

The Role of E-S-Qual and Food Quality on Customer Satisfaction in Online Food Delivery Service

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ABSTRAK

This study plays a role in assessing the dimensions of E-S-Qual and Food quality to improve satisfaction and perceived value in online food delivery context (OFD). Data were collected from 405 sample of customers OFD service in Bandung and used to assess the SEM modeling. Moreover, the data, proposed model, and hypothesis were analyses used SmartPLS 3.0 software. This study indicates that food quality is the key aspect in assessing OFD service. Although the role of food quality has the most crucial aspect, OFD service providers still have to maintain their e-service quality in order to meet consumer expectations. Among E-S-Qual dimensions, fulfilment dimension is the most contribute to increased consumer satisfaction and perceived value in OFD service. In short, this study suggests OFD service providers to maximise food quality and fulfill customer promises.

Keywords:

OFD, E-S-Qual, Food Quality, Customer Satisfaction

1. BACKGROUND

Along with the development of information and communication technology, it will be followed by society change of lifestyle and development of economic sector [1]. In the digital era that supported by the community's ability to utilise the internet has resulted in a new business trend of e-commerce. The previous literature also argued that e-commerce activities encourage the development of business sector in developed and developing countries, including Indonesia [1]. Similarly to food industry context especially restaurant, the e-commerce platforms are utilised as an effective way of helping the overall service process, such as online food ordering and delivery facility (OFD).

There are two categories of OFD service providers: the restaurant itself and other provider multiple restaurant intermediaries [2]. Example of restaurants that provide their own OFD service are Domino's, McDonalds and KFC. While others provider of OFD services can be multi-restaurant applications or websites such as GoFood, GrabFood, Food Panda and Eat24. Thus, implementing an online food delivery service makes it possible to support service efficiency and expand the market [2]. Also, the convenient, quickness and accuracy during the ordering process are the reasons for customer decided to use online ordering facilities even though for restaurant manager the possibility of increasing revenue and minimizing errors in the order process online food delivery facility have a positive impact on restaurant to increasing efficiency, effectiveness and expand the market.

Based on the data, half of Indonesia population is recorded as internet users, at 50% penetration in January 2018 [3]. Although not all regions in Indonesia have access to high-speed internet, the number of internet users is increasing every year mainly in a big city. Since the number of internet user is increasing, it leads to the growth of trading activity based on online transactions. According to the survey conducted by We are social [3], there is an increasing number of online shopping transaction in one month from 2016-2018. Thus, those researches indicate the opportunities and challenges for businessman based online in Indonesia including OFD service. Moreover, the food delivery sector in Indonesia is expected to increase annually around 13%, then the food delivery sector reaches \$968 million for the revenue in 2018 [4]. OFD business involves not only a large restaurant but also small restaurants that can take advantage of web or application multi-restaurant as OFD partners. So, OFD service supported not only the big business but also the small business. Because of the penetration number and large OFD based multi restaurants sites or application

OFD service that classified as e-commerce activities cannot be separated from easy of finding alternative



Therefore, a manager must be understood that service quality has a substantial impact on customer satisfaction on company performance. Also, Oliver et al. [5] argued that the company could achieve competitive ability by providing excellent service to its customers. Thus, in order to meet consumer expectations of OFD service quality, then the manager needs to analyze consumer perceptions of e-service quality. The underlying characteristic of OFD service is this service provides tangible (food) and intangible product (service). Because of that, research of OFD service needs to discuss the role of both aspects tangible and intangible. Although the previous studies in a restaurant have proved the critical role of food quality (tangible) and service quality (intangible) in influencing customer satisfaction [6], the same concept is still not discussed in OFD context. Despite the importance of e-service quality and food quality, the literature regarding about the role of both variables in OFD service is still limited.

There are two objectives of this study: (1) to assess the direct influence of E-S-Qual and food quality on OFD consumer satisfaction, (2) to assess the direct influence of E-S-Qual and food quality on perceived value OFD.

2. LITERATURE REVIEW 2.1 Electronic Service Quality

E-service quality is a way of describing the effectiveness and efficiency of the website, from shopping to delivery [7]. Based on these definitions then e-service quality can be described as an assessment of web performance during the process before and after purchase. Santos [10] argues that if the company is committed to providing good eservice quality, then they will get long-term positive benefits. Therefore, the understanding of how consumers evaluate the online services is a fundamental aspect for the manager to understand, so that the company will be able to provide maximum service. The easiness to find information about a product and compare it with competitors caused the differentiation in online and offline businesses. In the end, consumers expect online companies to provide services that are more or equal to offline services [8]. Because of that, the topic of e-service quality is quite often analysed by researchers in order to help the e-commerce business.

