

# Effect of Product Rating and Product Sold on Purchase Intention, Consumer Confidence, and Perceived Risk in Online Marketplace

**Rahmatiar Chandra Rachim**

Master of Management in Business Management  
BINUS Business School  
BINUS University  
Jakarta, Indonesia  
rahmatiar.rachim@binus.ac.id

**Yokogiru A.V. Simanjuntak**

Master of Management in Business Management  
BINUS Business School  
BINUS University  
Jakarta, Indonesia  
yokogiru.simanjuntak@binus.ac.id

**Primidya K. Miranda Soesilo**

Head of Business Management and Marketing Program  
BINUS Business School  
BINUS University  
Jakarta, Indonesia  
pmiranda@binus.edu

## Abstract

This study aims to determine the effect of product rating and product sold information presented in the online marketplace on perceived risk, consumer confidence, and purchase intention. Furthermore, this study investigates whether the interaction of product rating and product sold in an online marketplace can help consumers increase purchase intention, consumer confidence, and perceived risk. In study 1 on product ratings, it was found that respondents with high rating conditions had higher purchase intention and consumer confidence than respondents with vulnerable rating conditions. On the other hand, when the product rating is high, the perceived risk will be lower.

Meanwhile, in Study 2 regarding product sold, it was found that respondents with high product sold conditions had higher purchase intention and consumer confidence than those with low rating conditions. On the other hand, when the product rating is sold, the perceived risk will be lower. However, the results of study 3 show that there is no significant effect on the interaction between product rating and product sold on purchase intention, consumer confidence, and perceived risk, where the results when the product rating is high but product sold is low, then purchase intention and consumer confidence are higher. high when the product rating is high even though the product sold is low, and the perceived risk is lower when the product rating is low but the product sold is high. The methods used in this research are reliability test using Cronbach Alpha test and validity test using Kaiser Meyer Okin (KMO) to test study 1 and study 2, and ANOVA method using Two-Way ANOVA to test study 3.

## Keywords:

Product rating, product sold, purchase intention, consumer confidence, perceived risk

## 1. Introduction

Today, online shopping activities have become a habit of society amid the development of globalization that is increasingly complex and increasingly competitive. There are many online marketplaces that can be found on the internet, ranging from Tokopedia, Bukalapak, Lazada, to Shopee. Of course, each online marketplace will compete in providing the best service, as well as systems and displays that can convince someone to buy goods (Ikranegara 2017).

The presence of online marketplace will make it easier for consumers to make purchases, where consumers no longer need to come to the store directly, but consumers only need to visit online shopping sites available on the internet (Mulyati 2020, pp. 173-194). In other words, consumers no longer need to go out of the house if they want to shop for something, just by using a smartphone, laptop, or notebook used for internet access and various other social media applications. In general, service-oriented businesses such as hotels, hospitals, theaters, shopping malls, and amusement parks, almost all of them provide online businesses with the help of the internet.

Before consumers make a purchase, usually they will look for information about the desired product or product that is being offered by an online store, one of which is information about how popular the product to be purchased by consumers, such as paying attention to product rating and product sold. By displaying product rating and product sold information, retailers can remind consumers that a product is available and popular. If a product is more popular, it tends to be interpreted as a signal that the product has a higher quality or value, especially when consumers have little other information available about the offering (Cialdini et al. 2004). This suggests that retailers can strategically display sales information and stock levels to build and reinforce consumer perceptions of product popularity and quality. In other words, the retailer can also affect the buying interest of consumers towards a product.

In the world of online marketplaces, consumers can find a lot of online stores, where not all of them present goods with the original brand. Sellers sometimes sell counterfeit goods with well-known brands. Of these counterfeit products, some have good quality at high prices and there are also those who sell at ordinary quality at relatively cheaper prices so that it makes consumers understand it as a genuine item. Shopping online requires trust because it is not easy to build trust between sellers and online shoppers. Of course, the customer's trust or commonly called consumer confidence will affect the purchase intention of the product. Trust between buyers and sellers is indispensable in online transactions (Piccaully 2018).

Previous literature tested related online customer reviews as information that is able to influence consumer purchase intentions (Farki 2016). Meanwhile, other research such as describing the influence of trust on purchase intentions, where confidence has a significant influence on purchase intentions in online marketplaces. It is mentioned that to optimize purchase intentions, there needs to be a sense of trust between consumers and online marketplace companies, for example by increasing the sense of security and keeping frauds from occurring in transactions (Hadejayanti 2018).

