Analysis of the Effect of Service Quality Dimensions, Perceived Value, and Trust on Customers of Delivery Services through E-commerce

Muhammad Wahyu Ariyanto* 1), Rifelly Dewi Astuti 2)
1,2) Faculty of Economics and Business, University of Indonesia.

ARTICLE INFORMATION

Article history:
Received: July 26, 2022
Revised: December 15, 2022
Accepted: January 24, 2023

Keywords:
Service Quality
Perceived Value
Trust
Customer Satisfaction
Delivery Service

ABSTRACT

The objective of this study was to examine the value of the influence of service quality dimensions, customer perceptions and beliefs on satisfaction in using delivery services. This research was conducted on selected shipping services via e-commerce in Indonesia with a total of 389 respondents. The novelty of this research lay in the social and economic conditions when the COVID-19 pandemic was still ongoing and according to government policies or calls for people to stay at home. This study concluded that the dimensions of assurance and empathy had a positive and significant effect directly and indirectly through trust on customer satisfaction, the tangible dimension only influenced customer satisfaction indirectly through trust. Meanwhile, the other two dimensions of service quality, namely responsiveness and reliability, did not affect customer satisfaction either directly or indirectly through trust. Trust could also mediate between the relationship between perceived value and customer satisfaction. It could be seen that it had an original sample value of 0.161 and a P-value of 0.000, which was smaller than 0.05.

This is an open access article under the CC-BY license.

Corresponding Author:
Muhammad Wahyu Ariyanto
Faculty of Economics and Business, University of Indonesia
Email: m.wahyu01@ui.ac.id

© 2023 Some rights reserved
INTRODUCTION

Internet technology advancements have a positive impact on many aspects of life [1]. One sector that has had a positive impact is trade, where many companies have innovated in both production and sales. Many businesses are currently using e-commerce to sell their goods/products. According to research [2] e-commerce is regarded as one of the most dynamic and important economic sectors, as well as one of the most important factors in corporate competition [3].

In Indonesia, there are numerous e-commerce applications available that can be accessed directly by smartphone users via the internet. According to [4], 88.1% of internet users in Indonesia have used e-commerce apps in the last few months to carry out certain goods transactions. This is one of the highest rates in the world. E-commerce is concerned not only with the function of online buying and selling of goods and services, but also with the facilitation of the entire buying and selling process, including delivery services [5].

The rise of e-commerce has also placed home delivery services at the heart of effective electronic supply chain systems [6]. The goal is to ensure that goods reach customers in a timely, convenient, and high-quality manner. Delivery services are simply delivery activities provided by the company in the form of services where goods or products are delivered to the customer’s door [7]. This explains the significance of service quality in terms of customer satisfaction. According to [8] customer satisfaction exists and poses a significant problem in marketing because happy customers can turn into reliable customers who ensure company profitability [9]. Customer satisfaction is motivated by perceptions that consumers evaluate overall for their experience [8]. Customer satisfaction occurs when a product or service meets or exceeds the customer’s positive expectations [10].

Furthermore, perceived value is an important antecedent for measuring customer satisfaction. The perceived use of a product or service by a customer determines the value of the customer experience [11]. Various researchers have also investigated the significance of the effect of perceived value on customer satisfaction, albeit with mixed results [10].

Customers' perceived value is what they expect from a product or service in terms of the ratio of perceived benefits to perceived price, so that customers are satisfied and expect value for a positive outcome [12]. As a result, the literature on expectancy disconfirmation theory (EDT) is used in the development of customer satisfaction. Customers have expectations, develop different expectations of service quality from personal experience, word of mouth, advertising, or other means, and thus apply different standards in forming subjective judgments or satisfaction ratings, according to expectation disconfirmation theory [13]. Expectancy is the customer’s guess about what will happen during an upcoming transaction or exchange, and it is usually measured before actual consumption.

Customers’ expectations about what will happen during an upcoming transaction or exchange are typically measured before actual consumption [14]. Customer satisfaction and ongoing intent to use a product or service are explained by expectancy disconfirmation theory (EDT) [15].

