) and other (3.5%). Hence, students contributed more to this research.

Table 4.4: High Level of Education of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid SPM / STPM / A-Levels	62	27.0	27.0	27.0
Diploma	52	22.6	22.6	49.6
Degree	89	38.7	38.7	88.3
Master	17	7.4	7.4	95.7
Others	10	4.3	4.3	100.0
Total	230	100.0	100.0	

Based on the data in Table 4.4 above, shows the educational level of 230 respondents, where most of the respondents are from the degree category (38.7%), followed by SPM / STPM / A-Levels (27.0%), diploma (22.6%), master (7.4%) and the lowest contribution in others category respondents which are (4.3%).

Table 4.5: Frequency Respondents Using Online Food Delivery Services

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid At least 1 time every 3 days	49	21.3	21.3	21.3
At least 1 time per 1 week	65	28.3	28.3	49.6
At least 1 time every 2 weeks	38	16.5	16.5	66.1
At least 1 time per 1 month	49	21.3	21.3	87.4
Never used during the pandemic	29	12.6	12.6	100.0
Total	230	100.0	100.0	

4.2 Normality Test

A normality test determines whether the data is correctly distributed. For multiple linear regression analysis, it is critical to ensure that the data is normally distributed. Two statistical models will be used to explain the results (Kolmogorov-Smirnov and Shapiro-Wilk). The Z score is tested if an irregular distribution occurs.

Table 4.6: Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Quality of Online Food Delivery Services	.142	230	.000	.962	230	.000

a. Lilliefors Significance Correction

Since there are 230 sample sizes in this analysis, the normality test will be based on the Kolmogorov-Smirnov model. The p-value is less than 0.05, indicating that the data is not normally distributed, as seen in Table 4.6 above. As a result, the Z-score is examined.

Table 4.7: Descriptive Analysis

		Statistic	Std. Error
Quality of Online Food Delivery Services	Mean	3.8643	.04384
	95% Confidence Interval for Mean		
	Lower Bound	3.7780	
	Upper Bound	3.9507	
	5% Trimmed Mean	3.8836	
	Median	4.0000	
	Variance	.442	
	Std. Deviation	.66480	
	Minimum	1.80	
	Maximum	5.00	
	Range	3.20	
	Interquartile Range	.80	
	Skewness	-.402	.160
	Kurtosis	.028	.320

The skewness value is used to measure the Z-score, as shown in Table 4.7. As a result, the statistical value is divided by the standard error. The value and estimation of the Z-score are shown in the following calculation.

$$Z\text{-score} = \text{Statistics (skewness)} / \text{Standard Error (skewness)}$$

$$Z\text{-score} = -.402 / .160$$

$$Z\text{-score} = -2.5125$$

Since the study’s sample size exceeds 200, the Z-score value should be between -3.29 and 3.29 [43]. The -2.5125 found between them is obtained using the above formula. As a result, in terms of skewness, it resembles a normal distribution and allows continued to the next step of research.

V. DISCUSSION AND CONCLUSION

5.1 To Find the Relationship between Information Quality and Quality of Online Food Delivery Services

The main research objective of this project is to find the relationship between information quality and the quality of online food delivery services. According to the result, the hypothesis that indicates a positive relationship between information quality and the quality of online food delivery services is accepted. According to Lee et al. [37], information quality plays a crucial role in affecting the quality of online food delivery services. It concludes that there is a direct significant relationship between information quality and the quality of online food delivery services. According to quantitative research by Ray and Bala [7], good quality information will provide good value to consumers. The research indicates that there is a positive relationship between information quality and quality of online food delivery services due to good quality of information enhancing the quality of online food delivery services.

5.2 To Find the Relationship between Privacy and Security and Quality of Online Food Delivery Services

The fundamental research objective of this research is to find the relationship between privacy and security and the quality

of online food delivery services. According to Prasetyo et al. [44], privacy and security is a key factor that makes consumers have the intention to use a service. Therefore, it is deduced that there is a positive correlation between privacy and security and the quality of online food delivery services. Based on findings of qualitative research of Chai and Yat [45], it revealed that consumers perceive privacy and security has a greater impact on the quality of online food delivery services. Therefore, the researchers concluded that there is a direct significant relationship.

5.3 To Find the Relationship between Time Saving Orientation and Quality of Online Food Delivery Services

The main research objective of this research is to find the relationship between time-saving orientation and the quality of online food delivery services. According to Duarte et al. [46], time-saving orientation leads to better customer satisfaction. The research also indicates that time-saving will contribute to high satisfaction to consumers and then influence the quality of services. Therefore, the research signifies that there is a positive correlation between time-saving orientation and the quality of online food delivery services. Based on a quantitative study of Yeo et al. [1], time-saving orientation is an important factor that influences the quality of online food delivery services today. The research proved that there is a direct significant relation between time-saving orientation and the quality of online food delivery services.

5.4 To Find the Relationship between Price Saving Orientation and Quality of Online Food Delivery Services

The research objective of this research aims to find the relationship between price-saving orientation and the quality of online food delivery services. The idea that there is a link between price-saving orientation and the quality of online meal delivery services is refuted based on the findings of this study. Price saving orientation is not significantly associated with the quality of online food delivery services, according to Ray et al. [7] research, and so determined that price saving orientation is not significantly associated with the quality of online food delivery services.

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