Research Article

Enhancing E-Customer Loyalty to Online Supermarkets during the Covid-19 Pandemic

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Abstract: The emergence of the COVID-19 pandemic and a need to conduct physical distancing has led to the latest innovation in the form of operating online supermarkets to continue serving the customers digitally. This innovation is, however, inseparable from the influence of e-service quality, an antecedent factor of online sales. The research goal was on determination and ascertainment of the extent of requiring e-customer satisfaction to significantly boost e-customer loyalty. The research employed a survey method and an explanatory follow-up design. 203 respondents having implemented online sales in West Kalimantan successfully returned the questionnaires to researchers. The whole data was collected and processed through Likert Scales, the SEM-PLS analysis tool, and FGDs with 5 key informants. A finding indicates that it is uncertain that e-customer satisfaction is crucially needed for the improvement of e-customer loyalty. It, conversely, turns out that process quality and service recovery undoubtedly have direct, significant influences on e-customer loyalty. In addition to the finding, there is the insignificance of outcome quality for this loyalty.

Keywords:E-Customer Loyalty, E-Customer Satisfaction, E-Service Quality, Online Supermarkets

1. Introduction

The spread of the coronavirus disease (COVID-19) pandemic does not only have impacts on businesses, but also affects the consumer behavior of satisfying the daily needs. Everyone begins to limit themselves for staying at homes and visiting public places, including markets and supermarkets. Existing changes are associated with government strictly imposing physical distancing in all regions in Indonesia¹. Here, everyone must keep the distance, wash hands, wear masks, and avoid being in a crowd2 since the COVID-19 pandemic can perilously and quickly be transmitted and its symptoms are difficult to detect^{2,3}. Physical distancing slowly and certainly impacts all businesses. Most essentially, there is less distribution of goods and sales turnovers for supermarkets. Maintaining and continuing to serve consumers without requiring their direct visit can be realized through digital businesses online⁴. The use of digital channels has become an important gap to fill in to survive during the COVID-19 pandemic.

Online supermarkets are noted as a web-based retail system allowing anyone to order products through direct deliveries^{4,5}. Through online channels, there is convenience of satisfying daily needs while conducting physical distancing. The success of online supermarkets is, nevertheless, inseparable from the readiness and capability to provide e-service quality for all consumers⁶. This understanding is necessary because various digital channels make it easier for them to shift to other websites for online purchase. The previous ones are referred to when they really benefit them with high e-service quality⁷. On average, a number of previous studies have linked such the quality to e-customer satisfaction in terms of perceived values and organizational performance^{8,9}. However, there is still little research linking this quality to e-customer loyalty. Relatively positive influences and relationships, and some low significance values are noted^{10,11,12}. This research fundamentally contributes to application of the modified framework of e-service quality for online supermarket businesses. In terms of the gap, there has been no study specifically exploring direct and indirect effects of increasing e-customer loyalty mediated by e-customer satisfaction.

The problem of the study is on the allegation that e-customer satisfaction has significant roles in increasing e-customer loyalty influenced by e-service quality, an antecedent factor^{13,14,15} both directly and indirectly based on digital transformation patterns of online supermarket businesses in West Kalimantan. This province, according to initial surveys, is chosen as it has wide ranges and locations of housing. Despite this, in fact, it has limited transportation infrastructure and the people prefer shopping at shopping centers directly. This gap becomes a potential, promising investment opportunity to increase market shares and local people income through online supermarkets. Determining the influence extent of e-customer satisfaction by e-service quality, further positively and significantly influencing e-customer loyalty of online supermarket businesses during the COVID-19 pandemic is the goal of this study.

2. Literature Review

2.1 E-Service Quality

E-service quality is often characterized by efforts to assess, consider, and evaluate the capabilities and availability of electronic services in online markets¹⁵. It has a variety of website functions facilitating the mechanisms of shopping, purchasing, and shipping of goods efficiently and effectively¹⁶. A number of previous studies on e-service quality experienced many changes both in terms of dimensions and indicators with different emphases. Review of the research scopes^{15,16,17} includes information quality, reputation, transaction security, availability, suitability, ease of use, navigation, responsiveness, delivery fulfillment, usability, accessibility, design, data update, transaction speed, trust, and data accuracy. This exposure is also inseparable from e-service quality framework and uniformity of measurement for online retail businesses^{18,19}.

Pertaining to indicators of e-service quality, the modification paradigm exists as an antecedent factor ¹⁹. This antecedent model is the filtration of the previous indicators adjusted for the needs of online supermarkets. Modified framework includes the dimensions of process quality, outcome quality, and service recovery¹⁹. To be specific, process quality covers convenience, information accuracy, ease of use, response time, security, functionality, and customer services. Outcome quality consists of delivery accuracy, product suitability, product completeness, and timeliness. Service recovery comprises failure prevention, failure recovery, service guarantees, and trust.