RESEARCH METHOD

This study used a cross-sectional design. According to [16] cross-sectional research is one of the most frequently used quantitative
descriptive designs in various researches. This design is also called the sample survey research design which is part of the primary data.

According to [15], descriptive studies dealing with a single variable question or hypothesis, in which we ask or state something about the size, shape, distribution, or existence of a variable. [12] add that descriptive research can help you think systematically about aspects of a situation, generate ideas for further research, and simplify certain decisions. Respondents or samples in this study were customers/customers who had made e-commerce transactions within the previous month and were over the age of 18. The sampling technique used in this study was non-probability sampling of the Judgmental type. [17] Explanation This study employs descriptive research with a quantitative approach. Judgmental sampling is a type of convenience sampling that uses population elements chosen by the researcher's discretion.

The questionnaires were distributed to a predetermined sample of at least 350 samples/respondents because the primary data had been collected. Taking the questionnaire on a Likert scale if they're over the age of 17. This study used non-probability sampling with a Judgmental sampling type and a value of 1-5 with information ranging from very dissatisfied to very satisfied shown in figure 1.

![Figure 1. Path Diagram](image)

RESULT AND DISCUSSION

**Characteristics of Respondents**
The gender of the respondents is known, and the majority of respondents in this study were women, accounting for 231 people or 59.4% of the total 389 respondents. The male respondents had a percentage of 50.6%, or 158 respondents. The interpretation of the table above is that women are more dominant in making e-commerce purchases, so there is a higher likelihood of customer interaction with delivery services.

According to the research findings, the majority of respondents in this study were young people aged 18-25 years old, with a percentage of 61.2% or 238 respondents out of a total of 389 respondents. Then
there were those between the ages of 26 and 35, who account for 26% of all respondents. Age 36-45 years represents 8.2% of the total number of respondents, while age > 45 years represents 4.6% with a total of 18 respondents. This can be interpreted to mean that the majority of e-commerce users who used delivery services were teenagers (generation Z). And the lowest e-commerce users were those over 45 years of age who can identify that this age prefers shopping directly.

The majority of respondents, 227 in total, or 58.4% of the total number of 389, had completed a middle level education. D3/D4/S1 was the next sequence, with 117 respondents (30.1%). The final education S2/S3 was the number of respondents who agree with this study was 35, accounting for 9.0% of the total number of respondents. And the final order in this research's last education was elementary school, with a total of 10 respondents or 2.6% of the total number of respondents. This last education interpretation that could be explained was that respondents had a high level of education.

With a total of 162 respondents, representing 41.6% of the total number of respondents, students held the majority of the jobs. Private employees, with a total of 144 respondents, now account for 37% of all respondents. Then there were 13 civil servants out of a total of 389 respondents, for a percentage of 3.3%. Self-employment accounted for 45 respondents with a percentage of 11.6%, while other jobs accounted for 25 respondents with a percentage of 6.4%. According to the interpretation of the above description, students are the majority of e-commerce users, and students are very close to their activities with gadgets when compared to the age above.

The majority of respondents live outside of Jabodetabek, where there were 222 people, accounting for 57.1% of all respondents. In addition, 167 people live in Jabodetabek, accounting for 42.9% of the total. This could be interpreted to mean that e-commerce users who used delivery services have reached areas outside of major cities.

**Validity Test (pretest)**

From the results of the pretest, it was known that each variable in this study had a good level of validity; with KMO value greater than or equal to 0.50. Bartlett's Test value was less than equal to 0.05, and the Component Matrix and Anti-Image values were more than equal to 0.50 [14].

