

## Consumer Reviews, Ratings, and Gamification on Muslim Millennials' Online Purchasing Decisions

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### ABSTRACT

Since previous research on the relationship among Online Consumer Review (OCR), ratings, gamification, and online purchasing decisions had mixed results, this study involves trust as a mediating variable, which has never been explored in previous research, to explore online consumer reviews, ratings, and gamification in increasing trust of Muslim Millennials for online purchasing decisions. Investigating Muslim millennials in Central Java and Yogyakarta, 114 questionnaire results were analyzed using Structural Equation Model. The results showed that OCR and ratings affect Muslim Millennials' online purchasing decisions at Shopee, while gamification cannot affect them. Trust in this research model could not affect purchasing decisions. Thus, the trust could not be a mediating variable. The results of this study will be useful for Micro, Small and Medium Enterprises (MSMEs) and the online shops development team to maintain the image of an online store.

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## Introduction

People who were born between 1981 and 1996 are known as the Millennial generation, and by 2022, they will age from 26 to 41 (Rizal, 2021). Millennials are encouraged to do business using online platforms because they currently live in a highly mobile world and have access to internet resources (Yu & Huang, 2022). In 2022, the

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majority of the millennial generation will be financially independent. That is, they receive a stable income. Rationally, money gained is not spent; rather, it is managed with mature thinking. However, [Faiza and Firda \(2018\)](#) explain that the millennial generation does not have mature judgment when it comes to spending money. This is a result of their limited capacity for long-term thought. Additionally, they can conduct financial transactions with great ease for them in this internet era.

One of the favorite shopping places for millennials is Shopee. Shopee is an online marketplace for sales and purchases. Many MSMEs benefit from the availability of online platforms. According to the Ministry of Cooperatives and MSMEs, 4.8 million MSMEs have used online platforms to market their products ([Yuniar, 2021](#)). This correlates with the development and rising popularity of information technology. The advancement of information technology has generated a lot of positive feedback in the current digital era. One of them is the emergence of new business prospects that use the internet network for their operations ([Pereira & Romero, 2017](#)).

Nowadays, using the internet for browsing is a need, especially if the activity takes place in a friendly environment like Central Java ([Rofiyandi, 2012](#)) and Yogyakarta ([Hiru, 2022](#)), which is well-equipped with Wi-Fi. Even if it's simple, further study is necessary because Muslim millennials may not always be tempted by this ease of use. Muslims conduct their activities according to Shariah law, including their economic affairs. There are binding regulations about religion when dealing with technology, notably financial matters. Muslims are extremely cautious and use their faith as a moral code ([Basri & Maulana, 2018](#)). Given these circumstances, it is critical to look into whether Millennial Muslims could find Shopee's Online Consumer Reviews (OCR), ratings, and gamification appealing and use them to make purchasing decisions.

OCR, ratings, and gamification are the features of Shopee. They were selected as independent variables in this study since it is believed that they can affect consumers' purchasing decisions when they use Shopee. OCR displays customers' testimonials. Ratings show product ratings by purchasers. Gamification such as Shopee Lucky Prize, Shopee Tanam, Shopee Candy, Shopee Bubble, Shopee Claw, Shopee Link, Shopee Poly, and Shopee Shake – can be played by Shopee customers. For customers to make decisions, the useful information from these three elements is unquestionably essential ([Filiari et al., 2018](#)).

OCR has a significant effect on consumer purchasing decisions ([Sholichin & Wisnalmawati, 2021](#); [Wandira & Rahman, 2021](#)). Along with OCRs, Shopee also offers a rating option for customers. Purchasers who have completed transactions can respond to the seller's performance by pressing one to five stars. According to [Arbaini \(2020\)](#) and [Johan et al. \(2021\)](#), the five-star rating system can help users make purchasing decisions. However, different studies ([Arbaini, 2020](#); [Johan et al., 2021](#); [Putri et al., 2022](#)) revealed different results that the star ratings had no significant effect on purchasing behavior. The last feature provided by Shopee is gamification. [Xu et al. \(2020\)](#), [Yu and Huang \(2022\)](#), and [Willis and Tjhin \(2021\)](#) describe that gamification has an effect on purchasing decisions. However, in contrast, [Ali \(2020\)](#) said that gamification has no effect on purchasing decisions. Trust can be used as an intervening variable in the relationship between online reviews and purchasing decisions. This statement can be proven by the greater total effect if it passes the trust variable ([Agesti et al., 2021](#)).

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This research is significant since the results of earlier studies on OCR, ratings, gamification, and online purchasing decisions are inconclusive. In addition, the existence of trust as a mediating variable is a novelty that has never been explored in previous research. Moreover, the survey was conducted among millennials in Central Java and Yogyakarta. [Dihni \(2022\)](#) said that in 2021-2022, the millennial generation made up the largest part of the total number of online shoppers. However, this research was narrowed down to only examining Muslim millennials to answer whether OCR, ratings, and gamification can affect those who comply with the Qur'an and Hadith in their conduct.