2.2 E-Customer Satisfaction

E-customer satisfaction importantly generates online customer loyalty. The linkage that is in the form of fulfilled expectations of certain products and services becomes the key to future purchase behavior²⁰. E-customer satisfaction is a comparison between expectations and experiences, and it is achieved when customer needs are met or even exceeded^{20,21}. It is characterized by criteria of diagnosing online service performance and is often realized through the willingness to buy other products from similar online companies based on previous experiences²¹. Customers who are satisfied with online service providers can increase their intention to use products in the future. E-customer satisfaction is a principal result of online assessment regarding overall experiences of purchasing and consumption^{21,22}. It is concluded from recent research that e-service quality is the main determinant of such the satisfaction influencing the intention of making online purchase again^{23,24}. Referring to previous studies, critical factors influencing e-customer satisfaction in online retail sales encompass ease of finding desired products, message responsiveness, safe transaction, order appropriateness, and ease of accessibility through various social media^{22,24}. Furthermore, filtration and need composition refer to dimensions of service process quality, service result quality, and service remedy quality²⁵.

2.3 E-Customer Loyalty

E-customer loyalty is fundamental for business companies including online retail supermarkets²⁶. Loyal, online customers always generate enthusiasm to others based on satisfaction of using products and services²⁷. When this condition happens, it is hard for them to be attracted to similar ones offered by other online supermarkets. It can be observed as they have behavior of making repeated purchase^{27,28}. Comprehensibly, e-customer loyalty refers to customers who are satisfied and enthusiastic about certain products and services online²⁸. It becomes the key for one of the most valuable assets for online supermarkets to gain competitive advantages²⁹. It is summarized from previous studies that this loyalty is the feeling of pleasure and satisfaction with online products and services bringing continuous purchase enthusiasm^{28,30}. E-customer loyalty is in relation to dimensions representing expectations and services such as tangibles, reliability, assurance, responsiveness, and empathy³⁰.

3. Research Method

The study population engaged all supermarkets having begun implementing online sales in addition to the physical, face-to-face ones in regions of West Kalimantan. Considering that there was uncertainty of total population known, the number of samples was determined by using a convenience technique³¹. Three-month data was collected after distributing questionnaires online. The time series included March, April, and May 2020. There were 203 respondents completing and submitting the questionnaires to the researchers. This study involved processes of defining the background, reviewing the literature, formulating the problems, designing the research hypotheses, collecting and analyzing data, elaborating the research results, and drawing the conclusion³¹.

Data was processed through Likert Scales with Score 6 (strongly agree) to Score 1 (strongly disagree). The reason is that the ordinal numbers can provide more accurate data^{31,32}. Online questionnaires, whose validity and reliability were tested, were created by referring to previous research. Conditions, time, and locations were also concerned. Online supermarket businesses are operated in Pontianak (45%), Sintang (25%), Singkawang (20%), and other regions: Ketapang, Melawi, Bengkayang, Landak, Sambas, and Putussibau (10%).

This research used Structural Equation Modeling (SEM) analysis method and Partial Least Square (PLS) approach. SEM-PLS stages consist of conceptual models, algorithm analysis methods, bootstrapping, path diagram models, model evaluation, conclusion, and recommendations³³. To guarantee that the data distribution was normal, bootstrapping was conducted^{33,34}. It functioned to validate results of data processing³⁴. Next, analysis results were confirmed to every supermarket manager having implemented online sales through Focus Group Discussions (FGDs)³⁴ to understand respondents' perception on the phenomena and formulation of research.

Finally, data was interpreted through a feedback process based on criteria of inclusion and exclusion from key informants³⁵. Such criteria were required to determine and ensure that the data was matched with the accuracy of the research subject and biased answers given by respondents were minimized. The research focused on the need to explore and determine the influence extent of latent variables of e-service quality in forms of process quality, outcome quality, and service recovery to increase e-customer loyalty mediated by e-customer satisfaction. Meanwhile, all dimensions and indicators were determined based on the criteria with the highest priority from the previous studies which was specifically on online retail sales by using the Analytical Hierarchy Process (AHP) method.

For research needs, hypotheses were tested. They covered H1: process quality had positive influences on e-customer loyalty; H2: process quality had positive influences on e-customer loyalty mediated by e-customer satisfaction; H3: outcome quality had positive influences on e-customer loyalty; H4: outcome quality had positive influences on e-customer loyalty; H4: outcome quality had positive influences on e-customer loyalty; H5: service recovery had positive influences on e-customer loyalty; H6: service recovery had positive influences on e-customer loyalty; and H6: service recovery had positive influences on e-customer loyalty mediated by e-customer loyalty mediated by e-customer loyalty.

