
Does Free Shipping Affect Purchasing Decisions in E-commerce in Indonesia?**Jeremy Hermon Hermawan¹, Kawang Utomo², Raveldy Guinzy Gunawan³, Theresa Karyn Wijaya⁴, Maheswara Rabbani⁵**¹jeremy.hermawan@binus.ac.id, ²kawang.utomo@binus.ac.id, ³raveldy.gunawan@binus.ac.id,⁴theresa.wijaya@binus.ac.id, ⁵maheswara.rabbani@binus.ac.id^{1,2,3,4,5}Information Systems Department, BINUS Graduate Program-Master in Information System Management, Bina Nusantara University, Jakarta, Indonesia, 11480

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Abstract

The trend of buying and selling goods online using e-commerce platforms has become part of the lifestyle of Indonesian people in recent years. E-commerce business people prepare ways or strategies so users can feel enthusiastic when shopping. However, shipping costs are one of the primary considerations for users before making payments. Users must spend more than the price of the goods to pay for the shipping costs. Meanwhile, not all users are willing to pay for shipping costs for several reasons. This study aims to understand whether someone's purchase decision in e-commerce is influenced by free shipping. The research uses a quantitative descriptive method by distributing questionnaires to 50 Indonesian people. The study's results reveal that free shipping costs affect a person's purchasing decision to shop online in e-commerce. In addition, four other factors influence purchasing decisions in e-commerce, namely product completeness, price variation, cashback promo, and ease of use.

A. Introduction

Currently, technology has developed rapidly and allows people to shop remotely [1]. Online shopping centers can be called e-commerce, where other users (sellers) offer many products online [2]. After selecting the desired product, users can make online payments very quickly. After making payment, the goods will be sent to the buyer's location via courier service.

The trend of buying goods online has started to spread in Indonesia in recent years [3]. From small children to the elderly, many people are beginning to use e-commerce platforms to purchase goods according to their needs or desires [4]. Because in e-commerce, there are lots of goods offered, such as electronics, household appliances, sports equipment, fashion, and others, that can make people carry out the buying and selling process. Since this trend has developed, several e-commerce sites in Indonesia have experienced stiff competition [5]. Business people who run e-commerce are starting to do many marketing strategies so that their companies can continue to run and survive [6].

E-commerce business people prepare ways or strategies so users can feel enthusiastic when shopping [7]. One of the efforts made is to provide free shipping promos to users [8]. This free shipping service is one of the most popular among Indonesians. Sometimes, when shopping online through e-commerce, the items the user wants are cheaper than the shipping costs. Postage cost may be one of the primary considerations for users before making payments [9].

This is relevant and important because not all customers are willing to set up more funds to pay for the shipping costs of the product they will buy. The average shipping cost in Indonesia is IDR 10,000/kg with an estimated arrival time of 2-3 working days [10]. With free shipping, users don't need to spend excess money beyond the price of the item set. Users will also save on spending figures if shipping costs are made free. The shipping cost factor can make buyers interested in shopping when there is a free shipping promo.

From this phenomenon, it was found that the cost of postage has an effect on attracting application users to shop. There are several identification problems in this study:

1. Does free shipping affect purchasing decisions in e-commerce?
2. What factors influence purchasing decisions in e-commerce?

This research aims to determine whether the free shipping cost variable influences a person's purchasing decision to buy goods online. In addition, this study also aims to understand what factors influence user purchasing decisions on e-commerce platforms. The research results can be used for academic purposes as an addition to insights and literature for future research. For practical benefits, research results are used to assist e-commerce companies or business people in improving purchasing decisions with a free shipping service strategy.

B. Research Method

1. Research Model

The research model applied is quantitative descriptive, where the data is numeric, and we analyze it statistically. The method used in this research is analysis and survey, which is an analysis of several previously released journal articles and a survey to collect data using a questionnaire to obtain the data. This method aims

to collect all information about the main topic to be studied from all respondents who will represent the total population and sample.

2. Research Variables

A variable is a concept of value that can change and affect research results. Based on the research title, the dependent variable in this study is as follows:

- a. Variable X (independent variable), namely free shipping costs.
- b. Variable Y (dependent variable), namely purchasing decisions in e-commerce.

3. Variable Measurement

The data obtained from the questionnaire is measured with different weights for each answer choice. The weights in question are as follows [11]:

1. SD (Strongly Disagree)
2. D (Disagree)
3. N (Neutral)
4. A (Agreed)
5. SA (Strongly Agree)

4. Hypothesis

The hypothesis is a temporary answer to the problems in research [12]. Etymologically, the hypothesis comes from two words, hypo or 'less than' and thesis or 'opinion.' If these two words are combined, their meaning can be an opinion that is not final and still has to be tested. This study has two kinds of hypotheses: the working hypothesis (H1) and the null hypothesis (H0). Usually, H0 is prepared to be rejected, and H1 is prepared to be accepted, or in other words, it is a temporary answer from a theoretical study.