In addition, this study also wants to see whether trust can mediate these variables. This is because customers allegedly decided to buy products because they believed in OCR, ratings, and gamification. [Abadi et al. \(2018\)](#) emphasize that an online transaction will not happen without trust. The results of this study can help e-commerce, particularly Shopee, to find out the usefulness of these features and to consistently deliver features that meet customer needs. Entrepreneurs from MSMEs can also compare the features of different marketplaces to pick the one where they wish to sell.

### *Hypotheses Development*

#### **Online Consumer Reviews**

When making an online purchase, product display is still a factor considered when making a purchase. The quality of information is part of the sustainability of e-commerce. According to [Li and Lin \(2006\)](#), the quality of information is determined by its completeness, level of accuracy, currency relevance, and ease of access. Products with good quality will help users in determining the best purchase ([Alkilani et al., 2012](#)).

There are several attempts made by online shoppers before making a product purchase, such as looking for quality information that is accurate and complete, until they are ready to make a decision ([Chih-Hung et al., 2009](#)). One important source of information that can be used as a basis for potential purchasers to look into the quality of a product is OCRs ([Zhu & Zhang, 2010](#)). OCRs include reviews of online-purchased goods ([Park & Lee, 2009](#)). According to [Forsythe et al. \(2006\)](#), OCRs can be used as suggestions for potential purchasers who want to purchase the products discussed in the OCRs.

OCR is a form of word-of-mouth communication in online sales ([Filiari, 2015](#)), where prospective buyers learn about products from customers who have experienced buying the products. Electronic Word of Mouth (eWOM) is defined as a positive or negative statement made by people who will buy a product, people who have purchased a product, or anyone who wants to comment on a product ([Hennig-Thurau et al., 2004](#)). As a result, potential purchasers will find it easier to find comparisons with other similar products without having to visit different sellers directly ([Yasmin et al., 2015](#)).

OCRs are a place to provide testimonials for consumers who have purchased products from marketplaces such as Shopee. Potential buyers can determine whether there is trust in the goods by reading OCRs, particularly if the OCRs indicate positive reviews ([Prastiwi & Rohimat, 2020](#)). It is indicated that there is a significant effect of an online consumer reviews on trust ([Hariyanto & Trisunarno, 2021](#)).

[Constantinides and Holleschovsky \(2016\)](#) suggest that platform credibility, consumer trust, and dependence on reviews can be used as inputs in making purchasing decisions. [Sholichin and Wisnalmawati \(2021\)](#) and [Wandira and Rahman \(2021\)](#) stated that OCRs have a significant effect on consumer purchasing decisions. They are anticipated to

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assist customers in making decisions quickly based on the reviews in a short amount of time (Mo et al., 2015). Thus, the following hypothesis is put forth:

**H1:** *Online consumer reviews have a significant effect on MSME product trust at Shopee.*

**H4:** *Online consumer reviews have a significant effect on the purchasing decisions of MSME products at Shopee*

### Ratings

An average measure for rating is calculated from the score given by customers based on product purchase experience (Nieto et al., 2014). The desire to buy from online store visitors is influenced by the number of sales, reviews, and ratings (Mo et al., 2015). There are three popular rating systems, namely five-star, visual binary, and binary textual (Chen, 2017).

Ratings and trust are two important aspects of understanding consumer behavior (Matsuo & Yamamoto, 2009). Reviews with images and high ratings after them will increase trust (Ahn et al., 2021). More reviews and ratings on a product are considered the embodiment of superior performance (Nieto et al., 2014). According to Arbaini (2020) and Johan et al. (2021), the five-star rating system can help users make purchasing decisions. Thus, the proposed hypothesis is as follows:

**H2:** *Ratings have a significant effect on MSME product trust at Shopee*

**H3:** *Ratings have a significant effect on the purchasing decisions of MSME products at Shopee*

### Trust

Trust is a dimension of business relationships that relies on the integrity of the promises offered by each party (Sam & Tahir, 2009). The Theory of Trust was first popularized by Fukuyama (1996) who stated that the notion of trust is a cultural force that is impossible in the making of economic society. Trust is represented by honesty and cooperative behavior (Warren et al., 2014). According to Luhmann (1979), Trust affects how someone feels about making purchases. Additionally, building consumer trust in the digital age is essential for successful sales, since it will customers to repeat orders (Vos et al., 2014).

Currently, consumer enthusiasm for online shops is growing, resulting in the growth of online buying habits (Oghazi et al., 2018). A website with high trustworthiness helps allay any concerns that users may have. Consequently, customers may want to shop online again (Razak et al., 2014).

