Understanding Choices: Product Reviews And Customer Services As Determinants Of Online Purchase Decisions

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ABSTRACT
The aim of this research is to determine the influence of product and customer service reviews on purchasing decisions on online sites, how much each variable is related to each other, while the research method uses Stata Statistics 14 and quantitative descriptive, by testing statistical data in the form of good data processing. primary and secondary by taking a sample of 20 respondents consisting of customers who have or have made purchasing decisions online by conducting interviews, field observations (field research) with the method of distributing questionnaires directly, so that the research results show that product review variables and service influence Customers’ online purchasing decisions have a significant positive value, both partially and simultaneously influencing online purchasing decisions.

KEYWORDS
Product Reviews, Customer Service, Online, Purchase Decisions

INTRODUCTION
In the advanced and developing digital era, online purchases have become the main choice for consumers to obtain various products and services, especially as consumers are busy in life, both product and service trade which is increasingly competitive, there are two very important factors, namely product reviews and customer service, Product reviews or product reviews are testimonials given by consumers, which describe experiences with products, product reviews are part of marketing, which is an important concept for producers who must focus attention on the wants and needs of consumers both outside and inside the market, consumer behavior and habits. consumer(Utomo & Rukiastianandari,2022a) These two factors, product reviews and customer service, have a significant influence on consumer purchasing decisions in an e-commerce environment. 93% of consumers will look at product reviews when they want to make a purchasing decision. The better the product review, the more it will strengthen consumers in deciding their choice to buy, that a person's behavior or actions when they buy or
use a product or service that they believe will satisfy them, and are willing to bear the risks that may arise after purchasing a product or service. This is after going through a product review process and appropriate customer service, while the purchasing decision is the stage of the respondent's tendency to act before the purchasing decision is actually implemented. (Saidani & Arifin, 2012), according to (Yanti et al., 2022) is the stage in the purchasing system before post-purchase behavior occurs. In entering this stage, consumers are faced with several alternative choices so that at this stage consumers will take steps to choose to buy a product based on a predetermined decision. After people buy for the first time, there are only two possibilities whether people will buy again (repeat order) or not. (Utomo & Rukiastian, 2022a) while people use indicators of product popularity or the value of a product which will influence their willingness to decide to buy. (Latief & Ayustira, 2020) So that loyalty occurs is also defined as a deep commitment to repurchase or repeat a product or service preference pattern in the future, which causes repeated purchases of the same brand or a set of the same brands. (Suwarsito & Aliya, 2020) Based on the understanding above, there is a problem why online manufacturers do not carry out product reviews and customer service is not carried out effectively and efficiently on a regular basis and use customer service slowly and there are complaints from consumers.

**LITERATURE REVIEW**

**Definition Of Product Review**

Product reviews are a very important source of information for consumers, because the information obtained by consumers can influence purchasing decisions. Product reviews provide insight into the quality, usefulness and reliability of the product desired by potential buyers. According to Sudarsono (2020) Marketing can be a managerial process that causes individuals or groups to get what they need by creating, offering and trading products of high value to various parties. Product reviews are an effort to build trust in online shopping, and cannot be ignored. One way is to look at information from a product's blog, starting from the specifications, advantages and disadvantages of the product and the price of the product. (Latief & Ayustira, 2020), according to Hariyanto & Trisuwarno (2021) Product reviews are reviews given by consumers regarding product assessments from various points of view such as product quality or consumer experience after purchasing a product. Apart from product reviews, what needs to be considered is that customer service is also one of the factors that will influence purchasing decisions in the media. on line.

**Definition Of Customer Service**

Dzulqarnain in (Rinaja et al., 2022), customer service must meet product quality first before making a purchase transaction. (Nurfauzi et al., 2023) According to Gretzel & Yoo, they found that online reviews are the most important source of information for customers to generate customer purchase intentions. (Arista & Lasmana, 2019), for consumers or potential online consumers, product reviews and customer service are useful for helping potential consumers make online purchasing decisions. (Son, 2020). Product reviews are a source of information for consumers about a product. Usually consumers make product reviews in the form of written or direct reviews addressed to the company regarding the product being reviewed and include suggestions on how to evaluate the product after they buy it. (Geraldine & Anisa, 2022). On the other hand, good customer service plays a crucial role in helping consumers overcome doubts or questions about products before they make a purchase.