The hypothesis in this study aims to determine whether free shipping has an effect or not on purchasing decisions in e-commerce. Based on the purpose of the research hypothesis, the working hypothesis and the null hypothesis are formulated as follows:

- H0: Free shipping cost does not affect purchasing decisions in e-commerce.
- H1: There is an effect of free shipping costs on purchasing decisions in e-commerce.

5. Population and Sample

According to Djarwanto in 1994, the population is the total number of units or individuals whose characteristics will be studied [13]. And the unit is called the unit of analysis, which can be a person, institution, object, etc. The population in this study is Indonesian people who have made transactions at least once in e-commerce.

The sample is part of the population whose characteristics will be studied according to Djarwanto in 1994 [14]. In this study, 50 people were taken as a sample from the population who had made transactions at least once in e-commerce.

3.6 Research Instrument Testing

According to Suharsimi Arikunto, research instruments are tools that are selected and used by researchers in carrying out activities to collect information so that they can be systematized and made more manageable [15]. The instrument used in this research is a questionnaire. Table 1 describes the factors that influence purchasing decisions in e-commerce [16] [17].

Table 1. Factors Influencing Purchase Decisions in E-commerce

Construct	Variable	Sub-variable	Indicator
Factor	Factor of purchasing through e-commerce	Product	The variety and completeness of products in e-commerce support most customer needs.
		Completeness	
		Price	The price offered for the same product varies from the lowest to the highest price.
		Variation	
		Free Shipping	Free shipping costs cover the total shipping discount that customers will get.
		Cost	
		Cashback	Cashback promos offered by e-commerce can have different types of categories, for example, daily necessities, clothing, food and beverages, electronics, and many more.
		Promo	
		Ease of Use	If a customer wants to buy something, they only need to open the phone, order the product via e-commerce and wait for the product to arrive. Nowadays, most e-commerce has a good user interface and user experience design so that customers use the application easily.

C. Result and Discussion

1. Result

To test the research, questionnaires were used to obtain data that would be the main factor in making test decisions. The distributed questionnaire was a closed questionnaire, so the respondents only had to choose the answer displayed with the question. As a result of the questionnaire, it can be concluded as follows for research development:

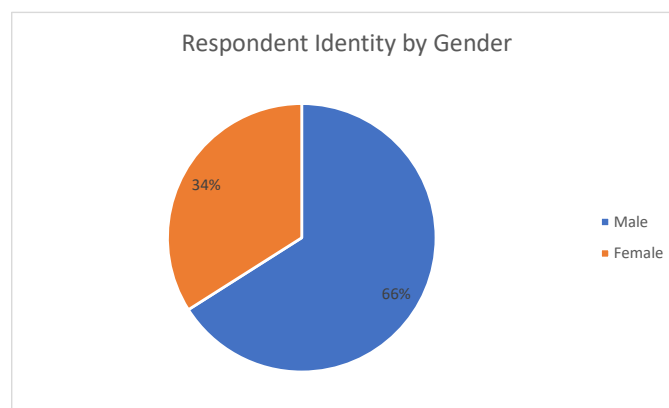


Figure1. Respondent Identity by Gender

Based on the data in figure 1, it can be concluded that two percent of the sexes are involved in the research as respondents. From the picture, it can be seen that

there are 33 male respondents, or 66% of 50 respondents, while for female respondents, there are 17 people, or 34% of 50 respondents. It was concluded that the respondents involved in the study were more dominant men, with a difference of 16 respondents from female respondents.

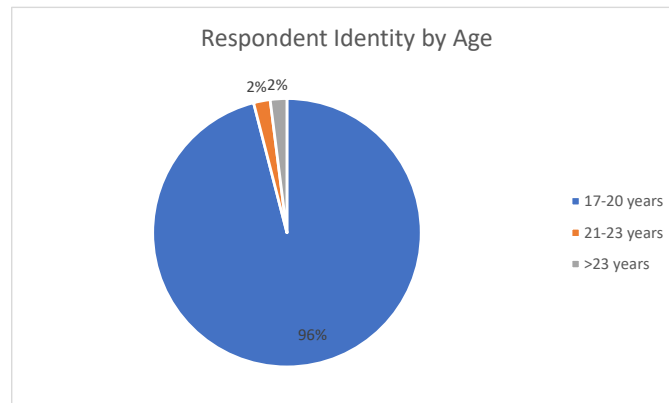


Figure2. Respondent Identity by Age

As the data we obtained from figure 2 regarding the ages of the respondents from the study were dominated by respondents belonging to the 17-20 year age group, where there were 48 respondents or 96% of the 50 respondents, for respondents in the age range 21-23 years with one respondent or 2 % of the 50 respondents, and respondents in the age range >23 years with a total of 1 respondent or 2% as a percentage.