Instilling trust in customers is a prerequisite before they will purchase a good or service (Sam & Tahir, 2009). Several studies have shown that online trust has a significant impact on repurchase intentions. In addition, other studies also support the relationship between information quality and online repeat purchases (Widyastuti, 2018). Customer trust has a significant effect on purchasing decisions (Kim et al., 2008). As a result, the following hypothesis is formulated:

**H6:** *Trust has a significant effect on the purchasing decisions of MSME products at Shopee*

Trust has a considerable effect as an intervening variable in the relationship between country of origin and online review on purchasing decisions. Trust has a mediating effect on reviews and ratings, which influence purchase intention (Ahn et al., 2021). One study

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demonstrates how consumers' consideration of hotel offers is influenced by numerical ratings and is mediated by their level of trust (Gavilan et al., 2018). Thus, the following hypothesis is formulated:

**H7:** *Trust can mediate the effect of online consumer reviews and ratings on purchasing decisions of MSMEs' products at Shopee*

### Gamification

Gamification is the use of game-related elements in non-game systems to increase user engagement with the system (Deterding et al., 2011). Gamification is a powerful method to increase customer engagement and trigger an increase in new users (Lucassen & Jansen, 2014). Digital games have emerged as a distinct kind of interactive entertainment that people from many spheres of life love playing. Gamification is becoming a powerful way to influence users. Various gamification techniques have been used by companies over the years to encourage repeat purchases and increase customer loyalty (Shang & Lin, 2013).

Gamification has a tremendous impact on the purchase intention of a product. Yüksel (2016) research findings show that customers are strongly affected by digitized activities, especially in the purchasing decision-making process. Gamified marketplace applications are capable of repurchase intentions (Aparicio et al., 2021). Xu et al. (2020), Yu and Huang (2022), and Willis and Tjhin (2021) said that gamification has an effect on purchasing decisions. Thus, the formulated hypothesis is as follows:

**H7:** *Gamification has a significant effect on the purchasing decisions of MSME products at Shopee.*

Based on the explanation of each hypothesis' development given above, a research framework can be used to show it. The research framework is displayed in Figure 1.

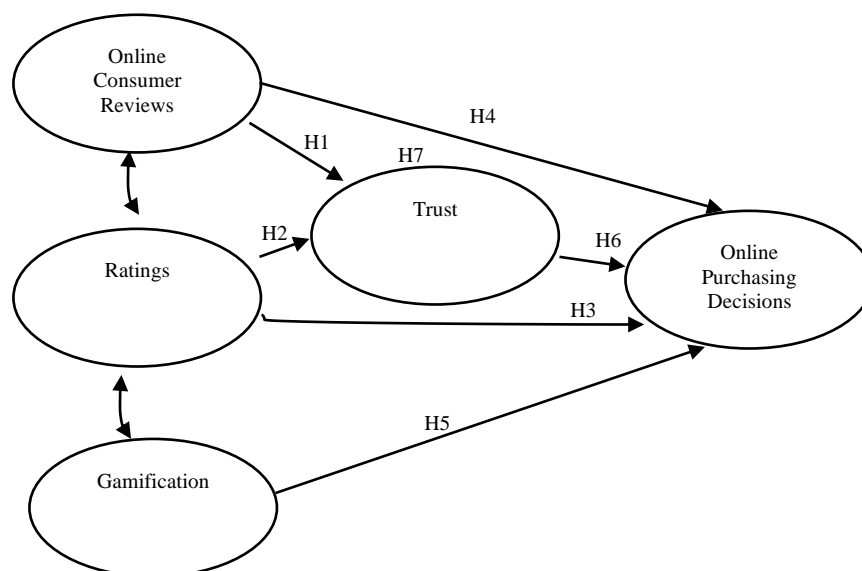


Figure 1. Research Model

The independent variables are on the left side, the mediating variable is on the middle, and the dependent variable is on the right side. The independent variables are online consumer reviews, ratings, and gamification. The mediating variable is trust, while



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the online purchasing decision serves as the dependent variable. The variable arrows connecting the variables indicate the possible influence of either the independent variable on the mediating variable, the independent variable on the dependent variable, or the mediating variable on the dependent variable.

## Method

### *Research Design*

This study used a quantitative approach with a structural equation model, which is a combination of factor analysis and path analysis. This study examines consumer purchasing behavior and examines whether the mediating variable, trust, can support the effect of OCR and trust on purchasing decisions. In addition, this study also examines whether gamification can affect online purchasing decisions for millennial Muslim consumers in Central Java and Yogyakarta. This study used a quantitative approach to see the effect of the independent variable and the mediating variable on the dependent variable using SPSS AMOS version 22.

### *Sample Selection and Data Sources*

The respondents in this research were selected using a purposive sampling technique. [Etikan \(2016\)](#) describes that purposive sampling focuses on individuals with specific criteria who are better suited to help with the pertinent study. These criteria are millennials in Central Java and Yogyakarta who have shopped online at Shopee and have played games on the application. The use of purposeful sampling improves the study's rigor and the validity of the data and results by better matching the sample to the goals and objectives of the research ([Campbell et al., 2020](#)).