In addition, several studies have been conducted into separate effects of sales and stock information, such as the research of Huang and Zhang (2015), Parker and Lehmann (2011), Robinson et al. (2016), Steinhart et al. (2013), Tucker and Zhang (2011), and Van Herpen et al. (2009), but no previous studies have systematically compared the effects of sales and stock information that could influence purchase intentions, consumer confidence, and perceived risk, and it has not been spelled out how consumers respond to such information when sales and stock levels are presented simultaneously. Previous literature related to product rating and sold product above is an area that is less widely researched because many studies focus on cues or information presented separately. Therefore, this research aims to describe something more complex in relation to the online marketplace, namely testing the interaction of product rating and product sold on an online marketplace that can affect purchase intention, consumer confidence, and perceived risk. In other words, this study tries to complement the research gap in this area.

## 1.1 Objectives

Based on the background of the research that has been described above, the researchers hereby describe the objectives of the research, which are as follows:

1. Testing the positive impact of product rating on purchase intention
2. Testing the positive impact of product rating on consumer confidence
3. Testing the positive impact of product rating on perceived risk
4. Testing the positive impact of product sold on purchase intention
5. Testing the positive impact of product sold on consumer confidence

## **2. Literature Review**

### **2.1 Product Rating**

Rating is part of a review that uses the form of a star symbol rather than text in expressing opinions from customers. Rating can be interpreted as an assessment of the user's preference for a product to their experience referring to the psychological and emotional state they live in when interacting with virtual products in the environment. Online ratings and reviews have become standard features for online marketplace companies, where these companies need to provide product usage and information to potential buyers. (Kang and Namkung 2019).

Thakur (2018) stated that "online consumer reviews have a significant influence on consumer behavior and have become an important source of information for consumers, influencing as many as 20-50% of all online purchase decisions". Moe and Schweidel (2012) relate the rating to the level of customer decision making. They found that the effect of the customer's rating on the rating before deciding to buy something depends on how often the rating or rating is done by this customer on a product.

### **2.2 Product Sold**

According to Cueutilization theory, consumers integrate and use several external and internal cues to evaluate product quality before they make a purchase (Anderson 1981 and Olson 1972). Yongfu He (2017) adds that sales information has a very large diagnostic value than stock level information in making purchasing decisions. Consumers are influenced by the actions of others because they believe other people's decisions reflect information they did not have before, such as product stock (Balachander et al. 2005). Consumers will use popularity as a "social security" for the attractiveness of a product (Cialdini et al. 2004).

### **2.3 Purchase Intention**

Purchase intention is the tendency to buy a brand and is generally based on the suitability of the purchase motive with the attributes or characteristics of the brand that can be considered (Belch 2004). Consumer intentions in analyzing a product brand go through 6 (six) processes, namely awareness of the desired product (awareness), knowledge of the brand (knowledge), interest (interest), preference (preference), trust (persuasion), and purchase (purchase). (Kotler 2014). Online purchase intention is a situation when a customer is willing and intends to be involved in an online purchase transaction (Ling et al. 2010). Previous research (Farki 2016) proves that the significance value for the review of purchase intention is lower than the rating on purchase intention which means it is more significant. Based on this, we propose the following hypothesis:

- H1a : Product rating has a significant effect on purchase intention in that consumers express higher purchase intention when the product rating is high than when it is low.
- H2a : Number of product sold has a significant effect on purchase intention in that consumers express higher purchase intention when the number of product sold is high than when the number of product sold is low.

### **2.4 Consumer Confidence**

When a person makes a decision, he will choose a decision based on the choices of people who he can trust more than he does not trust (Moorman 1993). As a belief, self-confidence reflects the meaning of certainty (De Marree et al. 2007 and Stajkovic 2006), where self-confidence is referred to the level of certainty experienced by a person towards a particular object (Howard and Sheth 1969). Bennett and Harrell (1975) interpret self-confidence as the ability of consumers to evaluate certain product or brand attributes. Self-confidence is also described as the buyer's belief that he can predict the return of his purchase decision (Howard and Sheth 1969).

The Federal Reserve (2012) explains that consumer confidence is important because this variable reflects economic conditions, especially reflecting consumer behavior in spending their income. Online buying and selling transactions can run if they are supported by consumer confidence in the online marketplace because trust is very important for successful interactions between vendors and consumers (Corritore et al. 2003). Therefore, the researcher would like to propose this hypothesis:

- H1b : Product rating has a significant effect on consumer confidence in that consumers express higher consumer confidence to purchase when the product rating is high than when it is low.

H2b : Number of product sold has a significant effect on consumer confidence in that consumers express higher consumer confidence to purchase when the number of product sold is high than when the number of product sold is low

## 2.5 Perceived Risk

Perceived risk is a view of the negative impacts that arise (Sari et al. 2015). According to Bobalca (2013), perceived risk is the buyer's perception of the negative consequences or impacts after purchasing services. Perceived risk is a risk that is actually felt in the process of buying a product or service, causing consequences through doubt or uncertainty (Xue 2015). Peter and Olson (2014) say that perceived risk is an unexpected risk that you want to avoid when buying a product or using a service. In Jiang et al. (2002) research, it is explained that there are several factors that affect a person's perceived risk, one of which is related to this research is the quality of information which is very important for the information adoption process, which shows that in the context of third-party social trading platforms, higher-quality information leads to shorter consumer-perceived diagnosis processes and increases the trustworthiness of information. Based on this, the researcher proposes a hypothesis to prove the effect of product rating and product sold, as follows:

H1c : Product rating has a significant effect on perceived risk in that consumers express lower perceived risk when the product rating is high than when it is low.