**Reliability Test (pretest)**

The overall dimensions of SERVQUAL which consisted of assurance, empathy, tangibles, responsiveness and reliability as well as perceived value, trust and customer satisfaction variables had a Cronbach Alpha' value greater than > 0.06 so it could be interpreted that the four latent variables were reliable. [16]

<table>
<thead>
<tr>
<th>Variables/dimensions</th>
<th>N</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assurance</td>
<td>4.13</td>
<td></td>
</tr>
<tr>
<td>Empathy</td>
<td>4.04</td>
<td></td>
</tr>
<tr>
<td>Tangibles</td>
<td>4.01</td>
<td></td>
</tr>
<tr>
<td>Responsiveness</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>4.10</td>
<td></td>
</tr>
</tbody>
</table>
From **table 1**, it is the result of processing the answers of respondents who filled out the questionnaire using a Likert scale of 1-5. It is known that the average mean is above 4 which explains that the respondents' answers are good to the questions given and are easy to understand.

**Convergent Validity Test**

The convergent validity test could be seen from the value of the outer loading or loading factor using the smartPLS 3.0 application. Indicators with a loading factor/outer loading value > 0.7 were included in the good category in explaining latent variables. Of all the question indicators, the after loading value was > 0.7 so that the indicator was considered good.

**Discriminant Validity**

After testing the validity using the outer loading value to show the validity of each indicator, then testing the discriminant validity using the average variance extracted (AVE) value, where the AVE variable was considered good and valid if it had an AVE > 0.5 in **table 2**.

<table>
<thead>
<tr>
<th>Variables/dimensions</th>
<th>N</th>
<th>mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Value</td>
<td>4.17</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>4.14</td>
<td></td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>4.17</td>
<td></td>
</tr>
</tbody>
</table>

Source: Processed data by the Author (2022)
This test is used to determine the magnitude of the difference between variables. The value seen in this test is the overall average variance extracted (AVE) value; all variables have an AVE value > 0.5 and were thus considered valid.

**Reliability Test**
Reliability testing in a study is carried out to find out that the measurements made are not biased and ensuring the similarity of measurements to the measurement items used in the study.

Reliability testing is conducted to determine whether the variables used in this study are reliable or not. Reliability testing uses Cronbach's alpha value. The following are the results of reliability testing.

### Table 3. Reliability

<table>
<thead>
<tr>
<th>Variable/dimension</th>
<th>Cronbach's Alpha</th>
<th>Note.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assurance</td>
<td>0.760</td>
<td>Reliable</td>
</tr>
<tr>
<td>Empathy</td>
<td>0.761</td>
<td>Reliable</td>
</tr>
<tr>
<td>Tangible</td>
<td>0.750</td>
<td>Reliable</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>0.705</td>
<td>Reliable</td>
</tr>
<tr>
<td>Reliability</td>
<td>0.731</td>
<td>Reliable</td>
</tr>
<tr>
<td>Perceived Value</td>
<td>0.830</td>
<td>Reliable</td>
</tr>
<tr>
<td>Trust</td>
<td>0.850</td>
<td>Reliable</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>0.838</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

Source: Data processed by the author

The constructs for all variables are considered to be reliable criteria in table 3, because the results above can be obtained by Cronbach's alpha and composite reliability values of more than 0.70 which can be explained if more than 0.70 are considered reliable.

### Direct Effects
This research is conducted by looking at the value of path coefficients to test the research hypothesis. Hypothesis testing is measured if the coefficients are closer to the value 1, then the relationship between the two variables/constructs is getting stronger. Hypothesis test values can also be seen from P values <0.05, if less than 0.05 then there is an influence between constructs/variables. The following are the results of data processing using smartPLS 3 obtained from the main test results in table 4.

### Table 4. Direct Effects

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Description</th>
<th>Efficient</th>
<th>Values</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a</td>
<td>Assurance -&gt; CS</td>
<td>0.127</td>
<td>0.038</td>
<td>S</td>
</tr>
<tr>
<td>H1b</td>
<td>Empathy -&gt; CS</td>
<td>0.153</td>
<td>0.004</td>
<td>S</td>
</tr>
<tr>
<td>H1c</td>
<td>Tangible -&gt; CS</td>
<td>0.010</td>
<td>0.849</td>
<td>NS</td>
</tr>
</tbody>
</table>