The questionnaires were distributed to 165 millennial Muslims in Central Java and Yogyakarta through Google Forms. After selection, 114 questionnaires could be processed to the next stage. The rest cannot be processed because the data is incomplete. The data obtained from the questionnaire was processed using an interval measurement scale with five variables. The variable of online consumer review has dimensions such as credibility, informativeness, persuasiveness, and helpfulness ([Ruiz-Mafe et al., 2018](#)). The variable of gamification refers to the dimensions described by [Shang and Lin \(2013\)](#), namely coping, fantasy, skill development, recreation, competition, and social. While the variable ratings have the dimensions of product assessment, product or seller knowledge, and product and seller quality evaluation ([Filiari, 2015](#)). The dimension of trust refers to [Aparicio et al. \(2021\)](#), namely consumer protection, the capability to run a business, secure transactions, and the ability to be trusted. Finally, the purchase decision dimension refers to Kotler, which are product interest, evaluation of alternatives, online purchasing decisions, and post-purchase behavior.

### *Data Analysis*

The study used Structural Equation Modelling (SEM). The recommended sample size of between 100 and 200 should be used for the ML estimation method ([Ghozali, 2014](#)). Parameter estimation in SEM is generally based on the Maximum Likelihood (ML) estimation. In the ML estimation, some assumptions must be met, namely a large sample size, multivariate distribution of observed normal variables, a valid hypothesized model, and an interval variable measurement scale ([Ghozali, 2014](#)).

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## Results

### *Respondents' Characteristics*

The characteristics of respondents involved in this study are depicted in [Table 1](#).

Table 1. Respondents' Characteristics

| Criteria                                      | Category                  | Amount | %   |
|---|---------------------------|--------|-----|
| Age   | 17-20 years old           | 60     | 53% |
|   | 21-25 years old           | 46     | 40% |
|   | 26-29 years old           | 8      | 7%  |
|   |                           | 114    |     |
| Online Shopping Frequency                     | < 6 times a year          | 13     | 11% |
|   | 7-12 times a year         | 50     | 44% |
|   | more than 12 times a year | 51     | 45% |
|   |                           | 114    |     |
| Online Shopping Purchasing                    | < IDR 500.000             | 67     | 59% |
|   | IDR 600.000               | 27     | 24% |
|   | IDR 1000.000              |        |     |
|   | > IDR 1000.000            | 20     | 18% |
|   |                           | 114    |     |
| Increased online shopping during the pandemic | Yes                       | 71     | 62% |
|   | No                        | 43     | 38% |
|   |                           | 114    |     |

Of 114 respondents, 60% are aged 17–20 years. During the pandemic, 44% of respondents made online purchases through Shopee between 7-12 times a year. Meanwhile, 45% of respondents stated that they shop online more than 12 times a year. Most (59%) online shopping expenditure is in the range of IDR 500.000. The majority of respondents (62%) stated that there was an increase in online shopping during the Covid-19 pandemic.

### *Measurement Model Evaluation*

Evaluation of the measurement model is done by testing the validity and reliability tests. The results of the validity and reliability tests are presented in [Table 2](#).

Table 2. Validity and Reliability Test Results

| Variable                | Construct Reliability | Question Items   | Factor Loading | Validity   |
|-------------------------|-----------------------|--|----------------|------------|
| Online Consumer Reviews | 0.83                  | X1. I think the reviews of the purchase experience with Shopee are accurate.   | .674           | Acceptable |
|                         |                       | X2. In my opinion, the reviews of the purchase experience with Shopee provide relevant information about the products. | .682           | Acceptable |
|                         |                       | X3. In my opinion, the reviews of the  | .802           | Good       |

| Variable                    | Construct Reliability | Question Items   | Factor Loading | Validity   |
|-----------------------------|-----------------------|--|----------------|------------|
|                             |                       | purchase experience with Shopee provide honest testimonies.  | .805           | Good       |
|                             |                       | X4. I think the reviews of the purchase experience with Shopee are very useful before purchasing products. |                |            |
| Ratings                     | 0.71                  | X6. Ratings (stars) given by other purchasers help me rate the Shopee product and the seller.              | .721           | Good       |
|                             |                       | X7. Ratings (stars) given by other purchasers increase my knowledge on the products and sellers.           | .769           | Good       |
| Gamification                | 0.84                  | X9. The games at Shopee can boost my mood.   | .752           | Good       |
|                             |                       | X10. The games at Shopee can improve my ability to play games.   | .738           | Good       |
|                             |                       | X11. The games at Shopee made me happy.  | .769           | Good       |
|                             |                       | X12. The games at Shopee are quite challenging.  | .730           | Good       |
|                             |                       | X13. I like the games at Shopee because they provide giveaway prizes, coupons, etc.                        | .621           | Acceptable |
| Trust                       | 0.78                  | X14. I believe that Shopee can protect its consumers.  | .687           | Acceptable |
|                             |                       | X15. I feel safe when transacting through Shopee.  | .724           | Good       |
|                             |                       | X16. I believe that Shopee can run a good online business.   | .710           | Good       |
|                             |                       | X17. I believe that the Shopee can be trusted.   | .629           | Acceptable |
| Online purchasing decisions | 0.75                  | Y1. I am interested in purchasing products from Shopee sellers.  | .718           | Good       |
|                             |                       | Y2. I assess the product at Shopee seller before purchasing.   | .655           | Acceptable |
|                             |                       | Y3. I bought a product sold by a Shopee seller.  | .631           | Acceptable |
|                             |                       | Y4. I have a good purchasing experience with Shopee.   | .649           | Acceptable |