H2c : Number of product sold has a significant effect on perceived risk in that consumers express lower perceived risk when the number of product sold is high than when the number of product sold is low

The emergence of information about product ratings and product sold simultaneously will of course strengthen (or weaken) purchase intention. In general, when the product rating is high and the number of products sold is high, consumers will tend to have the strongest or highest purchase intention and consumer confidence, and the weakest or low perceived risk. Vice versa. However, what is more interesting to know is how the impact will occur when the product rating is high but the number of products sold is low, and vice versa. Therefore, the researcher proposes a hypothesis to test the following interactions:

H3a : There is a significant interaction effect between Product Rating and Product Sold on Purchase Intention

H3b : There is a significant interaction effect between Product Rating and Product Sold on Consumer Confidence

H3c : There is a significant interaction effect between Product Rating and Product Sold on Perceived Risk

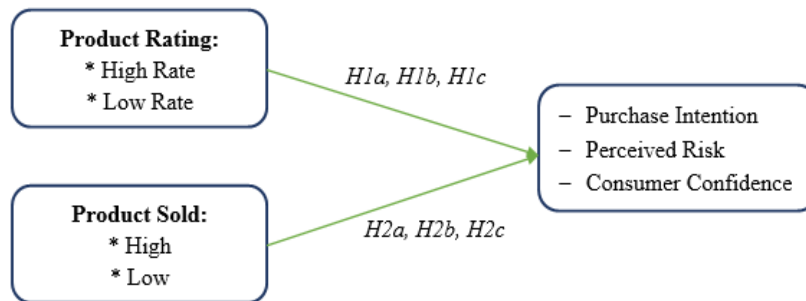


Figure 1: Research Framework

## 3. Methods

### 3.1 Study 1: Product Rating

#### 3.1.1 Research design

Study 1 was designed as a one-factor experimental research design (Product Rating: No Information Rating vs. Low Rating vs. High Rating). Respondents were randomly assigned to one of the three conditions. In this study, we recruited 99 respondents consisting of 42% men and 58% women, 45% aged 19-25 years, 31% aged 26-30 years, and 24% aged over 30 years, 17.6% worked self-employed, 22.9% work as students, 22.6% work as private employees, 9% work as civil servants, and 27.9% are other professions, and the selected respondents are people who have bought goods through e-commerce websites.

#### 3.1.2 Procedure

Study 1 was conducted by distributing questionnaires to respondents, the selected respondents are people who have done online shopping using the website at least once and live in Indonesia and are over 17 years old and we collect the data using Google Forms, where there were three questionnaires with different conditions, namely no information rating, low ratings and high ratings. In this case, the condition of no information rating is included as a based line. Respondents were randomly assigned to one of the three conditions.

### **3.1.3 Dependent Variable**

The dependent variables in this study are purchase intention, consumer confidence, and perceived risk. We measure consumer confidence with statements adapted from Soesilo et al. (2020) such as: "I believe that the decision to buy products from this provider is the right decision", "If I buy a product from this provider, I will not be disappointed with my decision", "I believe that the decision to buy a product from this provider will bring me benefits", "The decision to buy a product from this provider will provide a pleasant experience for me", "I will not regret my decision to purchase the product from this provider" (1 = strongly disagree; 7 = strongly agree).

We measure perceived risk by adapting from Cox and Cox (2001) as well as Cox, and Zimet (2006) with the statements: "Getting advertised products is risky", "Advertised products can produce poor results", "Advertised products have uncertain results", "Getting the advertised product makes me feel anxious", "Getting the advertised product will worry me" (1 = strongly disagree; 7 = strongly agree).

Meanwhile, purchase intention was measured by a series of statements that we adapted from Yessi (2014) such as: "After getting information about product reviews, it made me want to buy it", "I considered buying the product after reading the product review", "For a while In the future, I will buy a product that has been widely discussed or discussed" (1= Strongly disagree; 7= Strongly agree).

## **3.2 Study 2: Product Sold**

### **3.2.1 Research design**

Study 2 was designed as a one-factor experimental research design (Product Sold: No Information Sold vs. Low Sold vs. High Sold). Respondents were randomly assigned to one of the three conditions. In this study, we recruited 97 respondents consisting of 49% men and 51% ,55% aged 19-25 years, 28% aged 26-30 years, and 17% aged over 30 years, 17.5% were self-employed. , 36% work as students, 18.7% work as private employees, 8.3% work as civil servants, and 19.5% are other professions, and the selected respondents are people who have bought goods through e-commerce websites.