Several studies on e-service quality dimensions have been done such as e-TailQ, WebQual, E-S-Qual, and E-ResS-QUAL. Parasuraman et al. [9] in his comprehensive study divided the e-service quality (E-S-Qual) and service recovery (E-ResS-QUAL). Based on the dimensions formed by the Parasurama [9], this study will focus on discussing E-S-Qual variables in OFD service because it can measure the pre-e-service and post e-service quality. E-S-Qual variables are formed based on four dimensions, namely fulfilment, efficiency, system availability and privacy. Moreover, another researcher also used these variable for assessing pure e-service contexts such as banking websites [10] and the literature concludes that E-S-Qual variables can be used to measure e-service quality. However, the author still has not found the E-S-Qual applications in context of OFD service.

2.2 Food Quality

Generally, food quality variables have become a fundamental part of the overall restaurant experience [6, 11]. The description of food quality concept is evaluating the quality of food before and after purchase [12]. Based on this understanding, then food quality can be described as an essential aspect that affects the consumer experience in buying food. Furthermore, previous studies have proved and supported the statement about food quality has an important role in the restaurant business [6, 11]. Moreover, the similar findings in context of tourism about the influence of quality of specialty food and food souvenirs showed a significant impact on consumer satisfaction [13, 14]. Although there are different concept and process between OFD, restaurant and food tourism, it is necessary to analyse how the role of food quality in the success of OFD business.

Chamhuri [12] said that consumer preferences in choosing food are based on several sensory characteristics such as taste and texture also nonsensory characteristics such as health, religion, and ethics. In certain cases, researchers sometimes add religious indicators in food quality variables, as Chamburi [12] used halal food indicator. Meanwhile, Namkung and Jang [15] conducted a review of previous literature on food quality, they conclude six items question about food quality that did not include religious indicators. That indicator consists of presentation, variety, healthier option, taste, freshness, and temperature.

2.3 Customer Satisfaction

Kotler [16] describes satisfaction as the result of an individual's judgment between expectations and perceived performance in a product or service, then the assessment can be either satisfaction or dissatisfaction. Also, Oliver [17] stated that



can be concluded that customer satisfaction is the positive or negative assessment of expectations and performance in the fulfilled state, which is an assessment of customer subjective. In the context of e-service, customer satisfaction can be achieved if the website delivers good service quality [18]. Therefore, consumer assessment of e-service quality is important for e-service provider because it can effect on consumer satisfaction. This study used two dimensions for measuring customer satisfaction that is overall customer satisfaction and confirmation of expectation. The previous study also used the same dimensions in context of web service quality.

2.4 Perceived Value

Based on the definition, perceived value can be described as the consumer rating on the value of what they give and what they get from the product or service [7]. According to Kotler [16], the value that exists in perceived value includes an economic point of view, quality, benefit and social psychology. While from an economic point of view, a positive perceived value will occur when consumers pay less but get good quality [19]. Generally, the online store has a lower price than the offline store because some costs can be eliminated. This study adapted perceived value variable from Bauer et al. [20] consist of overall convenience, cost-benefit ratio and reasonable price dimensions. Parasurama et al. [9] also used this dimension when testing the E-S-Qual variable.

3. RESEARCH MODEL AND HYPOTHESIS

This study aims to examine the indirect relationship of E-S-Qual and food quality on perceived value, in the context of OFD services. Another objective is to find out the direct relationship between E-S-Qual and food quality on customer satisfaction. Here is a model used in this study.