Some researchers use the convergent validity criterion of 0.70 because it is considered to have good validity. The convergent validity of 0.50-0.60 is still acceptable for early-stage research (Ghozali, 2014). By using the convergent validity criterion of 0.50, all loading factor indicators are above 0.50.

Construct reliability of 0.70 or more indicates good reliability. A reliability of 0.60-0.70 is still acceptable if the validity of the indicators in the model is good (Ghozali, 2014). Based on Table 2, it can be concluded that each variable in this study has good reliability,



which is above 0.70.

### **Structural Model Evaluation**

Evaluation of the structural model is carried out with the evaluation of the goodness of fit. The results of the evaluation of the goodness of fit from this study are shown in [Table 3](#).

Table 3. The Results of the Goodness-of-Fit of the Model

| <i>Goodness-of-fit Indices</i>    | <i>Cut-off Value</i> | <b>Result</b> | <b>Model Evaluation</b> |
|-----------------------------------|----------------------|---------------|-------------------------|
| <i>Chi-Square (c<sup>2</sup>)</i> | Expected small       | 603.332       | Not good                |
| <i>Sig Probability (p)</i>        | £ 0.05               | 0.000         | Not good                |
| <i>CMIN/DF</i>                    | £ 2.0                | 2.080         | Not good                |
| <i>NFI</i>                        | £ 0.9                | 0.788         | Marginal                |
| <i>RFI</i>                        | £ 0.9                | 0.870         | Marginal                |
| <i>TLI</i>                        | £ 0.9                | 0.861         | Marginal                |
| <i>CFI</i>                        | £ 0.9                | 0.876         | Marginal                |
| <i>RMSEA</i>                      | £ 0.08               | 0.098         | Not Good                |

Due to the big chi-square value and low probability value in [Table 3](#), it may be concluded that the model does not fit. In addition, the CMIN/DF value is above 2 and the RMSEA value is also above the recommended limit. The NFI, AGFI, TLI, and CFI values are still below the required value, which is 0.9. The normality of the data can be seen from the value of the Critical Ratio (CR) on skewness and kurtosis. The data is said to be normal if the CR value of multivariate kurtosis is less than 3 at a significance level of 5%. The results of the data processing show that the CR value is more than 3. Thus, the data is not normally distributed.

To meet the goodness of fit, it is necessary to modify the model. Indications of a less-fit model can be seen from the modification index (MI). In the regression weight, there are several parameters, namely Y3, x17, x14, x6, and x1, which are concluded to be invalid because they are not dimensional and must be dropped from the analysis. Next, by covariation of several residual parameters according to the MI table, the next step is to eliminate outliers based on the results of the Mahalanobis distance. The observation number whose p2 value is below 0.05 is dropped from the analysis. As a result, 13 data were discarded, so the total number of respondents involved was 101 respondents. Next, SEM was retested with AMOS 22 software. The results of the evaluation of the goodness of fit from this study are shown in [Table 4](#).

Table 4. Results of the Goodness-of-Fit of the Modified Model

| <i>Goodness-of-fit Indices</i>    | <i>Cut-off Value</i> | <b>Result</b> | <b>Model Evaluation</b> |
|-----------------------------------|----------------------|---------------|-------------------------|
| <i>Chi-Square (c<sup>2</sup>)</i> | Expected small       | 117.401       | Good                    |
| <i>Sig Probability (p)</i>        | <sup>3</sup> 0.05    | 0.79          | Good                    |
| <i>CMIN/DF</i>                    | £ 2.0                | .896          | Good                    |
| <i>NFI</i>                        | <sup>3</sup> 0.9     | 0.931         | Good                    |
| <i>RFI</i>                        | <sup>3</sup> 0.9     | 0.910         | Good                    |

| <i>Goodness-of-fit Indices</i> | <i>Cut-off Value</i> | <i>Result</i> | <i>Model Evaluation</i> |
|--------------------------------|----------------------|---------------|-------------------------|
| TLI                            | <sup>3</sup> 0.9     | 1.012         | Good                    |
| CFI                            | <sup>3</sup> 0.9     | 1.000         | Good                    |
| RMSEA                          | £ 0.08               | 0.000         | Good                    |

A low Chi-Square value will result in a probability value greater than the significance level. This indicates that the input covariance matrix between predictions and observations is not significantly different (Ghozali, 2014). The goodness of fit measurement results from this research model indicates that the model in this study is acceptable.