**Definition Of Purchasing Decision**

Service quality can be realized through fulfilling consumer needs and desires as well as accuracy in delivery to match consumer expectations. (Boediono et al., 2018), and is the overall characteristic or nature of a product or service that has the effect of satisfying stated or implied
needs. (Setianingsih & Rahayu, 2018), according to (Fauzi & Lina, 2021) that customer service is a review given by consumers in a predetermined form, therefore managers must provide the right quality of service and product quality in order to compete with other restaurants and win many consumers. (Widjoyo, 2014) with the star scale indicator being the most widely used, the higher the number of stars given by consumers, the greater the quality of the product. Conversely, the lower the number of stars given, the worse the product quality is (Istiqomah & Marlena, 2020) and answering questions that may arise before or after purchase in addition to product reviews and required customer service, online purchasing decisions are the final result of whether customers are interested in the goods and services offered, this is in accordance with the statement Nusrai et al. (2018).

METHODS

The research used in this research is quantitative, according to Hermawan (2019) Quantitative Research is a research method that is inductive, objective and scientific in which the data obtained is in the form of numbers (scores or values) or statements that are evaluated, and analyzed using statistical analysis, while Lubis (2021) explains that the population as a whole is the object of research, according to (Mukhtazar, 2020) population is a "universe", namely a generalized area consisting of subjects or objects that have a certain number and characteristics, so the population obtained in this research is consumers who use online site products and have made purchases on online sites and use social media as a medium for looking at product reviews and ratings, while samples according to Ahmad & Jaya (2021) states part of the total and characteristics possessed by that population, according to Sugiyono in (Mamik, 2014) Non probability sampling is a technique that does not provide an equal opportunity for each part of the population or member of the population to be selected as a sample of 20 respondents, while data collection techniques that can be used in research such as literature studies Santosa & Puisparatri (2021) literature studies are research data collected through searching and reviewing literature based on libraries and reading materials, questionnaires according to Rifkhan (2023) the data processing technique uses Stata statistics version.14 and data collection uses a questionnaire/questionnaire strategy, in the sense that it is a data collection technique by distributing questions or statements to respondents who have been selected as research subjects. The questionnaire technique in making questions or explanations must focus on aspects, markers, and scale estimates, observations according to Mamik (2015) Observation is a collection technique where researchers must observe things related to space, place, actors, activities, time, events, goals and feelings directly in the field. This research includes applying observation, where the researcher goes directly to the research location, namely the online shop and interviews Djaali (2020) Interviews are a way to collect material or information by asking and answering questions orally and directly to research respondents in a predetermined direction, while within the framework of thinking the research variables will be explained in depth and relevantly according to the problem being studied, so that it can be used as a basis for answering research problems (Ismail & Sri, 2019), and the following is an overview of the thinking framework in this research:

Figure 1 Research Model

![Figure 1 Research Model](https://via.placeholder.com/150)

Source: Processed data, 2023
The picture shows that the hypothesis is about the influence of product reviews and customer service on online purchasing decisions, but this research was developed again using hypothesis testing as a temporary answer to the research problem. The formulation of the research hypothesis is as follows:

- **H1**: There is a significant positive relationship and influence on the influence of product reviews and customer service on online purchasing decisions.
- **H0**: There is no significant positive relationship and influence on product reviews and customer service on online purchasing decisions.

**RESULTS**

**Validity And Reliability Test**

Determining whether a statement item can be said to be valid or not can be done by comparing the calculated $r$ in the Pearson correlation column with the $r$ table value in the Pearson product moment, based on the criteria with the $df$ conditions that have been obtained ($df = 98$) with an error level of 0.05, so the value obtained $r$ table is 0.2006.

**Table 1 Validity And Reliability Test Results**

<table>
<thead>
<tr>
<th>Item</th>
<th>Obs</th>
<th>Sign</th>
<th>item-test correlation</th>
<th>item-test correlation</th>
<th>interitem covariance</th>
<th>alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>product</td>
<td>100</td>
<td>+</td>
<td>0.6997</td>
<td>0.2309</td>
<td>-0.1660606</td>
<td></td>
</tr>
<tr>
<td>customer</td>
<td>100</td>
<td>-</td>
<td>0.6227</td>
<td>0.0196</td>
<td>0.1935354</td>
<td>0.2832</td>
</tr>
<tr>
<td>online</td>
<td>100</td>
<td>+</td>
<td>0.5072</td>
<td>0.0144</td>
<td>0.2076760</td>
<td>0.2505</td>
</tr>
<tr>
<td>Test scale</td>
<td>100</td>
<td>+</td>
<td></td>
<td></td>
<td>0.0783838</td>
<td>0.1581</td>
</tr>
</tbody>
</table>