Hypothesis testing was based on different kinds of previous studies described^{8,9,10,11,12}. They showed that on average, there were influences and relationships between e-service quality, e-customer satisfaction, and e-customer loyalty. However, only some of them showed significant values and failed to always obviously classify indicators on e-customer satisfaction and e-customer loyalty. Generally, the discussion was on constructs. There was no certainty of the composition of indicator statements leading to erroneous results obtained. This study filled in a gap through its focus of particularly applying a confirmatory analysis in terms of e-service quality, an antecedent factor in increasing e-customer loyalty mediated by e-customer satisfaction in relation to online supermarket businesses.

4. Results and Discussions

This research involved principal processes. To begin with, estimating a path diagram model was conducted by using PLS algorithm. Next, bootstrapping or random multiplication was run to meet the normality rules for data distribution and a minimum sample size requirement. The research path diagram consisted of constructs of e-service quality with process quality, outcome quality, and service recovery further associated with e-customer satisfaction and e-customer loyalty.

The details were that (a) process quality encompassed convenience (PQ1), information accuracy (PQ2), ease of use (PQ3), response time (PQ4), security (PQ5), functionality (PQ6), and customer services (PQ7); (b) outcome quality comprised delivery accuracy (OQ1), product conformity (OQ2), product completeness (OQ3), and punctuality (OQ4); (c) service recovery was in relation to failure prevention (SR1), failure recovery (SR2), service guarantee (SR3), and trust (SR4); (d) e-customer satisfaction included service process quality (e-CS1), service result quality (e-CS2), and service remedy quality (e-CS3); and (e) e-customer loyalty covered tangibles (e-CL1), reliability (e-CL2), assurance (e-CL3), responsiveness (e-CL4), and empathy (e-CL5).



Figure 1. Path Diagram of Research Model

Test results of the path diagram were presented in Figure 1. Outer loading values of all indicators were valid because all loading factor values were greater than 0.70. Consequently, they could be directly used in the study³³. Besides, both the convergent validity and discriminant validity were tested based on computed Average Variance Extracted (AVE).

Table 1 indicated tested discriminant validity results used to discover each construct level. After cognizing the reliability and validity of constructs, it was found that AVE was wholly greater than 0.50³³. All constants were, thus, valid. In addition, square roots of AVE revealed a greater correlation value of each construct. Table 2, however, showed that all results of reliability tested through Cronbach's Alpha. Here, values obtained were also greater than 0.60. Composite Reliability (CR) outcomes represented all values obtained which were also greater than 0.80. They could, hence, be used in the testing of the research hypotheses^{33,34}.

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Fornell-Larcker Criterion	Outcome Quality	Process Quality	Service Recovery	e-Customer Loyalty	e-CustomerSati sfaction
Outcome Quality	0.884				
Process Quality	0.853	0.777			
Service Recovery	0.861	0.937	0.824		
e-Customer Loyalty	0.820	0.934	0.961	0.884	
e-Customer Satisfaction	0.880	0.913	0.945	0.950	0.891

Table 1. Discriminant Validity

Table 2. Reliability and Validity of Constructs

Construct Reliability	Cronbach's	rho A	Composite	Average	Variance
and Validity	Alpha	rho_A	Reliability	Extracted	

Outcome Quality	0.906	0.921	0.934	0.782	
Process Quality	0.891	0.907	0.914	0.603	
Service Recovery	0.841	0.861	0.894	0.680	
e-Customer Loyalty	0.928	0.934	0.947	0.781	
e-Customer Satisfaction	0.870	0.876	0.920	0.794	

Another step was to analyze a structural model through bootstrapping with SmartPLS application program v.3.2.8. It was carried out to test significance of values of construct indicators. T-values were, nonetheless, calculated for further testing of existence of relationships among constructs in the research model. An indicator is declared to be significant if the t-statistic is greater than 1.96 (z-score at 95% Confidence Interval (CI = 1.96)) and probability values of t-values should be less than $0.05^{33.34}$. Another calculation on significance of path coefficients indicated that only some original sample values were positive. With the value of -0.187, outcome quality brought no influences on e-customer loyalty (see Table 3). Original sample values had better interpretation in terms of this quality, which in turn would further reduce the performance of e-customer loyalty. This condition reflected that there was no certainty that quality outputs could increase e-customer loyalty. In truth, there was no correlation among product delivery accuracy, product suitability, product completeness, timeliness, and increasing e-customer loyalty. These findings became critical information contradicting previous research^{19,26,28}.