Based on Table 4, the small chi-square value is 117.401 with a probability value of 0.79 above 0.05. The Normed Chi-Square (CMIN/DF) is the value obtained from the division of the chi-square value to the degree of freedom. This index measures the goodness-of-fit relationship of the model with the number of estimated coefficients expected to achieve the level of conformity. CMIN/DF is the Chi-Square statistic, X<sup>2</sup> divided by the DF. According to Byrne in Ghozali (2014), a CMIN/DF value below 2.0 is a measure of fit. The CMIN/DF value in this model is 0.918, which indicates that this research model is good.

The Tucker-Lewis Index (TLI) is an incremental fit index that compares the tested model with the null model. This measure incorporates the measures of parsimony into the index of comparison between the proposed model and the null model. The TLI value ranges from 1 to 1.0. The recommended TLI value is more than 0.9 (Ghozali, 2014). Based on Table 4, the proposed model shows a good level of conformity with a TLI value of 1.009.

The Comparative Fit Index (CFI) is an incremental fit index that compares the tested model with the null model. The magnitude of this index is in the range of 0 to 1, and a value close to 1 indicates the model has a good level of conformity. The recommended CFI value to be accepted is 0.95. This index is highly recommended to be used because it is relatively insensitive to the sample size and is less affected by the complexity of the model. Taking into account the recommended value of > 0.9, the CFI value of 1,000 indicates that this model has a good fit.

The Root Mean Square Error of Approximation (RMSEA) is a measure used to correct the tendency of the chi-square statistic that is sensitive to large sample sizes. The RMSEA value that is less than or equal to 0.80 is an index for the acceptability of the model. A recommended acceptance value of 0.08 and RMSEA model value of 0.000 indicate a good level of conformity. The following are the results of the regression weights, which can be seen in Table 5.

### *The Results of Hypotheses Testing*

Table 5 displays six testing hypotheses. whereas there were seven hypotheses in this study. The seventh hypothesis was tested using a Sobel test since it involved a mediating variable. The Sobel test was used to validate the mediating variables (Bakkal et al., 2019). The Sobel test, however, turns out to be inapplicable because the results of the test for hypothesis 6 show that trust has no effect on online purchasing decisions. This can be seen from the significance value of 0.075 > 0.05, that trust has no positive and significant effect on purchasing decisions. Because trust has no effect on online purchasing decisions,

it cannot be a mediating variable. Thus, H<sub>7</sub> which says that trust can mediate the independent variable and the dependent variable is automatically rejected.

According to Baron and Kenney, testing the mediating effect must still follow the rule that testing the mediation effect can be done if the main effect (direct relationship of the independent variable to the dependent) is significant. If this does not happen, the mediation effect test cannot be continued (Hartono, 2018). H<sub>6</sub> in this study is not supported. Thus, H<sub>7</sub> is not accepted.

Table 5. Results from Regression Weights

| Hypothesis     | Independent Variable    |      | Dependent Variable          | Estimate | S.E. | C.R.  | P    |
|----------------|-------------------------|------|-----------------------------|----------|------|-------|------|
| H <sub>1</sub> | Online Consumer Reviews | ---> | Trust                       | .453     | .098 | 4.613 | ***  |
| H <sub>2</sub> | Ratings                 | ---> | Trust                       | .441     | .119 | 3.704 | ***  |
| H <sub>3</sub> | Ratings                 | ---> | Online Purchasing Decisions | .491     | .122 | 4.027 | ***  |
| H <sub>4</sub> | Online Consumer Reviews | ---> | Online Purchasing Decisions | .226     | .088 | 2.560 | .010 |
| H <sub>5</sub> | Gamification            | ---> | Online Purchasing Decisions | .041     | .047 | .879  | .379 |
| H <sub>6</sub> | Trust                   | ---> | Online Purchasing Decisions | .194     | .109 | 1.778 | .075 |

The hypothesis testing indicated a significant and positive effect of online consumer reviews on trust, with a significance value of  $p = 0.000$  and a parameter value of 0.453. Thus, H<sub>1</sub> is accepted. Second, the test results of H<sub>2</sub> indicated a significant and positive effect of ratings on trust. The test results show that the p-value is 0.00 and the parameter value is 0.441. therefore, H<sub>2</sub> is accepted. The test results of H<sub>3</sub> indicated that there is a significant and positive effect of ratings on purchasing decisions, with a significance value of  $p = 0.000$  and a parameter value of 0.491. The significance value is 0.000 0.05, meaning that statistically, the ratings have a positive and significant effect on purchasing decisions. Thus, H<sub>3</sub> is accepted. The results of H<sub>4</sub> indicated that there is a significant and positive effect of OCRs on purchasing decisions, with a significance value of 0.010 and a parameter value of 0.303. The significance value is 0.010 0.05. That is, statistically, online consumer reviews have a positive and significant effect on purchasing decisions. So, H<sub>4</sub> is accepted. Next, there is no significant positive effect of gamification on purchasing decisions because the p-value of 0.379 is greater than 0.05. Thus, H<sub>5</sub> was rejected. Lastly, there is a significant and positive effect of trust on purchasing decisions with a significance value of  $p = 0.075$  and a parameter value of 0.194. The significance value is  $0.075 > 0.05$ , meaning that trust has no positive and significant effect on online purchasing decisions. This means that H<sub>6</sub> is rejected. The summary of hypotheses testing results is presented in Table 6.