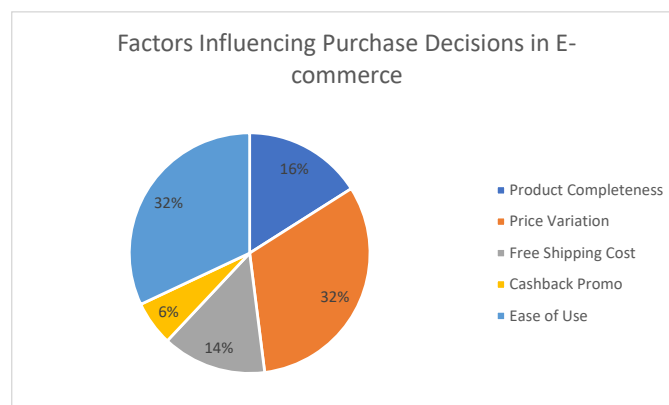


Figure2. Factors Influencing Purchase Decisions in E-commerce

From the variables and indicators tested, data in figure 3 is collected based on the factors that influence respondents to buy or make transactions through e-commerce, 32% of respondents choose the ease of use factor, 32% of respondents choose price variations provided by e-commerce, 16% of respondents chose product completeness as the main factor that influenced them in buying products through e-commerce, then 14% of respondents chose free shipping which is the main topic of our research, and the remaining 6% of 50 respondents chose cashback promos as a factor that influenced them in buying products through e-commerce.

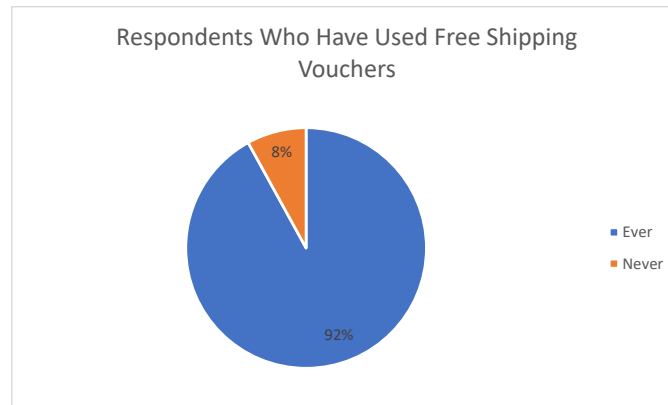


Figure4. Respondents Who Have Used Free Shipping Vouchers

Based on the data collected in figure 4, it can be concluded that 92%, or 42 respondents out of a total of 50 respondents, have used free shipping vouchers in making purchases through e-commerce, and the remaining 8%, or four respondents out of a total of 50 respondents have never used free vouchers shipping costs for transactions. So the conclusion from figure 4 is that the dominant respondents are respondents who have used free shipping vouchers in transactions. 88% of the total 50 respondents also considered free shipping as their consideration in continuing their transactions through e-commerce, and the rest, or 12% of the total 50 respondents, did not consider free shipping to carry out their transactions in e-commerce.

2 Hypothesis Testing Procedure

2.1 Determine the Hypothesis Formulation

The formulation or formulation of statistical hypotheses can be divided into two types, namely as follows:

- The null / nil hypothesis (H_0)
The null hypothesis is a hypothesis that is formulated as a statement to be tested. The null hypothesis has no difference or zero difference from the actual hypothesis.
- Alternative/counter hypothesis (H_1/H_a)
The alternative hypothesis is a hypothesis that is formulated as the opposite or counters the null hypothesis.

Based on the objectives of the research hypothesis, the working hypothesis and null hypothesis are formulated as follows:

- H_0 : Free shipping cost does not affect purchasing decisions in e-commerce.
- H_1 : There is an effect of free shipping costs on purchasing decisions in e-commerce.

2.2 Determining the Real Level (α)

The real level (α) is the amount of tolerance in accepting the error of the hypothesis results on the population parameter value. The real level in the form of % is generally 1%, 5% and 10% written as $\alpha 0.01$; $\alpha 0.05$; $\alpha 0.1$. The magnitude of the

error is called the critical region of a test or the region of rejection. Based on our research results, $n = 100$, with $\alpha = 5\% = 0.05$, and of population of 200.

