

Factors Affecting Customer Satisfaction with Online Food Delivery Application During the COVID-19 Outbreak in Bangkok: A Case Study of Top Three Applications

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Received: March 2022;

Revised: May 2022;

Accepted: May 2022

Abstract

This research aimed to determine the factors that affect customer satisfaction with online food delivery application (OFDA) during the COVID-19 outbreak in Bangkok, which study the top three applications. The sample estimate of 434 respondents was drawn from an online questionnaire using non-probability sampling, which is a method that involves non-random selection based on convenience and ease of data collection. The respondents will be screened based on the research objective so that the sampling will be accessible. After compiling the data, it used Multiple Linear Regression to analyze, prove, and indicate hypotheses' relevance. This research found that environmental quality, convenience motivation, perceived price, promotion and discount, online tracking, and transaction significantly affected online food delivery applications during the COVID-19 outbreak in Bangkok. Moreover, the researcher should examine specific online food delivery applications (OFDA) to identify customer satisfaction clearly, and issues with each specific online food delivery application (OFDA) since the summary from this research may be known only from customers' perspective in Bangkok.

Keywords – Online Food Delivery Application, Customer Satisfaction, Outcome Quality, Interaction Quality, Promotion and Discount

JEL Classification Code: M10, M31, M39

1. Introduction¹²

The world is now standing in a staggering position as the notorious pandemic or what commonly known as COVID-19 has posed a severe outbreak, resulting in multiple safety measures including boundary lockdown to be implemented. Evidently, not only this action has interfered with people's daily routine, but also negatively impacted business as a whole, especially the restaurant and catering industry which are facing an intense havoc. Customers are no longer allowed to have a meal at restaurants as the strict

regulations have been enforced, causing the industry to be in an alarming situation. With the development of technology and adaptation of humanity, however, this distressing industry has been granted a chance to be recovered by the use of an O2O platform (online to offline) in which introducing users to the OFD services (online food delivering) afterwards. OFD services market has raised a high acceleration in the nutrition sector, with sales in Southeast Asia set to reach \$956 million US dollars in 2022 and it is predicted to reach 182.327 billion US dollars by 2024, with a 7.5 percent growth rate (Kok & Kim, 2021).

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As the government encourages social distancing policy and prohibits eating out during the COVID-19 outbreak, the rise of OFDA services has skyrocketed. In Thailand, people are offered with countless food offering service platforms and many more to be occasionally launched. Among all of these, FoodPanda, LineMan and GrabFood show the most competitive challenge with their services available around every corner in the country (Liu, 2019). Each of which mentioned above provides their own uniqueness in strength and weakness to stand out in the competitive market. For instance, FoodPanda owns its brand awareness across the world and the delivery fee quite cheaper than competitors but holds low customers base in Thailand and service area limited while LineMan is unlimited service area among the three applications and possesses a potential number of customers but is limited its soaring growth with the highest delivery fee among the three. GrabFood may be known for its fast delivery service and strong technology support, however, their choice of restaurants offered to users is restricted. Nevertheless, the OFDA service with its only sole existence cannot survive in this aggressive market, therefore customer satisfaction is considered a vital factor that keeps the service at a rapid pace. This study identifies the factors affecting customer satisfaction with online food delivery applications during the COVID-19 outbreak in Bangkok with the selection of FoodPanda, LineMan and GrabFood as case models. Therefore, the objectives in this study aim:

- 1) To explain outcome quality and customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.
- 2) To describe environment quality and customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.
- 3) To explicate interaction quality and customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.
- 4) To examine convenience motivation and customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.
- 5) To identify perceived price and customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.
- 6) To describe promotion and discount and customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.

7) To explain online review and customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.

8) To explicate online tracking and customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.

9) To examine transaction and customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.

2. Literature Review and Hypotheses Development

2.1 Customer Satisfaction and Outcome Quality

The outcome quality is regarded as information quality and design provided by the OFDA apps. By the information quality, Pal et al. (2019) defines it as accuracy, details, timeliness, and validity of the information exposed to the users of an app. Evidently, Rita et al. (2019) prove the point that succeeding in providing the availability of relevant, accurate, and timely information helps in increasing the overall trust in online shopping and enhances the user satisfaction. It is also suggested that the relevancy and amount of information available from an app influences the engagement of the users with the mobile apps (Peters et al., 2016; Bisen & Nuangjamnong, 2021; Chen & Nuangjamnong, 2022; Munamba & Nuangjamnong, 2021). In summarize, giving the right type of detail and the simplicity of outcome and accessing the data will positively impact the consumers' satisfaction, loyalty and purchasing decisions.

Hypothesis 1: The outcome quality influences customer satisfaction with online food delivery application.