### **3.2.2 Procedure**

Study 1 was conducted by distributing questionnaires to respondents, the selected respondents are people who have done online shopping using the website at least once and live in Indonesia and are over 17 years old and we collect the data using Google Forms, where there were three questionnaires with different conditions, namely no information rating, low ratings and high ratings. In this case, the condition of no information rating is included as a based line. Respondents were randomly assigned to one of the three conditions.

### **3.2.3 Dependent Variable**

The dependent variables in this study are purchase intention, consumer confidence, and perceived risk. We measure consumer confidence with statements adapted from Soesilo et al. (2020) such as: "I believe that the decision to buy products from this provider is the right decision", "If I buy a product from this provider, I will not be disappointed with my decision", "I believe that the decision to buy a product from this provider will bring me benefits", "The decision to buy a product from this provider will provide a pleasant experience for me", "I will not regret my decision to purchase the product from this provider" (1 = strongly disagree; 7 = strongly agree).

We measure perceived risk by adapting from Cox and Cox (2001) as well as Cox, and Zimet (2006) with the statements: "Getting advertised products is risky", "Advertised products can produce poor results", "Advertised products have uncertain results", "Getting the advertised product makes me feel anxious", "Getting the advertised product will worry me" (1 = strongly disagree; 7 = strongly agree).

Meanwhile, purchase intention was measured by a series of statements that we adapted from Yessi (2014) such as: "After getting information about product reviews, it made me want to buy it", "I considered buying the product after

reading the product review", "For a while In the future, I will buy a product that has been widely discussed or discussed" (1= Strongly disagree; 7= Strongly agree).

### **3.3 Study 3: Product Rating vs Product Sold**

#### **3.3.1 Research design**

Study 3 was designed as an experimental study design 2 (Product Sold: High Sold vs. Low Sold) x 2 (Product Ratings: High Rate vs. Low Rate). Respondents were randomly assigned to one of the four conditions. In this study, we recruited 131 respondents consisting of 39% men and 61% women, 44.9% aged 19-25 years, 36.1% aged 26-30 years, and 19% aged over 30 years, 32 % are entrepreneurs, 20% work as students, 26% work as private employees, 10% work as civil servants, and 12% are other professions, and the selected respondents are people who have bought goods through e-commerce websites.

#### **3.3.2 Procedure**

Study 1 was conducted by distributing questionnaires to respondents, the selected respondents are people who have done online shopping using the website at least once and live in Indonesia and are over 17 years old and we collect the data using Google Forms, where there were three questionnaires with different conditions, namely no information rating, low ratings and high ratings. In this case, the condition of no information rating is included as a based line. Respondents were randomly assigned to one of the three conditions.

#### **3.3.3 Dependent Variable**

The dependent variables in this study are purchase intention, consumer confidence, and perceived risk. We measure consumer confidence with statements adapted from Soesilo et al. (2020) such as: "I believe that the decision to buy products from this provider is the right decision ", "If I buy a product from this provider, I will not be disappointed with my decision", "I believe that the decision to buy a product from this provider will bring me benefits", "The decision to buy a product from this provider will provide a pleasant experience for me", "I will not regret my decision to purchase the product from this provider" (1 = strongly disagree; 7 = strongly agree).

We measure perceived risk by adapting from Cox and Cox (2001) as well as Cox, and Zimet (2006) with the statements: "Getting advertised products is risky", "Advertised products can produce poor results", "Advertised products have uncertain results", "Getting the advertised product makes me feel anxious", "Getting the advertised product will worry me" (1 = strongly disagree; 7 = strongly agree).

Meanwhile, purchase intention was measured by a series of statements that we adapted from Yessi (2014) such as: "After getting information about product reviews, it made me want to buy it", "I considered buying the product after reading the product review", "For a while In the future, I will buy a product that has been widely discussed or discussed" (1= Strongly disagree; 7= Strongly agree).

## **4. Data Collection**

The data collection methods used included surveys distributed from questionnaires to respondents, especially individuals who had shopped online using the website platform at least once using Google Forms and through library research as secondary data. Sources of library research come from several journals, books and other articles related to research. For data collected through questionnaires, several studies were used to test hypotheses starting from the stimuli development test, the results of which will be used in further research in Study 1 and Study 2, each of which consists of 2 conditions. The population for this research is consumers who have shopped on e-commerce website platforms. The size of the population is getting better in the study, but there is a minimum number that must be taken, namely as many as 30 samples (Cohen et al, 2007). In the experimental method, 30 respondents per condition represented 80% of the population's answers (Cohen, 1988). The number of samples to be collected in this study consists of:

- a. Thirty (30) respondents to the stimulus development test and validity and reliability tests.
- b. A minimum of 90 people for study 1, 90 people for study 2, and 120 people for study 3, bringing a total of 300 people.