Fornell-Larcker Criterion	Original Sample (O)	T-Statistic (O/S TDEV)	P Values
Outcome Quality → e-Customer Loyalty	-0.187	5.352	0.000
Outcome Quality → e-Customer Satisfaction	0.229	5.388	0.000
Process Quality → e-Customer Loyalty	0.244	4.224	0.000
Process Quality → e-Customer Satisfaction	0.141	1.920	0.055
Service Recovery → e-Customer Loyalty	0.475	6.923	0.000
Service Recovery → e-Customer Satisfaction	0.616	8.845	0.000
e-Customer Satisfaction → e-Customer Loyalty	0.443	6.975	0.000

Table 3. Path Significance Test

Observing the values which were greater than the t-table, the t-statistic similarly revealed that only some constructs had positive, significant influences and relationships in increasing e-customer loyalty (see Table 3). The test results, however, showed that there was insignificant probability values since they were greater than 0.05. Another finding showed that process quality had positive influences but they were insignificant for e-customer satisfaction so that there was no absolute truth that good process quality would increase e-customer satisfaction^{23,24,19}. Meanwhile, other constructs had very significant values despite the fact that antecedents of e-service quality and outcome quality had none of influences, positive relationships, and roles of increasing e-customer loyalty. Thus, online supermarkets in West Kalimantan apparently still required a lot of improvement on the utilization of application portfolios of IT services. This evidence further showed that each path coefficient was influenced by a number of antecedent factors of e-service quality which only have partially met customer expectations. Although e-customer satisfaction had an essential role of increasing e-customer loyalty, it turned out that service recovery performing as an antecedent factor had a higher path coefficient when mediated by e-customer satisfaction with consecutive values of 0.475 and 0.273.

The following step was to compute R-squared values to test the Goodness of Fit model. After being adjusted, an outcome depicting e-customer loyalty (0.951 or 95%) was indicated. Interpretively, such the loyalty was influenced by all constructs except outcome quality because of a negative path coefficient (-0.187). An adjusted

R-squared value of e-customer satisfaction (0.912 or 91.2%) was, however, revealed. Meaningfully, this satisfaction was influenced by each construct in the study except by process quality with an insignificant value. It was additionally found that R-squared predictive relevance was nearly perfect (0.996 or 99.6%). In other words, it was in a very large and very good category³³.

Based on the testing, all hypotheses (except for H3) were proven. Outcome quality had negative influences and relationships with e-customer loyalty but had significant values. It could be interpreted that outcome quality could once decrease e-customer loyalty regardless of their very high significance. The findings of this study were in direct contradiction to previous research^{13,14,15}. This fact, therefore, contributed to the development of science. It should be noted that realizing e-customer loyalty required consideration of various facets in addition to a number of factors or indicators frequently used before in studies according to the order of priority^{18,19}.

Based on information given by several informants, it turned out that high path coefficients of delivery accuracy (0.779), product suitability (0.902), product completeness (0.929), and timeliness (0.919) should crucially be improved with indicators of emotion and product innovation in the era of business digitalization. Building positive emotion with customers and conducting product innovation could be of great importance to trigger intense memory to attract them to always shop in the same place. Furthermore, e-customer satisfaction was viewed to have uncertainly strong roles on e-customer loyalty.

Regarding contributions for online supermarket businesses through the reference of path coefficients, e-customer satisfaction, in comparison to its non-existence as a mediating factor, had more substantial roles when outcome quality increased e-customer loyalty. Process quality and service recovery, nonetheless, had lower path coefficients if there were none of direct influences of e-customer satisfaction. The representation was that there was no absolute dependence of efforts to increase e-customer loyalty and e-customer satisfaction. More essentially, priority needs of service portfolios of IT in terms of process quality and service recovery should be mapped.

Elaboration of this research was still in restriction to prediction sides of the research model in association with analysis and interpretation on influences and relationships. Here, e-service quality increasing e-customer loyalty was mediated by e-customer satisfaction of online supermarket businesses. This research has incompletely involved confirmatory analysis on direct and indirect influences for the treatment of each indicator of exogenous and endogenous constructs.

5. Conclusion and Future Research

In logical conclusion, whether e-customer satisfaction has significant roles of directly influencing e-customer loyalty is inconsistent. It is particularly noted that e-service quality and its antecedent factors should be more concerned to increase this loyalty to online supermarket businesses. This evidence is shown based on path coefficients and determination values of process quality and service recovery, not on quality outcomes. This research can be extended to specifically and deeply discover the results of confirmatory analysis of each indicator in relation to direct and indirect construct influences.

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