2.2 Customer Satisfaction and Environment Quality

Environment quality can be depicted as a structural layout and contents of an app. Regarding Brady and Cronin (2001) and Nah et al. (2011) the requirement from the consumers during the service delivery process is essential since services are viewed as intangible. Any layout and contents claim a huge influence on the consumers perception of overall service quality. For an OFDA, user-friendly apps that provide a direct navigation design, saving time and effort in searching for necessary information are preferred by the customer (Jung, 2017; Tan et al.,

2018). The users always prefer an undisturbed experience with their OFDA apps that is expected to improve their satisfaction and loyalty toward these apps. This sort of simplicity and time saving experience project a positive effect on the user satisfaction and loyalty (Lien et al., 2017; Wang et al., 2019).

Hypothesis 2: *The environment quality influences customer satisfaction with online food delivery application.*

2.3 Customer Satisfaction and Interaction Quality

Interaction quality or visual design is considered as a decoration in which it determines and brings customers to the doorstep. The design of the visual contains both glare and touch of the interface of the mobile app, fonts and color used, etc. (Chaouali et al., 2020). According to Wang and Li (2017), smartphone apps owning icons with high colorfulness, user-friendly features, and good aesthetics lead to more downloads along with a greater user satisfaction. The visual design plays a significant role not only on customer purchase decision and experience but also on customer's brand loyalty. Also, Cheung et al. (2015) agree that better visual designs with an app brings a more engaging user experience. Visual design turns into the most important attribute as it is the first impression of an app.

Hypothesis 3: *The interaction quality influences of customer satisfaction with online food delivery application.*

2.4 Customer Satisfaction and Convenience Motivation

During the pandemic, dining out is discouraged in which it can irritate people sometimes as their choice of food is limited. In order to handle the situation, they shortcut to OFDA in hope to reach for their desired food. Verma et al. (2009) state that Customers are more likely to be interested in utilizing online meal delivery applications if they believe they would save them time. Furthermore, clients prefer online meal delivery because of the speed, accuracy of the ordering procedure, and ease. Consumers have a favorable view about online meal delivery, according to a survey, because it may save them time (Yeo et al., 2017). According to Kalimuthu and Sabari (2020),

convenience regarding time-saving is a determination of customer satisfaction towards online food delivery services. Convenience motivation can positively influence customer satisfaction as convenience can increase customer pleasure for using the mobile meal delivery apps (Yeo et al., 2017).

Hypothesis 4: *The convenience motivation influences customer satisfaction with online food delivery application.*

2.5 Customer Satisfaction and Perceived Price

Reasonable price setting directly influences customer satisfaction. The choice of product or service can be indicated by the price. According to Al-Msallam (2015) customers always measure the value of a product or service based on their prices, therefore price plays a crucial factor in creating consumer satisfaction. Also, Susanti (2019) claims that as consumers always evaluate the value of service or product given at the price they paid, price is viewed as an important factor in determining customer satisfaction. In case the perceived price shows an unfair number, a brand abandonment or brand switching may be made by the customers themselves. Another research by Rothenberger (2015) shows that in order to evaluate customer satisfaction and receive customer loyalty, creating a perceived price fairness is considered an effective way.

Hypothesis 5: *The perceived price influences customer satisfaction with online food delivery application.*

2.6 Customer Satisfaction and Promotion and Discount

Promotion & discount is another effective marketing tool that attracts customers and increases the service revenue. Neha and Manoj (2013) state that consumers attempting to change brand, increase purchases, and overspend product or service can be influenced by the perks of sale promotions and discount activities. Discount is claimed to be the most effective and stimulating technique that directly impacts consumer's purchase decision. A research revealed by Pi and Huang (2011) displays that a service can be able to maintain customer loyalty by improving consumer satisfaction, trust and commitment through promotion technique. Another research by Nakarmi (2018) indicates that customer satisfaction is directly affected by price discounts,

coupons, free samples and “buy one get one free” sort of promotion. It can be summarized that promotion tools can improve sales volume by increasing consumer’s purchase behavior.

***Hypothesis 6:** The promotion and discount influence customer satisfaction with online food delivery application.*

2.7 Customer Satisfaction and Online Review

Online review resembles a guidance of quality and outcome for customers to certain products or services, therefore this factor heavily impacts the evaluation of customer towards their desire. The impact of online reviews indeed has an impact on companies’ revenues (Chevalier & Mayzlin, 2006; Zhou & Duan, 2016). Also, the market research shows that 90 percent of buyers will read reviews from internet, and 88 percent consider them to be individual suggestions (Zhang et al., 2010). Other researches claims that once the effects of online reviews are being overlooked, the sellers may be led to an unexpected online shopping and revenue procedures and consequences (Sun et al., 2010; Chanthasaksathian & Nuangjamnong, 2021; Khanijoh et al., 2020; Mitchev & Nuangjamnong, 2021).