Source: Processed data, 2023

**Table 2 Recapitulation Of Validity Tests**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R$ Hasil</th>
<th>$R$ Table</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Reviews</td>
<td>0.5910</td>
<td>0.482</td>
<td>Valid</td>
</tr>
<tr>
<td>Customer Service</td>
<td>0.6958</td>
<td>0.482</td>
<td>Valid</td>
</tr>
<tr>
<td>Online Purchase Decisions</td>
<td>0.9516</td>
<td>0.482</td>
<td>Valid</td>
</tr>
</tbody>
</table>

Source: Processed data, 2023

The R table value obtained from the table with 20 respondents, with ($df = 20-3 = 17$) is 0.482, while the table above shows the product review correlation value is 0.5910, the customer service value is 0.6958 and the online purchasing decision value is 0.9516, so all the variable is $> \text{Sig } 5\%$ or 0.05 so it can be said that the variable has a valid value. Next, the reliability test can be seen from the table below:
Table 3 Reliability Test Results
Test scale = mean(unstandardized items)

Average interitem covariance: .5494444
Number of items in the scale: 3
Scale reliability coefficient: 0.6241
Source: Processed data, 2023

Table 4 Reliability Test Recapitulation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Results</th>
<th>Table Cronbach Alpha (α)</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Review</td>
<td>0.6241</td>
<td>0.6</td>
<td>Reliable</td>
</tr>
<tr>
<td>Customer Service</td>
<td>0.6241</td>
<td>0.6</td>
<td>Reliable</td>
</tr>
<tr>
<td>Online Purchase Decisions</td>
<td>0.6241</td>
<td>0.6</td>
<td>Reliable</td>
</tr>
</tbody>
</table>
Source: processed data, 2023

In the table above, it can be seen that the reliability testing in the research has a Cronbach’s Alpha value of 0.6241. In accordance with the requirement that product review and customer service variables on online purchasing decisions have a Cronbach’s Alpha value of more than > 0.60, it can be concluded that all variables are included in the Reliable category.

Classic Assumption Test
The Normality Test is carried out to determine whether the relationship between the independent variable and the dependent variable has a normal distribution or not. A good regression model is to have normal data or close to normal data. If the Kolmogrov-Smirnov significance value is > the predetermined significance value (0.05) then the data is normally distributed. On the other hand, if the Kolmogrov-Smirnov significance value is < the predetermined significance value (0.05) then it can be said that the data is not normally distributed. (Sari, 2021).

Table 5 Normality Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>W</th>
<th>V</th>
<th>z</th>
<th>Prob&gt;z</th>
</tr>
</thead>
<tbody>
<tr>
<td>product</td>
<td>25</td>
<td>0.98755</td>
<td>0.346</td>
<td>-2.170</td>
<td>0.98501</td>
</tr>
<tr>
<td>customer</td>
<td>25</td>
<td>0.98024</td>
<td>0.549</td>
<td>-1.226</td>
<td>0.88982</td>
</tr>
<tr>
<td>online</td>
<td>25</td>
<td>0.96532</td>
<td>0.964</td>
<td>-0.076</td>
<td>0.53010</td>
</tr>
</tbody>
</table>
Source: processed data, 2023

The Kolmogrov-Smirnov significance value above shows product, customer and online values of 0.985 and 0.889 and 0.530, which means it is greater than the significance value > 0.05. So, it can be concluded that the data above is normally distributed.

Multicollinearity Test
According to (Hartini et al., 2022)This multicollinearity test is to determine whether the regression model has a correlation or not between the independent variables. The multicollinearity criteria are a VIF value < 10 and a value of 1/VIF, Tolerance > 0.10, meaning that
the regression model in the study is free from multicollinearity. Multicollinearity Test Results can be seen in the following table:

Table 6 Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>customer</td>
<td>1.01</td>
<td>0.988956</td>
</tr>
<tr>
<td>product</td>
<td>1.01</td>
<td>0.988956</td>
</tr>
</tbody>
</table>

Source: processed data, 2023

The results of the statistical statistics output show that the VIF value is 1.01, meaning < 10 and the 1/VIF value is 0.988, so that > 0.1, it can be concluded that the tolerance value of the two independent variables is more than 0.10 and the VIF is less than 10. Thus, it can be stated all independent variables did not experience symptoms of multicollinearity (passed the multicollinearity test) so that the data could be used for further research.