Ariyanto, Astuti

http://doi.org/10.30988/jmil.v7i1.1063
Hypothesis | Description | Efficient | Values | Note
--- | --- | --- | --- | ---
H1d | Responsiveness -> CS | 0.044 | 0.337 | NS
H1e | Reliability -> CS | 0.002 | 0.963 | NS
H2a | Assurance -> Trust | 0.153 | 0.009 | S
H2b | Empathy -> Trust | 0.126 | 0.016 | S
H2c | Tangible -> Trust | 0.166 | 0.003 | S
H2d | Responsiveness -> Trust | -0.029 | 0.581 | NS
H2e | Reliability -> Trust | 0.019 | 0.702 | NS
H3 | Perceived Value -> CS | 0.317 | 0.000 | S
H4 | Perceived Value -> Trust | 0.510 | 0.000 | S
H5 | Trust -> CS | 0.316 | 0.000 | S

Source: Data processed by the author (2022)

H1a: The effect of assurance on customer satisfaction
The results of testing hypothesis 1a revealed that the estimated value of the relationship between the assurance variable and customer satisfaction was 0.127 (positive). p-values of 0.038 < 0.05 indicated that there was significance, implying that H1a was accepted. According to research [18], the Assurance dimension influenced customer satisfaction in Malaysian medical device delivery services.

This study was supported because the delivery clerk was courteous to customers, allowing them to believe that the goods they purchase were safe. Customers also believed that service personnel were knowledgeable about delivering goods purchased by customers. This increased customer satisfaction for both the delivery person and the company. Customers also believed that service personnel were knowledgeable about delivering goods purchased by customers. This increased customer satisfaction for both the delivery officer and the company.

H1b: The effect of empathy on customer satisfaction
The results of testing hypothesis 1b showed that the estimated value of the relationship between the Empathy variable and Customer satisfaction was 0.153. (positive). The p-values are then 0.004 < 0.05, indicating that there was a significant difference, and H1b was accepted. The findings of this study were also supported by research [19], which claimed that the Empathy dimension had a positive and significant effect on customer satisfaction in the Indian financial sector. Beginning with delivery in accordance with what customers expect, delivery officers took personal initiative to fulfill customer requests. Furthermore, the delivery officer properly delivered the goods purchased by the customer.

H1c: The effect of tangibles on customer satisfaction
According to the results of hypothesis 1c testing, the relationship between Tangible variables and customer satisfaction had an estimated value of 0.010. (positive). The p-values are then 0.849 < 0.05, indicating that H1c was
rejected. This is consistent with research from [17] aimed at improving the relationship between the tangibles dimension and customer satisfaction in drug delivery services. The customer felt that the delivery officer lacked company-related characteristics and attire. As a result, customers judged the officer as not having a neat and good appearance.

**H1d: The effect of responsiveness on customer satisfaction**

According to the findings of hypothesis testing 1d, the relationship between the Responsiveness variable and Customer satisfaction had an estimated value of 0.044. (positive). The p-values were then 0.337 < 0.05, indicating that H1d was rejected. This study was supported by [19], which explained that the dimension of responsiveness had no effect on customer satisfaction in local government services.

Delivery officers did not always carry out the delivery of goods / products purchased as quickly as they should. This frequently occurred when the notification of information provided through the goods application arrived at the gateway closest to the customer's location, but the delivery officer took some time to deliver the goods.

**H1e: The effect of reliability on customer satisfaction**

The results of testing hypothesis 1e showed that the relationship between the reliability variables and customer satisfaction showed an estimated value of 0.138 (positive). Then the p-values were 0.135 < 0.05 so that H1e was rejected. This study was in accordance with previous research from [20] which explained that the reliability dimension had a positive but not significant effect on customer satisfaction in hospital services in Thailand.

There were no specific advantages of each shipping service other than differences in colors, logos and tangible things from the company. In fact, customers tended to give a sense of satisfaction if there was a superior factor from one of the delivery services.