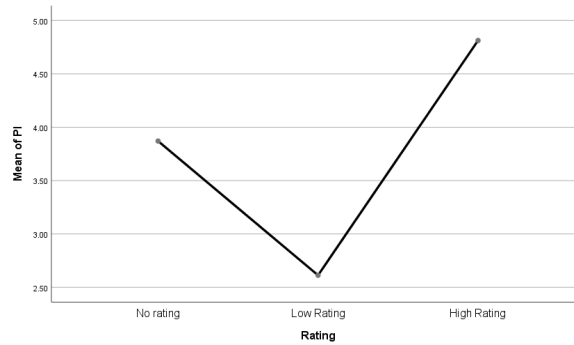
## **5. Result And Discussion**

### **5.1 Study 1**

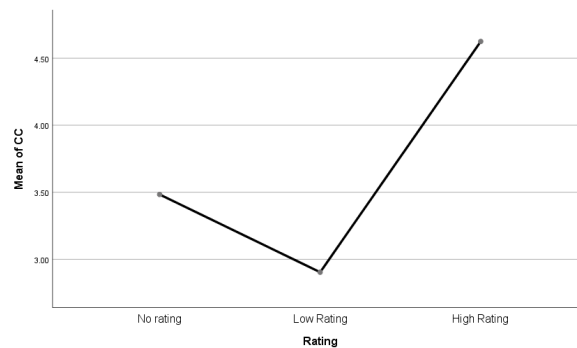
The results of the H1a hypothesis test with one-way ANOVA show that product rating has a significant effect on consumer purchase intention ( $F(2, 96) = 24,118, p < .05$ ) so that consumers who are exposed to high product rating information show higher purchase intention. higher than consumers exposed to low product rating information (Mhigh = 4.8125 vs. Mlow = 2.6129,  $p < .05$ ). Thus, H1a is accepted.

The results of the H1b hypothesis test with One-Way ANOVA show that product rating has a significant effect on consumer consumer confidence ( $F(2, 96) = 17,794, p < .05$ ) so that consumers who are exposed to high product rating information show higher consumer confidence. higher than consumers exposed to low product rating information (Mhigh = 4.6250 vs. Mlow = 2.9032,  $p < .05$ ). Thus, H1b is accepted.

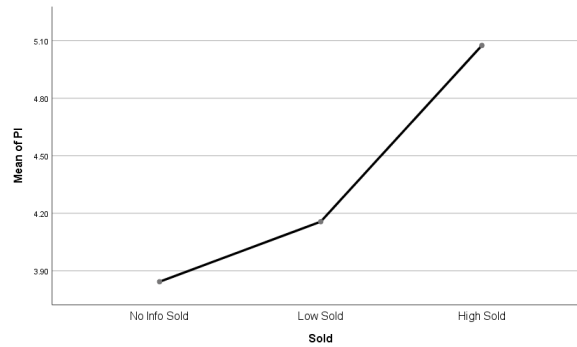
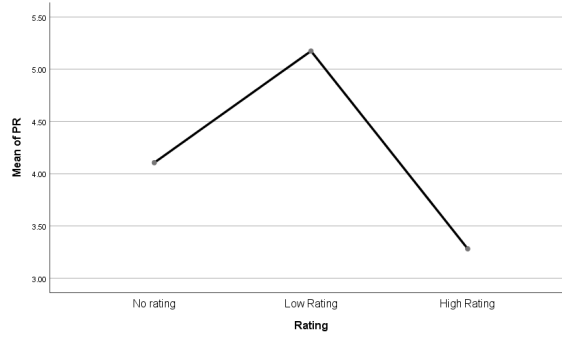
The results of the H1c hypothesis test with One-Way ANOVA show that product rating has a significant effect on consumers' perceived risk ( $F(2, 96) = 22,389, p < .05$ ) so that consumers who are exposed to high product rating information show higher perceived risk. lower than consumers exposed to low product rating information (Mhigh = 3.2813 vs. Mlow = 5.1742,  $p < .05$ ). Thus, H1c is accepted.