***Hypothesis 7:** The online review influences customer satisfaction with online food delivery application.*

2.8 Customer Satisfaction and Online Tracking

An OFDA offers users location-based services in order to allow users to get information about the known location of the delivery process (Shugan, 2004). Customers may be more inclined to use online meal apps in the upcoming as a result of the

availability of such novel features Alalwan (2020) implies that the system of online tracking is capable of increasing the experience of consumer’s spending by developing it to be more enjoyable, pleasing, and productive. For novel features OFDA similarly save the time of customer effort while it comes to ordering food. An online tracking can guide the consumer’s order at all steps regarding the how-to process and navigate till they are completely satisfied with the order’s status; the product or service has been completed.

***Hypothesis 8:** The online tracking influences customer satisfaction with online food delivery application.*

2.9 Customer Satisfaction and Transaction

An OFDA offers a transaction process among restaurants and customers regardless of place and time through the mobile phone. In the usage of meal delivery mobile apps, transaction truthfulness can contribute to customer satisfaction (AHN, 2019). An OFDA’s transaction process should show an expected delivery or pick-up time while displaying a quick response time feature, efficient, clear, and quick response time feature. Each step of the transaction activity would be clearly identified to customers and response time on each step should pleasurable. To clarify, relevancy and precision of ordering change, payments, returns, order processing, and canceling are factors that can influence customer fulfillment (Kim et al., 2017). It has been approved by Loiacono et al. (2002) that interactive responsiveness, promptness of online processing and website quality to consumer inquiries are recognized while essential quality.

***Hypothesis 9:** The transaction influences customer satisfaction with online food delivery application.*

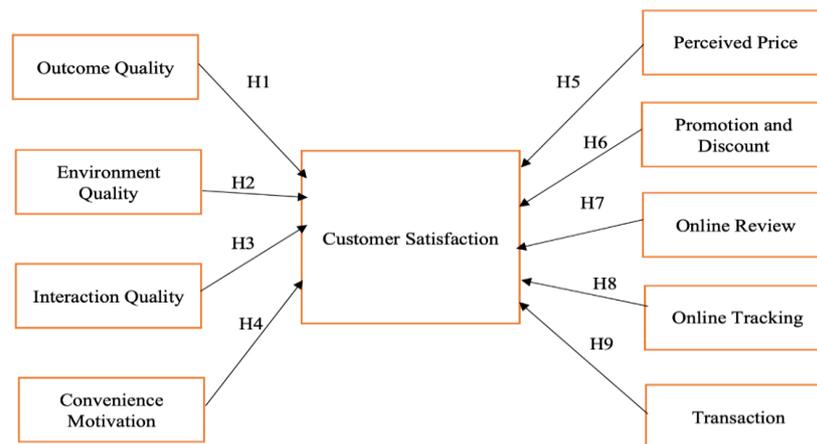


Figure 1. the Conceptual Framework

Source. Authors

3. Methods and Materials

The researcher used a non-probability sampling technique in this research, which is a method that involves non-random selection based on convenience and ease of data collection. The researcher chooses convenience sampling and snowball sampling methods to collect information because the respondents will be screened primarily based on the research objective, so the sampling will be accessible. The questionnaire is composed of 3 parts with 51 questions. The first portion is the screening questions that will only allow Thai nationality respondents who live in Bangkok during COVID-19 outbreak and ever used a smartphone to order food from online food delivery application (FoodPanda, LineMan and GrabFood) during COVID-19 outbreak in Bangkok. The second portion is the questions on demographic information of respondents. The last portion is the questions of dependent and independent variables. According to Statista the population of Bangkok, Thailand in 2021 will be approximately 10.7 million people. (As of the 11th of October, 2021.)

Unfortunately, the researcher was unable to ensure the target population of Bangkok residents who are currently utilizing online food delivery application. Therefore, the researcher used target population as unknown. The formula by Cochran (1977) for calculating sampling size of respondents due to this formula being used to calculate the sample size that does not know the number of populations. To determine the necessary survey size for an unknown population with a 95% confidence level, 50% standard deviation, a 5% margin of error. Below is the formula used for calculating sample size. The researcher determines to conduct a pilot test of 75 respondents to find out any inconsistencies or errors of variables in the questionnaire. Cronbach's Alpha test of Reliability is used to evaluate and analyze the reliability of questionnaires. Furthermore, Cronbach's Alpha and Internal Consistency's Rules determined the strength of the connection as follows: > 0.9 Excellent; > 0.8 Good; > 0.7 Acceptable; > 0.6 Questionable; > 0.5 Poor; and 0.5 Unacceptable (Cronbach, 1951). Cronbach's Alpha values were found as a consequence of this study's investigation. Data can be shown in table 1.