**H2a : The effect of assurance on trust**

The inner model of data analysis results in Hypothesis 2a showed a coefficient value of 0.153 for the relationship between assurance and trust dimensions (positive). The P-value results showed 0.009, which was 0.005, indicating that hypothesis H2a could be accepted. According to research [21], the relationship between the dimensions of assurance on the service quality variable had a positive and significant effect on trust in insurance services in Pakistan.

One of the most important dimensions in increasing trust was assurance. The delivery personnel had a lot of experience doing their job. Furthermore, polite customer behavior was a plus point that was owned, and the delivery officer provided answers to what customers ask. As a result, customer trust could be built and increased.

**H2b: The effect of empathy on trust**

The results of the inner model of data analysis on hypothesis 2b indicated that the relationship between empathy dimensions and trust had a coefficient value of 0.126 (positive). Then the results of the P-value showed 0.016 which was.
<0.005, it explained that the H2b hypothesis could be accepted. The same research conducted by [22] explained that there was a positive and significant influence of empathy on trust in organizations in Canada.

The empathy dimension in increasing trust in delivery services carried out by officers, namely delivery officers prioritized customer interests and also in delivering goods according to the customer's desired time, namely during operating hours.

**H2c : The effect of tangibles on trust**

The results of data analysis hypothesis 2c showed that the relationship between tangibles and trust had a coefficient value of 0.166 (positive). Then the results of the P-value showed 0.003 which was <0.005, it explained that the H2c hypothesis could be accepted. Research [12] also found that the tangibles dimension had a positive and significant influence on trust in telecommunication services in India.

This tangible dimension may increase trust because the delivery officer kept the packaging provided neat and clean until it reached the customer's hands.

**H2d : The effect of responsiveness on trust**

The inner model of data analysis on hypothesis 2d yielded a coefficient value of -0.029 for the relationship between the dimensions of responsiveness to trust (negative). The P-value results showed 0.581, which was greater than 0.005, indicating that the H2d hypothesis was rejected. This study differed from previous research [23], which found that responsiveness had a positive and significant impact on trust in online shopping services. Delivery personnel were less quick, even if they were sometimes at the end of the specified time limit during operational times and less willing to assist customers, resulting in a decrease in customer trust.

**H2e : The effect of reliability on trust**

The results of the inner model of data analysis on hypothesis 2e showed that the relationship between the dimensions of reliability and trust had a coefficient value of 0.019 (positive). Then the results of the P-value showed 0.702 which was >0.005, this explained that the H2e hypothesis was rejected.

The reliability dimension could not have a significant influence on trust. This was due to the delivery officer still asking about the exact location, the delivery officer also did not store the receipt or bill accurately. In maintaining confidentiality, the delivery officer could still contact after the transaction was carried out so that customers tended to have less confidence in the delivery service.

**H3 : The effect of perceived value on customer satisfaction**

The results of the inner model of data analysis in hypothesis 3 showed that the relationship between the Perceived Value variable and Customer satisfaction showed an estimated value of 0.407 (positive). Then the p-values of 0.000 <0.05 so H3 was accepted. This research was supported by research from [24] that perceived value had a strong influence on customer satisfaction in the offline buying process compared to online.
Service officers performed their duties in accordance with the rules and directions given by the company. So that it could provide its own perceived value to customer perceptions and would have an impact on customer satisfaction.

**H4 : The effect of perceived value on trust**
The results of testing hypothesis 4 showed that the relationship between the Perceived Value variable and Trust showed a coefficient value of 0.510 (positive). Then the p-values of 0.000 < 0.05 so H4 was accepted. This study was in accordance with previous research from [7] which explained that green perceived value had a positive and significant effect on green trust in green marketing in Taipei.

Customers in determining delivery services in accordance with the perception they want. The service provided by the delivery person was good so that the customer felt calm and safe when the item was brought by the delivery officer chosen by the customer.

**H5: The effect of trust on customer satisfaction**
The results of testing hypothesis 4 showed that the relationship of the Trust variable to Customer satisfaction showed an estimated value of 0.317 (positive). Then the p-values of 0.000 < 0.05 so that H5 was accepted. This study was in accordance with previous research from [7] which explained that trust had an influence on customer satisfaction in home delivery services through e-commerce.