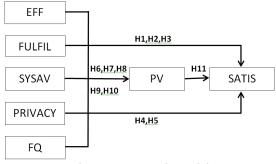


Figure 1. Research Model

3.1 E-S-Qual and Food Quality on Satisfaction Studies of service quality on customer satisfaction in offline and online service have been indicating Although in the internet context there are different attributes of e-service quality, the results indicate a positive impact on customer satisfaction [21, 22]. While in the foodservice industry previous research states the effect of food quality on consumer satisfaction in restaurants [15] because food is the primary product of this industry. Therefore, how the online business deliver they services and products as expected play a crucial influence on customer satisfaction or dissatisfaction. The following hypothesis is developed based on the above discussion:

- H1: Efficiency has a positive and significant impact on customer satisfaction in OFD context
- H2: Fulfillment has a positive and significant impact on customer satisfaction in OFD context
- H3: System availability has a positive and significant impact on customer satisfaction in OFD context
- H4: Privacy has a positive and significant impact on customer satisfaction in OFD context
- H5: Food quality has a positive and significant impact on customer satisfaction in OFD context

3.2 E-S-Qual and Food Quality on Perceived Value

Some literature indicates that service quality has a positive impact on customer perceived value in online shopping [21] [22]. The study conducted by Parasuraman et al. [9] measured the relationship between E-S-Qual with perceived value and loyalty. The results showed a positive relationship between the two variables. Then, the study has proven that by providing high service quality will be increasingly perceived value. While in food context, Ryu et al. [11] identified that food quality affected perceived product quality in restaurants. Therefore, one of the objectives in this study is to identify whether food quality has the same effect on customer perceived value in context of food delivery services. In this study, perceived value variables are used to evaluate the value of benefits from a consumer's point of view by finding the relationship between food quality and e-service quality with perceived value. The following hypothesis is developed based on above discussion:

- H6: Efficiency has a positive and significant impact on perceived value in context of OFD service
- H7: Fulfillment has a positive and significant impact on perceived value in OFD context
- H8: System availability has a positive and significant impact on perceived value in OFD context
- H9. Privacy has a nositive and significant impact on



- H10: Food quality has a positive and significant impact on perceived value in OFD context
- H11: Perceived value has a positive and significant impact on customer satisfaction in OFD context

4. RESEARCH METHOD

The data used in this study is the primary data obtained from the questionnaire. The assessment of customer satisfaction model in OFD service used items from E-S-Qual, food quality and perceived value. Each variable consists of 20, 6, and 3 question using five-point Likert scale (1 = strongly)agree and 5 = strongly disagree). Before distributing the questionnaire, it is necessary to have clarification and conformity each question by doing a pre-test to 20 respondent. The respondent's characteristics that fit with the research model and objective is the consumer who ever uses online food delivery service through web or application, especially located in Bandung. Because this study uses SEM-PLS, the minimum sample size should be ten times the number of instrument items used then the minimum sample is 310 respondents [23]. Another theory also said by using 5% margin of error then the sample ranges between 300-500 respondents [24]. In the end, the author collected 405 respondents used to test the research model.

5. DATA ANALYSIS

5.1 Description of the Respondent

The respondents who participated in this study should have used OFD service. According to the questionnaire that has been collected, the following table shows a detail demographic characteristic from 405 respondents.

respondents					
Variable	Description	Frequency	%		
Gender	Male	116	28,6		
	Female	289	71,4		
Age	17-20	116	28,6		
	21-30	271	66,9		
	31-40	11	2,7		
	Over 40	7	1,7		
Occupation	Student	10	2.5		
	University student	306	75.6		
	Worker	82	20.2		
	Housewife	2	0.5		
	Others	5	1.2		
Life with	Yes	309	76.3		
family	No	96	23.7		
Used Average	<2 / month	236	58.3		
_	3-5 / month	134	33.1		
	>5 / month	35	8.6		
Last order OFD	Multiple restaurant intermediaries	350	86.4		
010	OFD by restaurant itself	55	13.6		

5.2 Measurement Model

Validity test (convergent and discriminant) and reliability are the first steps should be done before testing the proposed model. First, the convergence validity test is done based on loading factor and average variance (AVE). According to table 2, it shows that all questions items are valid due to loading value bigger than 0.5 cut-off (significant p<0.1) [25] and AVE value bigger than 0.5 cut-off rate [23]. Second, the validity test of discriminant variable using monotrait-heterotrait ratio with overall value bigger than 0.9 [26]. Table 3 proves the validity of discriminant variable constructs. The third test about reliability construct used Cronbach alpha value with the cut-off level of 0.6 [23]. Because the test results have value above 0.6, then the reliability test succeeded. Then research can be processed to the next stage.