**Figure 2: Means Study Plot 1 Purchase Intention**



**Figure 3: Means Plot Study 1 Consumer Confidence**



**Figure 4: Means Plot Study 1 Perceived Risk**

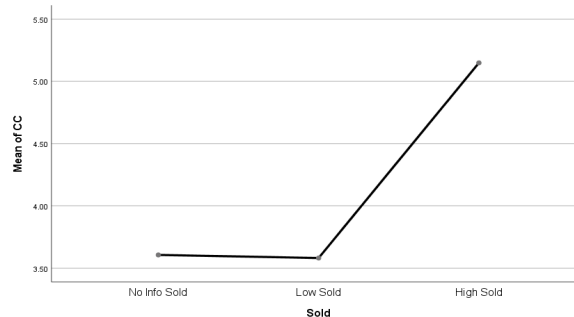
**Figure 5: Means Plot Study 2 Purchase Intention**

## 5.2 Study 2

The results of the H2a hypothesis test with One-Way ANOVA show that product sold has a significant effect on consumer purchase intention ( $F(2, 94) = 7.529, p < .05$ ), so that consumers who are exposed to high product sold information show higher purchase intention. lower than consumers exposed to low product sold information (Mhigh = 5.0753 vs. Mlow = 4.1563,  $p < .05$ ). Thus, H2a is accepted.

The results of the H2b hypothesis test with One-Way ANOVA show that product sold has a significant effect on consumer consumer confidence ( $F(2, 94) = 17,786, p < .05$ ), so that consumers who are exposed to high product sold information show high consumer confidence higher than consumers exposed to low product sold information (Mhigh = 5.1484 vs. Mlow = 3.5812,  $p < .05$ ). Thus, H2b is accepted.

The results of the H2c hypothesis test with One-Way ANOVA show that product sold has a significant effect on consumers' perceived risk ( $F(2, 94) = 5.511, p < .05$ ), so that consumers who are exposed to high product sold information show lower perceived risk. lower than consumers exposed to low product sold information (Mhigh = 3.3097 vs. Mlow = 4.2875,  $p < .05$ ). Thus, H2c is accepted.



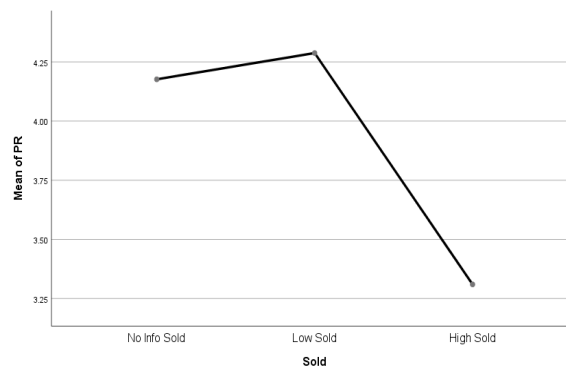


**Tests of Between-Subjects Effects**

Dependent Variable: PI

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	129.729 <sup>a</sup>	3	43.243	38.397	.000
Intercept	2083.480	1	2083.480	1850.022	.000
Ratings	112.509	1	112.509	99.903	.000
Sold	12.098	1	12.098	10.743	.001
Ratings * Sold	4.292	1	4.292	3.811	.053
Error	143.026	127	1.126		
Total	2323.667	131			
Corrected Total	272.755	130			

**Figure 7: Means Study Plot 2 Perceived Risk**



**Figure 8: Two-Way Anova Purchase Intention Analysis**

### 5.3 Study 3

The results of the H3a hypothesis test with Two-Way ANOVA show that the product rating and the number of products sold have no significant effect on purchase intention  $F(1, 127) = 3.811, p = 0.053$ ; Thus, H3a is rejected. However, the direction of the effect is in line with expectations. Purchase intention felt by consumers was at the highest level when the product rating and the number of products sold were high compared to when the product rating and the number of products sold were low (Mhigh Ratings/high Sold = 5.042 vs. Mlow Ratings/low Sold = 2.578,  $p < .01$ ). Purchase intention is felt to be higher when the rating is high but the product is sold low compared to when the rating is low but the product is sold high (Mhigh Ratings/low Sold = 4.796 vs. Mlow Ratings/high Sold = 3.549), so that for purchase intention the product rating is more influential than the number of products sold. Furthermore, when the product rating is high, consumers see higher perceived purchase intention when the product is sold high compared to the product sold is low (Mhigh Ratings/high Sold = 5.042 vs. Mhigh Ratings/low Sold = 4.796).

The results of the H3b hypothesis test with Two-Way ANOVA show that product ratings and the number of products sold have no significant effect on consumer confidence  $F(1, 127) = 1.802, p = 0.182$ ; thus H3b is rejected. However, the direction of the effect was as expected. Consumer confidence perceived by consumers is at the highest level when product ratings and the number of products sold are high compared to when product ratings and the number of products sold are low (Mhigh Ratings/high Sold = 5,094 vs. Mlow Ratings/low Sold = 2,312). Consumer confidence is felt to be higher when the rating is high but the product sells low compared to when the product is sold low rating but the product is sold high (Mhigh Ratings/low Sold = 4,839 vs. Mlow Ratings/high Sold = 2,994), so that the consumer confidence rating of the product is more influential than the number of products sold. Furthermore, when the product rating is high, consumers perceive higher perceived consumer confidence when the product is sold high compared to the product sold is low (Mhigh Ratings/high Sold = 5,094 vs. Mhigh Ratings/low Sold = 4,839).