Table 6. Hypothesis Test Results

| Hypothesis | Statement   | Results      |
|------------|---|--------------|
| H1         | Online consumer reviews have a significant effect on MSME product trust at Shopee.  | accepted     |
| H2         | Ratings have a significant effect on MSMEs' product trust at Shopee.  | accepted     |
| H3         | Ratings have a significant effect on the purchasing decisions of MSMEs' products at Shopee.                               | accepted     |
| H4         | Online consumer reviews have a significant effect on the purchasing decisions of MSMEs' products at Shopee.               | accepted     |
| H5         | Gamification has a significant effect on the purchasing decisions of MSMEs' products at Shopee                            | not accepted |
| H6         | Trust has a significant effect on the purchasing decisions of MSMEs' products at Shopee.                                  | not accepted |
| H7         | Trust can mediate the effect of online consumer reviews and ratings on purchasing decisions of MSMEs' products at Shopee. | not accepted |

## Discussion

Results of data analysis show that online consumer reviews have a positive and significant effect on trust. A lot of people acknowledge that consumer reviews of online sellers at Shopee are reliable and relevant. As a result, these reviews can be helpful when deciding whether to buy a product. The results of this study supported the research results conducted by [Hariyanto and Trisunarno \(2021\)](#), [Constantinides and Holleschovsky \(2016\)](#), and [Agesti et al. \(2021\)](#) that online consumer reviews have a significant effect on trust. Shopee maintains product quality and provides good service to purchasers. This is because there will be reviews after the transaction is completed. It came out that the evaluation affected customer trust.

It was also found that ratings have a significant effect on trust. These ratings help other Shopee prospective buyers evaluate alternative products. The vast majority of survey participants concur that users of Shopee can assess products using the ratings provided by previous buyers. In addition, it can also be used as a reference to increase user knowledge about the product and the seller performance. MSMEs that sell on Shopee keep up with improvements to their sales services and product quality since customers can give star ratings ranging from 1 to 5 stars. This study is in line with the results of research conducted by [Ahn et al. \(2021\)](#) that a high rating with a review and image will increase customer trust.

This study proves that ratings have a positive and significant effect on purchasing decisions, the results of this study support the results of [Arbaini \(2020\)](#) and [Johan et al. \(2021\)](#) that the 5-star rating system can help Shopee users make purchasing decisions and make it more enjoyable to shop online. On the search page or the product information page, prospective buyers can view product ratings. The ratings can also increase the knowledge of potential purchasers about the product and the seller. The ratings provide an important reference for prospective purchasers because they indicate the level of satisfaction with previous purchases. The results of the study also prove that ratings can improve product purchasing decisions in e-commerce.

This study reveals that online consumer reviews have a positive and significant effect on purchasing decisions. The result of this study is in line with Sholichin and Wisnalmawati (2021) and Wandira and Rahman (2021) that OCRs have a significant effect on consumer purchasing decisions. Reviews can provide relevant information about products and sellers at Shopee. It can be useful for decision-making before product purchase. The majority of sellers in Shopee are MSMEs, and many are still unfamiliar with the profile of the sellers of these MSMEs. There are many products out there that consumers are not familiar with. Therefore, it is essential to read consumer reviews before making a purchase decision.

Furthermore, this study demonstrates that there is no significant positive effect of gamification on purchasing decisions. Games and various promotional efforts with programs, such as games on Shopee, cannot encourage users to shop online through Shopee. Maybe it can be supported by mediating variables so that gamification can affect purchasing decisions. The results of this study contradict the results of research by Aparicio et al. (2021), Xu et al. (2020), Yu and Huang (2022), and Willis and Tjhin (2021) that gamification has an effect on the use of marketplace and can increase the repurchase intention.

This study indicates that trust has no positive or significant effect on online purchasing decisions. The results of this study contradict the results of Kim et al. (2008), that trust has a significant effect on consumer purchasing decisions. Many other considerations make users shop online at Shopee.

During the pandemic, which affects the business continuity of MSMEs, digital platforms are a solution for MSMEs to survive. The availability of a marketplace to be used as an online selling platform is one thing that can be trusted. Additionally, there has been an increase in online shopping, which indicates that 62% of respondents increased their expenditure during the pandemic and that 89% of respondents purchase online 7-12 times per year. Interesting features such as reviews, ratings, and gamification provided by Shopee can support users to get to know and get more information about the products sold on Shopee.