Table 2. L	oading of the	item m	neasurement mo	del,
	CD a		Г	

CR, and AVE						
Construct/item	Loading	Cronbach	CR	AVE		
		α				
Efficiency		0.892	0.917	0,649		
Easy to find what I	0.823					
need						
Easy to get	0.821					
anywhere on this						
site						
transaction	0.805					
completed quickly						
Information is	0.742					
informative						
Simple to use	0.842					
Well organized	0.799					
System Availability		0.824	0,881	0,649		
Always available	0.818					
for business						
It launches and	0.849					
runs right away						
Not crash	0.760					
Not buffering after	0.792					
ordering						
Fulfilment		0.901	0,922	0,629		
Delivers orders	0.821					
when promised						
Delivering time in	0.721					
suitable time frame						
Quick delivers an	0.709					
order						
Sending the right	0.839					
items						
Product in stock	0.772					
Honest offerings	0.820					
The accurate	0.856					
promise about						
delivery						
Privacy		0.916	0,947	0,857		
Protecting we-	0.918					
shopping behavior						
information	0.045					
Not share customer	0.943					
personal						
information						



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Construct/item	Loading	Cronbach	CR	AVE
Construct/item		α		
information				
Food Quality		0.810	0.862	0,512
Offers a variety	0.711			
menu				
Offers a healthy	0.619			
option				
Offers fresh food	0.728			
The attractiveness	0.747			
of food presentation				
Delivered a tasty	0.780			
food				
Delivered in good	0.697			
temperature				
Perceived value		0.841	0,904	0,758
Offers reasonable	0.858			
price				
Overall convenience	0.869			
of use				
Cost-benefit ratio of	0.885			
transaction				
Customer		0.900	0,952	0,909
Satisfaction				·
Experience as	0.952			
expected				
Overall satisfied	0.955			

Table 3. Heterotrait-Monotrait Ratio

	CS	Е	F	FQ	Р	PV	S
							Α
Customer							
Satisfaction							
Efficiency	0.6						
-	04						
Fulfillment	0.6	0.8					
	77	37					
Food Quality	0.7	0.6	0.6				
	10	47	98				
Privacy	0.5	0.7	0.7	0.5			
·	63	22	80	44			
Perceived	0.7	0.6	0.6	0.7	0.5		
Value	33	60	73	80	47		
System	0.5	0.8	0.8	0.5	0.7	0.5	
Availability	59	05	89	98	00	62	

5.3 Structural Model

Hair et al. [23] suggested assessing the significance of path coefficients using the bootstrap method with 500 repetition procedures. Moreover, assessment of goodness-of-fit index can use the average of R^2 in the endogenous construct and geometric mean as suggested by Cohen [27]. He divided GOF index into three classes that are small (0.10), medium (0.25) and large (0.36) [27]. The GOF result in this study is 0.502 considered as large class, which means the research data is suitable for explaining the proposed research.

Table 4. Goodness-of-fit (GoF) index, Q2, R2

Construct/item	AVE Q^2	\mathbf{R}^2		
E-S-Quall Efficiency	0,649			
E-S-Qual System	0,649			
Availability				
E C O 1 E 1@11	0.000			
E-S-Qual Privacy	0,857			
Availability	0.000			

Construct/item	AVE	Q^2	R ²	
Food quality	0,512			
Perceived value	0,758	0,358	0,510	
Customer satisfaction	0.909	0,448	0,529	
Average score	0,709		0,520	
AVE $\mathbf{x} \mathbf{R}^2$				0.369
$GoF = \sqrt{(AVE \times R^2)}$				0,607

The literature suggested the use of R^2 and Stone-Geisser Q^2 as the standard for testing the predictive significance of the proposed model with PLS software [28]. To know how well data can be restructured using the proposed model then Q^2 value must be bigger than zero (cut-off value) [23]. When Q^2 larger than cut-off value then it indicates the predictive relevance of proposed model. The result of Q² are 0.358 (perceived value) and 0.448 (customer satisfaction), then both variables have satisfactory predictive relevance. In order to know how well the prediction of the proposed model on the data then R^2 test should be done. According to Chin et al. [28], there are three group of endogenous latent variables, and it consists of: weak (0.19), moderate (0.33) and substantial (0.67). Based on the three classifications, the perceived value variable $(R^2 = 0.510)$, and customer satisfaction $(R^2 = 0.529)$ are between moderate and substantial. In short, the value of R² shows the explanatory power of the E-S-Qual and food quality indicator on perceived value is closer to substantial. Another indication of the explanatory power of perceived value to customer satisfaction and loyalty is closer to substantial.