**Tests of Between-Subjects Effects**

Dependent Variable: CC

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	184.246 <sup>a</sup>	3	61.415	74.137	.000
Intercept	1898.177	1	1898.177	2291.386	.000
Ratings	174.977	1	174.977	211.224	.000
Sold	7.183	1	7.183	8.671	.004
Ratings * Sold	1.493	1	1.493	1.802	.182
Error	105.206	127	.828		
Total	2147.800	131			
Corrected Total	289.452	130			

**Figure 9: Two-Way Analysis of Anova Consumer Confidence**

The results of the H3c hypothesis test with Two-Way ANOVA show that product ratings and the number of products sold have no significant interaction effect on consumers' perceived risk ( $F(1, 127) = 2.786, p = 0.098$ ); Thus, H3c is rejected. Although there is no interaction, the direction of the effect is as expected. The risk perceived by consumers is at the highest level when the product rating and the number of products sold are low compared to when the product rating and the number of products sold are high (Mlow Ratings/low Sold = 5,659 vs. MhighRatings/high Sold = 3,137). The risk is felt to be higher when the rating is low but the product sells high compared to when the product is high rated but the product is sold low (Mlow Ratings/high Sold = 5.041 vs. Mhigh Ratings/low Sold = 3.148), so that the perceived risk rating of the product is more influential than the number of products sold. Furthermore, when the product rating is low, consumers perceive a higher perceived risk when the product is sold low compared to the product sold is high (Mlow Ratings/low Sold = 3,148 vs. Mlow Ratings/high Sold = 3,137).

**Tests of Between-Subjects Effects**

Dependent Variable: PR

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	165.796 <sup>a</sup>	3	55.265	51.165	.000
Intercept	2358.511	1	2358.511	2183.533	.000
Ratings	159.275	1	159.275	147.459	.000
Sold	3.229	1	3.229	2.990	.086
Ratings * Sold	3.010	1	3.010	2.786	.098
Error	137.177	127	1.080		
Total	2712.280	131			
Corrected Total	302.973	130			

**Figure 10: Two-Way Anova Analysis of Perceived Risk**

## 6. Conclusion

The purpose of our research is to find out whether there is a significant effect between high rating and low rating and high product sold and low product sold on perceived risk, consumer confidence and purchase intention and to examine whether there is an interaction effect between the two independent variables. Through 3 series of studies, we show that product rating and product sold have a significant effect on the three dependent variables, but do not have a significant interaction effect between independent variables.

In this discussion, it can be concluded that H1a, H1b, H1c, H2a, H2b, H2c that have been mentioned can be accepted because they are proven to have a significant effect on the three dependent variables raised, and H3a, H3b, and H3c cannot be accepted because in Study 3 found no significant interaction results. However, what is interesting and needs to be highlighted is that in study 1, consumers have a better perception of perceived risk, consumer confidence, and purchase intention if no product rating information is displayed rather than displaying a low product rating, so that if a product is in e-commerce if it has a low product rating it would be better if that information is not displayed. In study 2, consumers have a better perception of perceived risk and consumer confidence if no information on the number of products sold is displayed rather than displaying a low number of products sold, so if a product has a low number of products sold, it would be better if the information is not displayed. And in study 3 where there are insignificant results

but the direction of the effect is in line with expectations, this can be influenced by the lack of sample size used and the alpha value used.

This research is expected to provide various benefits for various parties such as e-commerce companies where management can identify important factors in e-commerce transactions and formulate new strategies to control consumer behavior in e-commerce, as well as for business owners who have a product that already has a low rating, management can consider reuploading the content, even though this causes the product to be loaded from the beginning so that there is no information such as the rating that appears, but it has a better perception for consumers, and for academics It is hoped that this research can be used to enrich knowledge and complement the literature on the role of e-commerce in developing technology.

## **7. Limitations and Future of Research**

The purpose of our study was to find out if there was a significant influence between high ratings with low ratings and high sold products with low sold products against perceived risk, consumer confidence and purchase intention and examined whether there were interaction effects between the two variable independents. Through 3 series of studies we showed that product rating and sold product have a significant influence on all three variable dependents, but do not have a significant interaction effect between independent variables.

In study 1 on product rating, it was found that respondents with high rating conditions, had higher purchase intentions and consumer confidence compared to respondents with vulnerable rating conditions. Conversely, when the product rating is high, perceived risk will be lower.