Table 1. Pre-test results by Reliability Test (Cronbach's Alpha)

Variables	Number of Items	Cronbach's Alpha	Strength of Association
Interaction Quality	4	0.948	Excellent
Customer Satisfaction	5	0.939	Excellent
Convenience Motivation	3	0.895	Good
Promotion and Discount	4	0.878	Good
Perceived Price	4	0.867	Good
Outcome Quality	4	0.836	Good
Transaction	5	0.833	Good
Environment Quality	5	0.827	Good

Online Review	3	0.808	Good
Online Tracking	4	0.730	Acceptable

Note. n= 75

4. Results

4.1 Descriptive for demographic factors

The researcher analyzed the demographic data by using descriptive analysis in the SPSS software of the 434 respondents who are live in Bangkok during COVID-19 outbreak and have ever used smartphone to order any food from online food delivery application (FoodPanda, LineMan and GrabFood) during COVID-19 outbreak. The demographic information such as gender, age, level of education, status, occupation, the preference of online food delivery application, and income per month with this information. The information of the statistical as below.

Gender; female respondents accounted for 70.7 percent of the total 434 respondents, which is greater than male respondents who accounted for 29.3 percent. The total number of female and male responses is 307 and 127, respectively.

Age; respondents aged 25 to 35 years old have the highest percentage of 49.5 percent in this study, followed by respondents aged less than 25 years old who have 161 respondents with 37.1 percent, 35 respondents aged 36 to 45 years old with 8.1 percent, 19 respondents aged 46 to 55 years old with 4.4 percent, and respondents aged over 55 years old with 0.9 percent with 4 respondents.

Education Level; 273 respondents (62.9%) have completed a bachelor’s degree, followed by 109 respondents (25.1%) who have completed a master’s degree, 44 respondents (10.1%) who have completed high school, 7 respondents (1.6%) who have completed a Ph.D. or higher, and 1 respondent (0.2%) who has completed an educational level lower than high school.

Status; most respondents in this survey have a single with 288 with 66.4%, followed by 136 respondents with 31.3% have a married, 6 respondents

with 1.4% have a divorced, and 4 respondents with 0.9% have windowed.

Occupation; among all 434 respondents, 133 respondents with 30.6% are employee, followed by 129 respondents with 29.7 are student, 90 respondents with 20.7% are freelance, 55 respondents with the percentage of 12.7 are business owner, 14 respondents with 3.2% are teacher and professor, and 13 respondents with the percentage of 3 are other occupation.

Application; the application which respondents like to order from online food delivery the most is Lineman with 193 respondents with the percentage of 44.5, followed by GrabFood with 180 respondents with 41.5%, and FoodPanda with 61 respondents with 14.1%.

Income per month; the majority of respondents in this survey earn between 20,001 and 50,000 baht per month, with 205 respondents accounting for 47.2 percent, followed by 132 respondents accounting for 30.4 percent who earn less than 20,000 baht per month, 73 respondents accounting for 16.8 percent who earn between 50,001 and 100,000 baht per month, and 24 respondents accounting for 5.5 percent who earn over 100,000 baht per month.

4.2 Descriptive Analysis with Mean and Standard Deviation

The descriptive analysis of the mean and standard deviation of the dependent and independent variables, which also defines the content of the mean of the variables, determines the average score of all variables. The Likert 5-point scale is used to evaluate all of the outcomes. The “Strongly Agree” interpretation of the mean score criteria is 4.51–5.00. 3.51–4.50 represents “Agree,” 2.51–3.50 represents “Neutral,” 1.51–2.50 represents “Disagree,” and 1.00–1.50 represents “Strongly Disagree.” In the table 2 below, the average score is split down into questions.

Table 2. The outcome of Mean and Standard Deviation

Outcome Quality	Mean	Std. Deviation
OQ1: The online food delivery application gives me exact food nutrition details, delivery details, and payment details.	4.51	0.714
OQ2: The online food delivery application gives me the information which I would like to know (e.g. delivery distance, driver information, and arrival time.)	4.47	0.723