The results of this study were unexpected because they did not support some hypotheses. Hypotheses 1, 2, 3, and 4 were accepted, while hypotheses 5, 6, and 7 were not accepted. This research tested the effects of OCRs ( $H_4$ ), ratings ( $H_3$ ), and gamification ( $H_5$ ) on purchasing decisions. But, only two of them, the OCRs and ratings, have a positive and significant effect on purchasing decisions. On the other hand, gamification has no effect on purchasing decisions. It means the OCRs and ratings turned out to be very useful for potential purchasers to assess alternative products and seller profiles before deciding to purchase. The results of this study thereby confirm the research of Sholichin and Wisnalmawati (2021), Wandira and Rahman (2021), Arbaini (2020), and Johan et al. (2021).

Since there is gamification in Shopee, a unique way of shopping has emerged by playing the game to get prizes that can be used for shopping. However, it turns out that gamification is not able to affect Millennial Muslims to shop. The inability of gamification in influencing online purchasing decisions does not support research carried out by Xu et al. (2020), Yu and Huang (2022), and Willis and Tjhin (2021).

In this study, trust ( $H_6$ ) has no effect on purchasing decisions. The next test, which was supposed to employ the Sobel test to determine the effect of the mediating variable, cannot be done because it has no effect (Bakkal et al., 2019). Trust ( $H_7$ ) still not be a



mediating variable even though OCRs (H<sub>1</sub>) and ratings (H<sub>2</sub>) affect trust. These constraints can be simplified as shown in Figure 2.

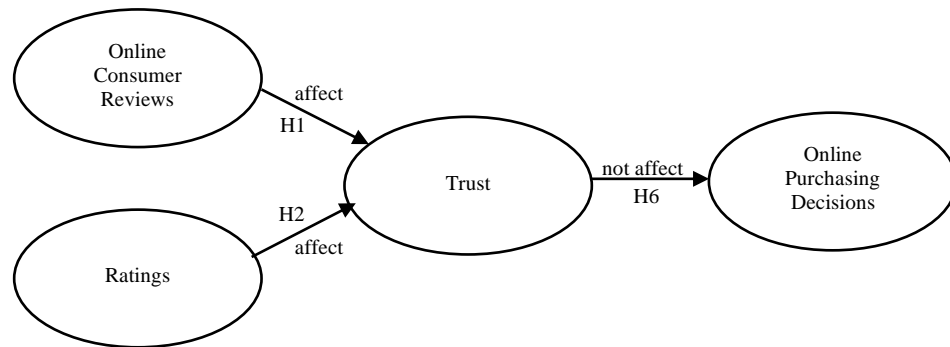


Figure 2. Constraints of Mediation Test

OCRs (H<sub>1</sub>) and ratings (H<sub>2</sub>) affect trust. However, trust (H<sub>6</sub>) cannot affect online purchasing decisions. Thus, automatically, trust cannot be a mediating variable. If trust affects online purchasing decisions, it may be possible to test the mediating variable and it may also be possible for trust to be a mediating variable. However, the reality in this study says otherwise that trust cannot mediate between OCRs and ratings on online purchasing decisions.

Figure 2 proves that although OCRs and ratings increase trust for millennial Muslims, it cannot affect them to make a purchase. It is suspected that other factors can affect it, which may be related to the religious teachings they profess. Hardiyanto (2017) said that Muslims tend to be careful in determining what they will purchase. Indeed, OCRs and ratings increase trust because, from these two features, prospective purchasers can find out the quality of products sold at Shopee. However, there are other considerations for millennial Muslims to make a purchase.

Trust, which cannot be a mediating variable, is the most surprising result in this study. Although the majority of respondents agreed that Shopee can provide consumer protection and users feel safe transacting through the application, they are not factors that encourage users to purchase products from Shopee. In this study, OCR and ratings are proven to encourage millennial Muslim consumers to make purchases through the marketplace. There may be other variables besides OCR and ratings that can drive purchasing decisions in the millennial generation.

## Conclusion

This study proves that OCR and ratings can affect Muslim Millennials' online purchasing decisions at Shopee, while gamification cannot affect them. Trust in this research model could not affect purchasing decisions. Thus, trust cannot serve as a mediating variable. The results of this study are expected to provide an overview for SMEs as well as sellers to maintain the quality of products and services in online shopping. This is because the shopping experience of other users becomes a consideration for prospective buyers. There may be additional variables that are assumed to mediate purchasing decisions; this is a potential area for further research. Shopee sellers are expected to keep

positive ratings and reviews to influence potential customers to purchase their products. It is anticipated that a partnership between MSMEs and Shopee will work effectively and be advantageous for both parties.

### Authors' Declaration

The authors made substantial contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation, and discussion of results. The authors read and approved the final manuscript.

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