Heteroskedasticity Test

According to (Hutasuhut et al., 2023)The heteroscedasticity test is used to determine whether in the regression model there is an inequality in the variance of the residuals from other observations.(Fadli, 2021)states that the significance value is > 0.05, it can be said that heteroscedasticity does not occur, it can be seen as follows:

Table 7 Heteroscedasticity Test Results

<table>
<thead>
<tr>
<th>Breusch-Pagan / Cook-Weisberg test for heteroskedasticity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ho: Constant variance</td>
</tr>
<tr>
<td>Variables: fitted values of online</td>
</tr>
<tr>
<td>chi2(1) = 0.00</td>
</tr>
<tr>
<td>Prob &gt; chi2 = 0.9453</td>
</tr>
</tbody>
</table>

Source: processed data, 2023

In the table above, it is known that the heteroscedasticity test value is 0.9453, this shows > 0.05, so it can be concluded that heteroscedasticity does not occur (passes the heteroscedasticity test) and the regression model is free from heteroscedasticity problems.

Multiple Linear Regression Analysis

According to (Iwan et al., 2022) multiple linear regression analysis is used to see whether there is an influence of product reviews and customer service on online purchasing decisions with the following results:

Table 8 Multiple Linear Regression Test Results

| online | Coef.  | Std. Err. | t     | P>|t|  | [95% Conf. Interval] |
|--------|--------|-----------|-------|------|------------------|
| product| .7184906| .1449961  | 4.96  | 0.00 | .4177871 - 1.019194 |
| customer| .7198185| .1271565  | 5.66  | 0.00 | .456112 - .983525 |
| _cons  | -10.37756| 4.777379  | -2.17 | 0.041| -20.28524 - .469881 |

Source: processed data, 2023
Based on the table above, the results of the multiple linear regression equation are obtained as follows:

\[ Y = -10.37756 + 0.7184X_1 + 0.71981X_2 + \epsilon \]

Based on the results above, the constant value is -10.37756, indicating that if the product review and customer service value is 0, then the value of the online purchasing decision variable is -10.37756, while the regression coefficient (\( \beta \)) review increased by 1 unit results in purchasing decisions increasing by 1 unit amounting to 0.7184 and the regression coefficient (\( \beta \))

**Hypothesis Testing**

The purpose of hypothesis testing is to decide whether the hypothesis being tested is rejected or accepted (Al-faida, 2023), shows \( \text{Df} = n - k - 1 \), then we get \( \text{ttable} = 1.985 \). The following are the results of the t test which can be seen as follows:

**Table 9 Partial Hypothesis Results (t Test)**

|        | Coef.  | Std. Err. | t      | P>|t| | [95% Conf. Interval] |
|--------|--------|-----------|--------|--------|----------------------|
| product | 0.7184906 | 0.1449961 | 4.96   | 0.000  | 0.4177871 - 1.019194 |
| customer | 0.7198185 | 0.1271565 | 5.66   | 0.000  | 0.456112 - 0.983525  |
| _cons  | -10.37756 | 4.777379 | -2.17  | 0.041  | -20.28524 - 4.69881  |

Source: processed data, 2023

It is known that the intuitive t calculated product review coefficient is \( 4.96 > t_{\text{table}} 2.066 \), there is a significant and significant influence of product reviews on online purchasing decisions (0.000 < 0.05), meaning that partially the product review variable (X1) has a significant effect on the online purchasing decision variable (Y), and Partial t test of the customer service variable (X2) on the purchasing decision variable (Y) shows that the tcount for the customer service coefficient is \( 5.66 > t_{\text{table}} 2.066 \). So the hypothesis which states that there is a significant influence of customer service on online purchasing decisions is accepted and is significant < 0.000 (0.000 < 0.05), meaning that the partial customer service variable (X2) has a significant effect on the online purchasing decision variable (Y), so the hypothesis (H1) There is a significant positive influence of product review and customer service variables on online purchasing decisions.

**F Test (Simultaneous)**

In this study, the aim is to determine the influence of all independent variables on the dependent variable, here are the results of the model feasibility test (f test) as follows:

**Table 10 Simultaneous Hypothesis Test Results (f Test)**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs =</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F(2, 22) =</td>
<td>25.64</td>
</tr>
<tr>
<td>Model</td>
<td>30.9566095</td>
<td>2</td>
<td>15.4783047</td>
<td>Prob &gt; F =</td>
<td>0.0000</td>
</tr>
<tr>
<td>Residual</td>
<td>13.2833905</td>
<td>22</td>
<td>0.603790478</td>
<td>R-squared =</td>
<td>0.6997</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Adj R-squared =</td>
<td>0.6724</td>
</tr>
<tr>
<td>Total</td>
<td>44.24</td>
<td>24</td>
<td>1.84333333</td>
<td>Root MSE =</td>
<td>0.77704</td>
</tr>
</tbody>
</table>

Source: processed data, 2023
The table above shows that from the results of the f test, an f value calculated as a significance value of 0.000. Therefore significance is smaller than <0.05. So it can be concluded that each variable from product reviews and customer service influences online purchasing decisions simultaneously.