OQ3: The online food delivery application provides clearly detailed information about the restaurant where I place the order (e.g. distance from the restaurant).	4.58*	0.644
OQ4: The online food delivery application contains and updates the contact details of all listed restaurants.	4.48	0.720
Environment Quality		
EQ1: The online food delivery application has a feature for searching the information.	4.51	0.677
EQ2: It is quite easy to make payment on an online food delivery application after placing the order.	4.60*	0.627
EQ3: The online food delivery application shows the food which is added into the cart until the final stage.	4.52	0.666
EQ4: The online food delivery application has a key search feature.	4.53	0.693
EQ5: The step of looking for the restaurant, ordering the food, and making payment is easy for me.	4.44	0.783
Interaction Quality		
IQ1: The online food delivery application has an attractive design.	4.44	0.724
IQ2: The front and color on the online food delivery application was appealing to me.	4.41	0.773
IQ3: The design of online food delivery application is quite professional.	4.53*	0.710
IQ4: Overall, the online food delivery application makes me impress.	4.47	0.720
Convenience Motivation		
CM1: The online food delivery application is easy to order.	4.48	0.739
CM2: The online food delivery application can save my time.	4.49*	0.690
CM3: The online food delivery application provides necessary dining utensils.	4.45	0.722
Perceived Price		
PP1: The online food delivery application is at an acceptable price.	4.46	0.719
PP2: I am happy with the delivery fee from the online food delivery application.	4.48	0.772
PP3: I can find the cheaper price of food than restaurants from online food delivery application.	4.47	0.719
PP4: Ordering food from an online food delivery application is worth the money I pay.	4.53*	0.687
Promotion and Discount		
PD1: The promotion from online food delivery application can attract new customers and keep customers.	4.43	0.802
PD2: The online food delivery application always provides the promotion and discount for customers.	4.47*	0.751
PD3: The online food delivery application always motivates and attracts me to order from promotion and discount.	4.43	0.802
PD4: The promotion and discount from online food delivery application can attract the specific online food delivery application.	4.43	0.807
Online Review		
OR1: I can reliable online reviews from online food delivery application.	4.39	0.837
OR2: The information from online reviews is quite benefit to me.	4.49*	0.700
OR3: I can decide to order an online food delivery application from online reviews.	4.42	0.780
Online Tracking		
OT1: Tracking system from online food delivery application quite accurate and reliable.	4.46	0.696
OT2: Tracking system helps me to save my time as I can check when my order will arrive.	4.44	0.743
OT3: Tracking system can help me to save cost as I can check my order through online food delivery application without calling to ask my order.	4.55*	0.629
OT4: Tracking system on online food delivery application always updates my order from start until completed.	4.49	0.646

Transaction		
T1: Online food delivery application offers a variety of payment methods.	4.55	0.633
T2: Transaction on online food delivery application quite safe for me.	4.51	0.649
T3: It is quite easy to know the steps of transaction process I do.	4.56*	0.632
T4: I was satisfied with the transaction from beginning to finish the process on the online food delivery application.	4.53	0.638
T5: Transaction on online food delivery application is easy to understand and clear.	4.48	0.742
Customer Satisfaction		
CS1: I am satisfied with ordering food from an online food delivery application.	4.54	0.619
CS2: I need to invite my friends and other people to order food from an online food delivery application.	4.50	0.656
CS3: I am satisfied with the services of online food delivery application.	4.46	0.690
CS4: Online food delivery application is easy to use and order.	4.53	0.663
CS5: I am happy to order food delivery application.	4.57*	0.601

Note. * the highest mean

Table 2 shows the means of each variable's question items. The question with the greatest mean for outcome quality was "The online food delivery application provides clearly detailed information about the restaurant where I place the order (e.g. distance from the restaurant)" which equals 4.58. For that the greatest mean of Environment Quality was "It is quite easy to payment on online food delivery application after placing the order" which is equals 4.60. Also, that the greatest mean Interaction Quality was "The design of online food delivery application is quite professional" which is equals 4.53. Moreover, Convenience Motivation was "The online food delivery application can save my time" which is equals 4.49. And, the greatest mean of Perceived Price was "Ordering food from online food delivery application is worth the money I pay" which is equals 4.53. For the greatest mean of Promotion and Discount was "The promotion from online food delivery application can attract new customers and keep customers" which is equals 4.47. Besides, the greatest average of Online Review was "The information from online reviews is quite benefit to me" which is equals 4.49. Next, the greatest mean of Online Tracking was "Tracking system can help me to save cost as I can check my order through online food delivery application without calling to ask my order" which is equals 4.55. Then, that the greatest average of transaction was "It is quite easy to know the steps of transaction process I do" which is equals 4.56. The last question with the highest mean of Customer Satisfaction was "I am happy to order food delivery application" which is equals 4.57.

4.3 Hypothesis Testing Results

H₁ in the Table 3, the significant level was at 0.774, which was greater than 0.05 and the null

hypothesis was failed to reject, and it can be determined that outcome quality has no significance effect on customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.

H₂ in the Table 3, the significant level was at 0.002, which was below 0.05 and the null hypothesis was rejected, and it can be determined that environment quality has a significant effect on customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok. Moreover, the standardized coefficient (β) of environment quality is 0.136. It can imply that if environment quality increases 1%, the customer satisfaction can be raised by 13.6%.

H₃ in the Table 3, the significant level is 0.749, which was greater than 0.05 and the null hypothesis was failed to reject, and it can be determined that interaction quality has no significance effect on customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.

H₄ in the Table 3, the significant level is 0.005, which was below 0.05 and the null hypothesis was rejected, and it can be determined that convenience motivation has a significant effect on customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok. Moreover, the standardized coefficient (β) of convenience motivation is 0.126. It can imply that if convenience motivation increases 1%, the customer satisfaction can be raised by 12.6%.

H₅ in the Table 3, the significant level is 0.043, which was below 0.05 and the null hypothesis was rejected, and it can be determined that perceived price has a significant effect on customer satisfaction with

online food delivery application during the COVID-19 outbreak in Bangkok. Moreover, the standardized coefficient (β) of perceived price is 0.104. It can imply that if perceived price increases 1%, the customer satisfaction can be raised by 10.4%.