In study 2 on product sold, it was found that respondents with high selling product conditions had higher purchase intentions and consumer confidence compared to low rating conditions, while perceived risk would be lower. However, in study 3 it was shown that there was no significant effect on the interaction between product rating and product sold against purchase intention, consumer confidence, and perceived risk, where the result when the product rating is high but the product sold low, then purchase intention and consumer confidence are higher in conditions of high product rating although product sold low, and perceived risk is lower when the product rating is low but product sold high.

This research is expected to provide various benefits for the parties concerned, including:

1. For e-commerce companies, management can identify important factors in e-commerce transactions and formulate new strategies to control consumer behavior in e-commerce, such as providing a guarantee that if the goods delivered are not in accordance with expectations, then the money will return.
2. For those who want to go into online business:
  - a. The results of this study can be used as literature to understand the intricacies of online business and what indicators need to be displayed to convince consumers in making online transactions.
  - b. Various e-commerce benefits such as time efficiency and promos provided by each online store, are expected to increase motivation to start an online business.
  - c. Various obstacles revealed in this study can also be used as a consideration in strategizing to start an online business and have known the factors that can affect consumer buying intentions.
3. For academics, this research is expected to be used to enrich knowledge and complete the literature on the role of e-commerce in growing technology.

This research has some limitations. First, the data we collect only comes from consumers in Indonesia. More diverse data sources should be used for future research to ascertain whether these findings can be generalized with other findings. The lack of sample size used also contributed to the results of this study as in study 3 where the results obtained were not significant but the direction of the study was in accordance with the expectations.

Second, this study only focused on product rating information and information on the number of products sold, while in e-commerce there are various types of information that may affect consumer behavior, as well as dependent variables that we use only focus on perceived risk, consumer confidence, and purchase intention so that it is still wide open for further research on consumer behavior in e-commerce. These limitations provide opportunities for other researchers to conduct future research.

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## Biographies

**Rahmatiar Chandra Rachim, S. Kom., MM.** born in Medan on July 27, 1998. He received his degree as a Bachelor of Informatics at AMIKOM University Yogyakarta in 2019 with a GPA of 3.71. He is quite experienced in organizing, where he was a presenter at the AMIKOM Public Relations event in 2015. In this organization, he presented about the campus environment to visitors from other universities. In addition, Rahmatiar was a committee member of PPM AMIKOM in 2018, where he was active in making inflows and outflows for students during the event and ensuring that there were no crowds during the event. The organization's experience made him a project leader to create applications using the .net framework at the Adins Center on Excellence Jakarta in 2019 - 2020. Continuing master school is the next stage to upgrade himself. Currently, Rahmatiar works as Learning Operations & Process Improvement at PT. Bank Mandiri (Persero) Tbk.

**Yokogiru Aldwin Valentino Simanjuntak, S.Ikom., MM.** born in Jakarta on February 14, 1996. He holds a Bachelor of Communication Science at Bina Nusantara University majoring in Marketing Communication with a GPA of 3.06. While in college, he was involved in an organization called the BINUS University Marketing Communication Student Association. In 2014 - 2015, he became an active member of the association and has participated in many activities and has experience as a committee in various association events. Then, in 2015 - 2016, he was appointed as division staff in the field of events, where he was the core manager of the event division responsible for organizing events before and after the event. The force is called ORION, which stands for Outstanding Representative of Inspiring Organization. Finally, in 2016 - 2017, Yoko and his team served on the Advisory Board, where he and his team exercised control over the new management in carrying out their duties and responsibilities, as well as being advisors in organizations and events. Previously, in 2013 - 2014 he was a BANTARA in Scouting and in 2014 - 2015 he was also involved in an organization called the Young Statesman Class. He had an internship at PT. Bank Negara Indonesia Tbk as event assistant who handles every marketing communication event. Currently, he is a businessman in the health and skincare sector, where his business has been running since 07 June 2013. His business is named PT. Melia Sehat Sejahtera.

**Primidya Kartika Miranda Soesilo, S.E., M.Sc., Ph.D.** is an Assistant Professor in the Business Management and Marketing Program at the BINUS Business School at Bina Nusantara University, Jakarta, Indonesia. He earned a Bachelor of Economics from Gajah Mada University in 1996, Master of Science in Marketing from Georgia State University in 1998, and a Doctor of Philosophy (Ph.D) in 2014 from Temple University within the Fox School of Business and Management. He was a lecturer at STIE YKPN Business School Yogyakarta in July 1998 - August 2008, at Temple University in August 2011 - May 2014, at Rutgers University in September 2013 - May 2014, and at Gajah Mada University in January 2015 - April 2015. At least, there have been 7 published journals that he and his friends created. His research interests are in the fields of co-branding, endorsement, luxury brands, private labels, and sensory marketing. Currently he works at Bina Nusantara University in BINUS Business School as Head of Business Management Program from September 2016 to present, where previously he was Subject Content Coordinator in April 2015 - September 2016.