Table 5. The coefficient of path

Path	Coefficient	t-Stat		
Efficiency -> Customer satisfaction	0.002	0.035		
Efficiency -> Perceived value	0.192	2.919		
Fulfillment -> Customer satisfaction	0.249	3.313		
Fulfillment -> Perceived value	0.176	2.068		
Food quality -> Customer	0.231	3.683		
satisfaction				
Food quality -> Perceived value	0.441	7.088		
Privacy -> Customer satisfaction	0.083	1.646		
Privacy -> Perceived value	0.040	0.706		
Perceived value -> Customer	0.305	4.756		
satisfaction				
System Availability-> Customer	-0.014	0.240		
satisfaction				
System Availability -> Perceived	-0.033	0.577		
Value				

Table 5, shows the results of eleven hypothesis tests in this study. Based on the hypothesis tests, among four dimensions of E-S-Qual, it is known that efficiency, system availability and privacy have no significant influence on customer satisfaction because t-stat values are smaller than 1.96 (cut-off value). Then H1, H3, and H4 are rejected. On the other hand, relationships between fulfilment and



influence with coefficient 0.192 and significant at tstat > 1.96, H2 accepted. Similarly, tests of the relationship between food quality on customer satisfaction show significant and positive impact, H5 accepted. Moreover, between all variable relationships with customer satisfaction, it is known that food quality has the most significant impact with coefficient 0.231.

The next hypothesis test is about the direct effect of independent variable on perceived value. The result shows that hypothesis test of H6 and H7 regarding about efficiency and fulfilment relation on perceived value are received. This is because both hypotheses have t-stat above 1.96 with coefficient 0.192 (efficiency) and 0.176 (fulfilment). Therefore, it can interpret that efficiency and fulfilment variable has a significant and positive impact on perceived value in context of OFD service. In contrast with the H6 and H7, a different result of system availability and privacy variables are found. Regarding t-stant value that is below the cut-off value then H8 and H9 are rejected. The next hypothesis test about the effect of food quality on perceived value shows a positive and significant result. Based on table 5, the coefficient of relationship between the two variables is 0.441 and t-stant > cut-off value, so hypothesis H10 supported. The last hypothesis test about perceived value and customer satisfaction in context of OFD (H11) accepted.

6. DISCUSSION

Previous research on e-commerce has been widely discussed by researchers, but OFD literature still not much found, especially about the role of e-service quality and food quality in OFD services. Therefore this study objective is to analyse more in-depth about the role of these two variables.

This study has proved the primary factor that makes customer OFD satisfied with the transaction is not based on e-service quality but food quality. Similar to the restaurant business, the main cores that succeed the business are food itself. Even though service has an impact on customer satisfaction and perceived value, the most important thing still the food. Moreover, the previous research has also proven the important role of food quality in context of restaurant [6, 15]. Then it can be concluded that consumers of restaurant or OFD service consider food quality as the most important value in evaluating the transaction. Therefore, providers of OFD service should pay attention to the overall aspect that related to food quality such as presentation, variety, healthiness, taste, freshness, and temnerature

Based on literature, efficiency is the main factor in assessing perceived quality in e-service [22]. However, this study proves the opposite result. Although the test results indicated the significant effect of efficiency on perceived value, on customer satisfaction it is not significant. Another finding of this study shows that among the four E-S-Qual variables, the fulfilment variable has the most crucial effect in OFD service. Also, consumer OFD service assesses the satisfaction and perceived value from service quality related to the company ability to fulfil the promise such as delivery or food itself. Those finding could be due to the context of this study that focused on OFD service. Yaya et al. [29] support the statement about the application of fulfilment variable in e-service quality measurement is more suitable for a web that sells goods than a web that provides pure e-service. Therefore, it becomes more reasonable that the company capability to fulfil the promise of product is very important for customer of OFD service.

7. CONCLUSION

The findings in this study may provide basic information for managers to improve the quality of their online food delivery service. Since the food quality has the most significant impact on perceived value and satisfaction then OFD provider must be able to define all elements that affect the quality of food such as healthy and variety of menus, delivery methods, packing methods, and couriers. This is necessary because in an online business, consumers are very easy to found another provider. Moreover, the role of managers in this stage is to evaluate employees that involved in food preparation process, also improving the SOP that required during the process. Moreover, OFD providers should make sure that they can fulfil the promises. Terms of promises referred to real information of product and service on OFD website or application. Therefore, adding features to assess the transaction can help the manager to evaluate their ability in context of OFD service.

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