H₆ in the Table 3, shows the significant level is <0.001, which was below 0.05 and the null hypothesis was rejected, and it can be determined that promotion and discount have a significant effect on customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok. Moreover, the standardized coefficient (β) of promotion and discount is -0.153. It can imply that if promotion and discount increase 1%, the customer satisfaction can be down by 15.3%.

H₇ in the Table 3, the significant level is 0.722, which was greater than 0.05 and the null hypothesis was failed to reject, and it can be determined that online review has no significance effect on customer

satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok.

H₈ in the Table 3, the significant level is <0.001, which was below 0.05 and the null hypothesis was rejected, and it can be determined that online tracking has a significant effect on customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok. Moreover, the standardized coefficient (β) of online tracking is 0.383. It can imply that if online tracking increases 1%, the customer satisfaction can be raised by 38.3%.

H₉ in the Table 3, shows the significant level is <0.001, which was below 0.05 and the null hypothesis was rejected, and it can be determined that transaction has a significant effect on customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok. Moreover, the standardized coefficient (β) of transaction is 0.376. It can imply that if transaction increases 1%, the customer satisfaction can be raised by 37.6%.

Table 3. Summary of multiple linear regression

Hypotheses	Variables	B	SE B	β	t-value	p-value	VIF	Result
H ₁	Outcome Quality	0.013	0.046	0.014	0.287	0.774	4.782	Not supported
H ₂	Environment Quality	0.134	0.044	0.136	3.069	0.002*	4.087	Supported
H ₃	Interaction Quality	-0.014	0.044	-0.016	-0.320	0.749	5.318	Not supported
H ₄	Convenience Motivation	0.113	0.040	0.126	2.825	0.005*	4.181	Supported
H ₅	Perceived Price	0.095	0.047	0.104	2.032	0.043*	5.497	Supported
H ₆	Promotion and Discount	-0.124	0.037	-0.153	-3.352	<0.001*	4.355	Supported
H ₇	Online Review	0.013	0.035	0.015	0.356	0.722	3.934	Not supported
H ₈	Online Tracking	0.373	0.041	0.383	9.122	<0.001*	3.698	Supported
H ₉	Transaction	0.389	0.042	0.376	9.312	<0.001*	3.414	Supported

Note. *p-value < 0.05. Dependent Variable = Customer Satisfaction

4.4 The Results of Structural Model

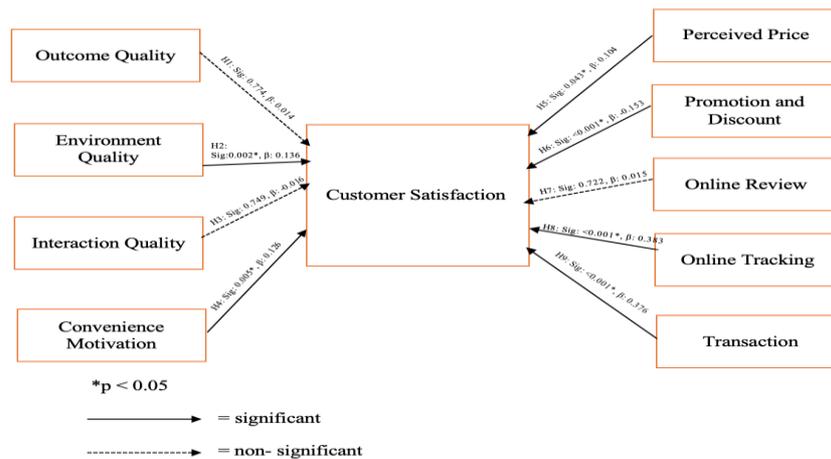


Figure 2. The structural model's result

5. Discussion and Conclusion

This study is based on a research objective which is to precisely examine those relations affecting variables of customer satisfaction. The related factors in the research are outcome quality, environment quality, interaction quality, convenience motivation, perceived price, promotion and discount, online review, online tracking, and transaction. The information will be explained as below.

5.1 Outcome quality and customer satisfaction

The findings in this research revealed that there is no significance between outcome quality and customer satisfaction as the null hypothesis of H_1 resulting failed to reject. This is aligned with the study by Bagozzi (1992), it said that the effect of the variable for experience quality on customer satisfaction was insignificant. And experience quality is often synonymously defined as outcome quality in many articles. Aside from that (Tam and Oliveira (2017) , Roy (2018), Jin et al, (2013) discovered that outcome quality does not appear to have an important direct effect on customer pleasure, from study's findings show that if the customer's perception is based on their experience, the customer will also feel satisfied. However, studies by Zhao et al. (2012) have found the positive impact on customer satisfaction that outcome quality is the practical quality associated with the satisfaction of desires while using a smartphone app, which can bring to an impression of the experience.