**Coefficient Of Determination (R²)**

According to Ghozali in(Stawati, 2020)Testing the coefficient of determination is shown by the adjusted R Square value measuring how far the model's ability to explain variations in the independent variables

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs = 25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>30.9566095</td>
<td>2</td>
<td>15.4783047</td>
<td>F(2, 22) = 25.64</td>
</tr>
<tr>
<td>Residual</td>
<td>13.2833905</td>
<td>22</td>
<td>.603790478</td>
<td>Prob &gt; F = 0.0000</td>
</tr>
<tr>
<td>Total</td>
<td>44.24</td>
<td>24</td>
<td>1.8433333</td>
<td>Adj R-squared = 0.6724</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Root MSE = .77704</td>
</tr>
</tbody>
</table>

Source: processed data, 2023

Based on the table, it can be explained that the results of the coefficient of determination test obtained an Adjusted R Square (Adjusted R²) value of 0.6724. Based on the Adjusted R², it can be concluded that the magnitude of the influence of the product review and customer service variables on online purchasing decisions is 67.24%, while the rest is influenced by other variables outside the research. These are things like motivation, performance and offline purchases.

**DISCUSSION**

**The Influence Of Product Reviews On Purchasing Decisions**

The results of the t test hypothesis test show that product reviews have a positive influence on purchasing decisions. It is known that the calculated t for the product review coefficient is 4.96 > ttable 2.066. There is a significant and significant influence of product reviews on online purchasing decisions (0.000 < 0.05), meaning that it is partially variable. Product reviews (X1) have a significant effect on the online purchasing decision variable (Y) so that the hypothesis (H1) is that there is a significant positive influence of the product review and customer service variables on online purchasing decisions. This is in line with previous research conducted by(Rarung et al., 2022)which shows a significant influence on purchasing decisions, this is because products on online sites are promoted by providing correct, clear, effective and efficient information.

**The Influence Of Customer Service On Purchasing Decisions**

The results of the f test hypothesis show that customer service has a positive effect on online purchasing decisions. and and a partial t test for the customer service variable (X2) against the purchasing decision variable (Y) that the count for the customer service coefficient is 5.66 > ttable 2.066. So the hypothesis which states that there is a significant influence of customer service on online purchasing decisions is accepted and is significant < 0.000 (0.000 < 0.05), meaning that the partial customer service variable (X2) has a significant effect on the online purchasing decision variable (Y). This is in accordance with research(Nafingatunisak & Hirawati, 2022)that online customer ratings have a positive and significant influence on product...
purchasing decisions, thereby providing convenience, accuracy and friendliness in serving consumers.

The Influence Of Product Reviews And Customer Service On Online Purchasing Decisions

The results of the coefficient of determination test show that product reviews and customer service have a significant positive effect on online purchasing decisions, indicating that from the results of the f test, the calculated f value is a significance value of 0.000. Therefore significance is smaller than <0.05. So it can be concluded that each variable from product reviews and customer service influences online purchasing decisions simultaneously so that products on online sites must be displayed informatively on a regular basis and provide appropriate knowledge that the product or service offered has value or benefits in meeting consumer needs effectively and efficiently.

CONCLUSION

The conclusion of this research departs from the research objective of understanding choices: product reviews and customer service as determinants of online purchasing decisions show a positive relationship and customer service shows a significant positive relationship with online purchasing decisions, in addition to the role of social media such as Instagram, YouTube, Facebook and online sites. others are able to provide effective and efficient information regarding the products and services offered in order to make purchasing decisions, but the most important thing is innovation and technology that has developed to facilitate capabilities, ease of access and the right quality of service and is able to reach all consumers to find out more about the benefits and value of the product. which is effective and efficient so that the aim is not only to encourage consumers to make online purchasing decisions but is able to expand market share not only in one region but also extends to other regions and even reaches national and international markets.

SUGGESTION

Research on understanding choices: product reviews and customer service as determinants of online purchasing decisions, that the author can provide suggestions related to product reviews, customer service and purchasing decisions, focus more on accurate and objective product information about products that will be marketed using appropriate language. clear and easy for consumers to understand, while paying more attention to consumer product needs so that consumers receive efficient service in making choices by focusing on clear product specifications, product design performance, and product benefit value so as to produce speed, friendliness in every product service process to create consumer satisfaction in making purchasing decisions.

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