Calculation of Standard Deviation:

$$\begin{aligned} n &= 100 \\ \bar{x} &= 23.14 \\ \mu_0 &= 11.57 \end{aligned}$$

$$\begin{aligned} \sum_{i=1}^n x_i &= 2314 \\ \sum_{i=1}^n x_i^2 &= 893214 \\ \left(\sum_{i=1}^n x_i^2\right)^2 &= 5354596 \end{aligned}$$

$$s^2 = \frac{(n)(\sum_{i=1}^n x_i^2) - (\sum_{i=1}^n x_i)^2}{n(n-1)} = 8.56$$

$$s = \sqrt{\frac{(n)(\sum_{i=1}^n x_i^2) - (\sum_{i=1}^n x_i)^2}{n(n-1)}} = 2.92$$

Real level & t-table

- $\alpha = 5\% = 0.05$
- $\alpha/2 = 0.025$
- $db = n-1 = 100-1 = 99$
- $t_{0.025,99} = 1.98422$

2.3 Determining Testing Criteria

Testing Criteria is a form of decision-making in accepting or rejecting the null hypothesis (H_0) by comparing the α value of the distribution table (critical value) with the value of the statistical test, according to the form of the test. What is meant by test form is the side or direction of the test.

- a. Acceptance of H_0 occurs if the statistical test value is smaller or greater than the positive or negative value of α table. Or the statistical test value is beyond the critical value.
- b. H_0 rejection occurs if the statistical test value is greater or less than the positive or negative value of α table. Or the statistical test value is beyond the critical value.
- c. H_0 accepted if $-t_{0.025} \leq t_0 \leq t_{0.025} = -1.98422 \leq t_0 \leq 1.98422$
- d. H_0 rejected if $t_0 > t_{0.025} = t_0 > 1.98422$ OR $t_0 < -t_{0.025} = t_0 < -1.98422$

2.4 Determine the Value of Statistical Test

Statistical tests are formulas related to certain distributions in hypothesis testing. The statistical test is a calculation to estimate sample data parameters taken randomly from a population.

$$t_0 = \frac{\sqrt{n}(\bar{x} - \mu_0)}{s} = \frac{\sqrt{100}(23.14 - 11.57)}{2.92} = 11.64$$

2.5 Hypothesis Results

Making the conclusion is making decisions in terms of acceptance or rejection of the null hypothesis (H_0) in accordance with the testing criteria. And in this scenario, t_0 11.64 resulting: H_0 is heavily rejected / H_1 : There is an effect of free shipping costs on purchasing decisions in e-commerce.

3. Discussion

This section explains further the results of research conducted through questionnaires to 50 respondents with the criteria of Indonesian people who have made a purchase or transacted at least once in e-commerce.

Based on the results of hypothesis testing that has been done regarding the effect of free shipping on purchasing decisions in e-commerce, free shipping affects buyers in deciding whether to continue the transaction or not. The results of the hypothesis test that we get are H_0 rejected or H_1 accepted so that there is a free shipping fee effect on purchasing decisions for transactions through e-commerce, where the results of this hypothesis test are obtained from questionnaire data that has been collected and calculated using SPSS. The greater the free shipping discount customers get, the more influential it will be on purchasing decisions to make more transactions through e-commerce.

Research by Mira Istiqomah and Novi Marlina revealed that free shipping promos significantly influence purchasing decisions for fashion products in the marketplace [17]. The same thing was stated by Nurul Istikomah and Budi Hartono in their research [18]. They found that free shipping promos affect purchase decisions at Shopee because users can save more on expenses. In addition to the main results of testing the hypothesis, other information was found related to purchasing decision factors in e-commerce. Ease of use of applications, price variations, product completeness, and cashback promos also affect purchasing decisions in e-commerce.

This research supports statements from previous studies that users make shipping costs one of their considerations before shopping online. In their study, Heru Ependi and Reza Widhar Pahlevi found that promotions carried out by one of the e-commerce companies in Indonesia, Shopee, influenced consumers' online purchasing decisions at Shopee [19]. These promotions include product discounts, free shipping promos, price, quality, and the trust e-commerce gives its users. This can be a consideration for E-commerce in Indonesia to pay attention to the price factor by providing more programs, especially free shipping programs [20]. These recommendations aim to attract more users to make online shopping transactions. That way, users don't have to worry about shipping costs and increased opportunities when deciding to shop.

D. Conclusion

Based on the results of research on the effect of free shipping on purchasing decisions in e-commerce, it can be concluded that free shipping affects purchasing decisions made by customers in e-commerce. The hypothesis obtained is that H_0 is rejected or H_1 is accepted, meaning that free shipping affects buyer decisions in e-commerce. The hypothesis test results were obtained from questionnaire data that had been distributed to 50 Indonesian people who had made a purchase at least

once in e-commerce. With free shipping promotions, e-commerce can get more buyers because it attracts buyers and positively affects purchasing decisions.

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