5.2 Environment quality and customer satisfaction

The findings in this research revealed that there is significance between environment quality and customer satisfaction as the alternative hypothesis of H_2 resulting were rejected. This is aligned with the study by Zhao et al. (2012) that the consumers' appraisal of physical features of where the service is given, containing the quality of the instruments involved and the quality of the performance, is referred to as environment quality. Moreover, the extant research from Brady and Cronin (2001), Nah and DeWester (2011) also mentioned that because services are not tangible and want the presence of customers through the delivery process, the environment has an important influence on customer satisfaction.

5.3 Interaction quality and customer satisfaction

The findings in this research revealed that there is no significance between interaction quality and customer satisfaction as the null hypothesis of H_3 resulting failed to reject. The researcher cannot find the article aligned. There may be insufficient data and respondents were not interested about interaction quality because respondents were more concerned about safety during COVID-19 outbreak because respondents might think that interaction quality was not necessary to order online food delivery application in this period but this research was conducted to study during COVID-19 outbreak. However, the study by Wang and Li (2017) have found the positive impact on customer satisfaction that the general feel and look on the mobile application interface, as well as the fronts and colors used, are all part of the visual design. Smartphone applications with icons that are brightly colored, sophisticated, and appealing to the eye result in more downloads and higher customer satisfaction.

5.4 Convenience motivation and customer satisfaction

The findings in this research revealed that there is significance between convenience motivation and customer satisfaction as the alternative hypothesis of H_4 resulting were rejected. This is aligned with the study by Yeo et al. (2017) finding the relationship between convenience motivation and customer satisfaction was found to be beneficial. Furthermore, according to (Anderson and Srinivasan (2003), convenience motivation, which falls under individual level factors, is capable of positively facilitating the relationship between e-satisfaction and e-loyalty. To demonstrate, convenience motivation has a positive impact on customer satisfaction.

5.5 Perceived price and customer satisfaction

The findings in this research revealed that there is significance between perceived price and customer satisfaction as the alternative hypothesis of H_5 resulting rejected. This is aligned with the study by (Caruana et al. (2000), which discovered that perceived price plays a significant moderating role in the relationship between satisfaction and quality of service. In addition, the interplay of service quality and perceived price predicted greater variation in satisfaction than either perceived price or quality of service alone. Price and worth, according to many academics, are inextricably related. Besides that, Bloemer et al. (1998), Chanthasaksathian and Nuangjamnong, 2021; Khanijoh et al., 2020; Mitchev and Nuangjamnong, 2021) discovered that higher

levels of service quality led to higher levels of satisfaction, and that poor perceived quality might lead to high levels of service satisfaction. Customers may not always purchase the greatest degree of service quality. That is convenience, availability, and price may boost consumer happiness while having no influence on service quality perceptions.

5.6 Promotion and discount and customer satisfaction

The findings in this research revealed that there is significance between promotion and discount and customer satisfaction as the alternative hypothesis of H_6 resulting rejected. This is aligned with the study by Alalwan (2020), Kalimuthu et al. (2020) found that monetary incentives such as discounts and special promotions are the important factors of customer satisfaction towards online meal delivery facilities. Moreover, the research by Nakarmi (2018) shows that the customers are very satisfied with coupon, price reduction, buy one get one free offer, and free samples. So, promotion and discount techniques will boost sales.

5.7 Online review and customer satisfaction

The findings in this research revealed that there is no significance between online review and customer satisfaction as the null hypothesis of H_7 resulting failed to reject. This is aligned with the study by (Sprague & Wells, 2010), as the study has mentioned the notoriety of the existence of fake online review. To explain, online review cannot be one of determinant factors when it comes to customer satisfaction. In contrast, genuine online review serves as a determinant factor towards a positive and significant relationship with customer satisfaction. However, the study by Sun et al. (2020) have found the positive impact on customer satisfaction that the absence of hands-on product experience before to purchase raises the chance of disappointment and leads to high consumer return rates. When it came to purchasing selections, customers relied significantly on online reviews.

5.8 Online tracking and customer satisfaction

The findings in this research revealed that there is significance between online tracking and customer satisfaction as the alternative hypothesis of H_8 resulting rejected. This is aligned with the study by Alalwan (2020), the researcher analyzed the customer's e-satisfaction and purpose to reuse mobile food ordering apps and discovered that one of the new

variables, online tracking, could predict customer satisfaction. Nonetheless, along with the study of Yeo et al. (2017), as consumers can find their familiarity with applications more pleasurable and fulfilling if they are offered more visible and imaginative ways to track their orders.

5.9 Transaction and customer satisfaction

The findings in this research revealed that there is significance between transaction and customer satisfaction as the alternative hypothesis of H_9 resulting rejected. This is aligned with the study by Jung (2017), Tan et al. (2020), it stated that in an online setting, consumers prefer apps that are simple and have a direct navigation design, allowing for time and effort savings in finding relevant information. It also aids in completing the transaction in the fewest number of steps possible. According to the findings of Lien et al. (2017), Wang et al. (2019), such a transaction-related experience has a positive effect on user satisfaction.