From this research, it could be concluded that customers/respondents felt that they get the services provided by the delivery officer comfortably and safely. Customers also gave a sense of trust because of the company's commitment to get input and criticism if the officer did not match what the customer expects.

**Indirect Effect**
In the research conducted, the selection of trust as a mediating variable was due to its long-term nature in maintaining relationships with customers [25] also explained that customer relationships with companies required trust, because trust became a scattered stumbling block if customers experienced a lack of trust.

<table>
<thead>
<tr>
<th>Table 5. Indirect Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>assurance -&gt; trust -&gt; customer satisfaction</td>
</tr>
<tr>
<td>empathy -&gt; trust -&gt; customer satisfaction</td>
</tr>
<tr>
<td>perceived value -&gt; trust -&gt; customer satisfaction</td>
</tr>
<tr>
<td>reliability -&gt; trust -&gt; customer satisfaction</td>
</tr>
<tr>
<td>responsiveness -&gt; trust -&gt; customer satisfaction</td>
</tr>
<tr>
<td>tangibles -&gt; trust -&gt; customer satisfaction</td>
</tr>
</tbody>
</table>

Source: Data processed by the author (2022)

Table 5 contains the results. There is mediation if the p-values are less than 0.05. As a result, the following conclusion can be reached:
Trust can act as a moderator between the dimensions of assurance, empathy, and tangibles in terms of customer satisfaction. Trust can also act as a buffer between perceived value and customer satisfaction. However, trust is ineffective as a mediator for the dimensions of responsiveness and dependability.

**CONCLUSION**

The non-probability sampling with the Judgmental sampling method yielded 389 respondents. The following are the outcomes of processed respondent data. Assurance and empathy are two dimensions that have a positive and significant impact on customer satisfaction. The other three dimensions, namely physical evidence (tangibles), responsiveness, and reliability, have no significant effect on customer satisfaction with e-commerce home delivery services. The trust variable can act as a bridge between the assurance, empathy, and tangible dimensions of customer satisfaction. The SERVQUAL dimensions that are not mediated by the trust variable are responsiveness and reliability. The value perceived by customers in accordance with the expectations they choose has a positive and significant effect on customer satisfaction. Trust can effectively mediate the relationship between perceived value and customer satisfaction; the greater the trust obtained from customers, the greater the value perceived by customers can increase satisfaction. In general, the research model used by researchers only discusses service quality, customer perceived value, and trust in customer satisfaction. There are many more variables that can be added to see if they affect customer satisfaction. Furthermore, post-customer satisfaction variables can be investigated. Because this research makes use of shipping or logistics services, the service quality that serves as the foundation of the research should be consistent with the field where many theories have been developed, namely service quality logistics. The study is cross-sectional rather than longitudinal, so the results reflect only one point in time and may differ if measured at different points. Because the research time was only one week, the distribution of questionnaires was still not optimal in terms of getting respondents.

**REFERENCES**


**BIOGRAPHIES OF AUTHORS**

**Author 1**

Muhammad Wahyu Ariyanto  
Muhammad Wahyu Ariyanto is a student of the postgraduate study program in management science specializing in marketing, Faculty of Economics and Business, Universitas Indonesia. He earned a bachelor’s degree in the commerce education study program, faculty of economics and business, Universitas Negeri Surabaya in 2020. Currently, he has a passion for research on halal marketing, customer satisfaction, social marketing and philanthropy.

**Author 2**

Rifelly Dewi Astuti  
Rifelly Dewi Astuti is a lecture specializing in marketing at Department of Management, Faculty of Economics and Business, Universitas Indonesia. She received master and doctoral degree in marketing management from Universitas Indonesia. Her publications include “Entrepreneurial marketing and marketing strategies of SMEs to marketing performance: an empirical analysis of fit” (2018) and “Entrepreneurial marketing orientation of young SME owners in Indonesia” (2020). Her research interests include entrepreneurship, marketing for SME, and consumer behavior in digital era.