6. Suggestions and Recommendations

According to the conclusion, the result of this research demonstrates that there are six factors which significant effect on customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok. The related factors in this research; environment quality, convenience motivation, perceived price, promotion and discount, online tracking, and transaction. Whereas, online tracking has strongly significant affecting on customer satisfaction and promotion and discount has weakly significant affecting on customer satisfaction.

As a result, online food delivery application (OFDA) has many things to improve to increase customer satisfaction, which has a positive effect on the companies and customers when using OFDA.

For the environment quality, the online food delivery application companies should make all its apps smartphone enhanced and load just as well on any smartphone device as they can do the same as on a desktop. Additionally, while customers click into any OFDA, their gaze should naturally be drawn to the order button. There are only a few steps between there and placing an order. The main goal is to make the ordering process as simple and intuitive as possible in order to increase customer circulation. For example, a step-by-step tutorial for new users, no extra clicks, and

no hidden menu in the app's footer. Furthermore, the vast majority of customers are beginning to use social media to place their food orders. So, OFDA's marketing strategy should include major social media platforms such as Facebook. As such the platform allows customers to get the link and order directly from Facebook pages. Consequently, customers are able to enjoy a smooth and satisfying experience with OFDA.

For the convenience motivation, OFDA companies should pay close attention to the necessary add-ons. Customers may be extremely disappointed if they order French fries and discover that there is no ketchup available. The entire ordering and eating experience should be convenient and satisfying for customers. As a result, OFDA companies are advised to include a function that allows customers to request what they require from restaurants. For example, necessary dining utensils because some restaurants may forget to provide necessary dining utensils to customers, resulting in customer dissatisfaction. Furthermore, OFDA companies should standardize all orders by ensuring that necessary condiments, napkins, and tableware are provided.

For the perceived price, OFDA companies should standardize the price on OFDA with the price on the actual menu. To explain, the perceived price of customers can be described as the price on a normal menu at a restaurant. Customers are familiar with the price on the menu and willing to pay the price on it. So, once customers find out the price difference between the price on OFDA and the price on the menu, they will be unsatisfied with that. Therefore, the food price on OFDA should be the same as the one on the menu.

For the promotion and discount, OFDA companies should alter the conditions of promotion and discount. Owing to the marketing power of promotion and discount, it attracts a big number of customers. Therefore, every tiny condition serves as a crucial determinant towards every customer's perspective. Rules and conditions are recommended to be clearly written and should not be purposefully hidden. Moreover, OFDA companies should try to simplify all the rules and conditions regarding the use of promotion and discount. All of these play an important role in customer satisfaction.

For the online tracking, OFDA should provide customers with accurate order tracking information. It is critical to allow customers to track the entire delivery process and evaluate drivers' performance. It assists customers in understanding dispatch time,

tracks their delivery drivers, and analyzes the time it takes to deliver orders. Installing a GPS tracking system allows each OFDA to provide real-time delivery fleet data to improve customer service. To put it another way, increased productivity from route optimization and driver performance evaluation will allow OFDA to serve more customers in less time.

For the transaction, OFDA companies should make the transaction easier by introducing different payment methods. Customers nowadays, especially under the COVID-19 situation, want to pay for their food and have it delivered with as little interaction as feasible. As a result, OFDA companies should optimize its food delivery service by responding to customer needs and wants and introducing brand new items that will keep customers safe. For example, buyers can pay by using a variety of methods, including online, card, PromptPay, and other options, which eliminate the need for them to exchange unsanitary paper bills. In terms of fulfillment of orders, provide customers with options such as delivery with no touch, in which the delivery man can place the order in front of the customers' places and then goes, or pickup food in open area, such as at the curb or meeting outdoor. Accordingly, customers will feel more secure ordering from OFDA.

According to the results, the researcher studied of top three online food delivery applications. Foodpanda should find a way to increase its customers as Foodpanda is found to be the least used one by customers. Improving the application from what the researcher recommended above may be helpful for OFDA operators to increase its revenue and customer satisfaction. It is not only beneficial to Foodpanda but also to LineMan and GrabFood.

7. Further Study

Since this study focused on the factor affecting customer satisfaction with online food delivery application during the COVID-19 outbreak in Bangkok only due to limitation of time and pandemic of COVID-19 situation. For further study, there is a need for similar research that could determine other provinces which factors affect customer satisfaction and create the questions more clearly. Furthermore, further study should be conducted on a larger size of sample and population to increase reliability of the research. And, another study may be carried out to study the relationship between demographic characteristics and customer satisfaction in other

provinces. This may present better research and may gather different outcomes. Also, another study may examine specific online food delivery application to identify the customer satisfaction and issues with each specific online food delivery application clearly.

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