# Analysis of factors influencing use behavior on e-commerce users in Batam City

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## A R T I C L E   I N F O

## ABSTRACT

This study was studied with the intention of examining what factor influence the use behavior e-commerce in Batam City. The object of research in this study is the people of Batam City who are e-commerce users. The independent variables in this research study are performance expectancy, effort expectancy, social influences, hedonic motivations, and habits. The dependent variable used in this study is use behavior and is equipped with an intervening variable, namely use intention. The research conducted by the author in this study applies a comparative causal method with a quantitative approach. In collecting samples purposive sampling is the technique used and the results of sample collection are processed and analyzed with smart PLS. The results of this study indicate that habits, and social influences can lead to behavioural intentions so that they can encourage use behavior towards the use of e-commerce. If people who use e-commerce are considered to have become a habit, it will definitely be able to generate behavioural intentions and will lead to use behavior e-commerce. This also applies to social influence, if the social influence is stronger, it will encourage people to behavioural intention e-commerce so that they will carry out use behavior in e-commerce applications.

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# INTRODUCTION

Along with the development of the world of globalization which is experiencing changes, especially those caused by very fast and rapid technological developments, it requires that everyone must be able to adapt to the changes that occur. Most people today want to get information related to the product or service they want to use instantly. The presence of e-commerce is the answer to these problems so that everyone wants to adapt in order to solve the problems they have.

Seeing this phenomenon, now most people always use e-commerce as a place to buy and sell and find information about the desired product or service (Alwendi, 2020). Thanks to the effectiveness and efficiency of e-commerce, now most people have moved from the usual when looking for information on a product or service by direct visits to using e-commerce. The number of

e-commerce visitors is always increasing every year, this indicates that people are now slowly adapting to the presence of e-commerce.

In Indonesia there are lots of e-commerce operations. The data below is data on the 5 most visited e-commerce sites in 2020 led by Shopee, Tokopedia, Bukalapak, Lazada, Bblibli. Seeing the number of visitors who really use e-commerce, the existence of e-commerce is in great demand by all people in Indonesia, especially in Batam.

**Table 1.** List *E-Commerce* in Indonesian

| No | Aplikasi | Pengguna |
|----|-----------|-------------|
| 1 | Shopee | 390.826.400 |
| 2 | Tokopedia | 355.556.000 |
| 3 | Bukalapak | 142.913.700 |
| 4 | Lazada | 105.537.100 |
| 5 | Blibli | 77.015.600 |

Not only that, the nominal transactions that occur using e-commerce are always increasing every year. Seeing that the nominal transactions have increased every year, this is proof that the existence of e-commerce is in great demand by the people of Indonesia and is good for future prospects.
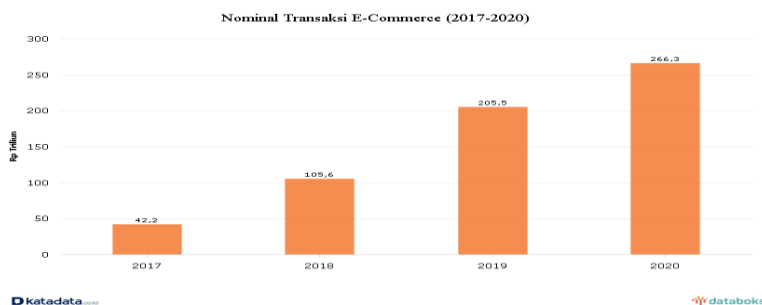


**Figure 1.** Value of E-Commerce Transactions in 2020

E-commerce visitors who get an increase in users every year, because it provides solutions for the community effectively and efficiently in finding information related to the desired product or service and will ultimately trigger behavioral intentions to use e-commerce which is influenced by various factors which will ultimately lead to usage behavior.

Therefore, researchers want to examine more deeply by raising a research title entitled "Analysis of Factors Influencing Use Behavior of E-commerce Users in Batam City"

# RESEARCH METHOD

Seeing the relationship between the variables, it has been considered that the research method that is in accordance with this study is comparative causal research with the aim of explaining the causal attachment of the independent variable to the dependent variable. Researchers target e-commerce users in the city of Batam to be the population of this study. Purposive sampling is a data collection technique in this research study, where there are certain criteria in the sample selection technique so that not everyone has the same opportunity to become a sample in the study. (Sugiyono, 2017).

The criteria for those included in the sample object of this study are users of 5 e-commerce applications, namely Shopee, Tokopedia, Bukalapak, Lazada, and Blibli.com. The primary source in this study was obtained from distributing questionnaires to respondents using a Likert scale of 1-5. The method for determining the number of samples is based on the criteria (Hair et al., 2014), that is, the lowest sample is expressed by 1:10, which means that each question has at least 10 respondents.

In this study there were 25 total questions, so the lowest number of respondents in this study was 250 samples. In order to avoid data inaccuracies, the sample was added by 50 respondents. Primary data collection, collected through the distribution of online questionnaire links in the form of a google form.

# RESULTS AND DISCUSSIONS

**Composite Reliability and Cronbach's Alpha**
Testing reliability in this study, the output results of composite reliability and Cronbach's alpha have values exceeding 0.6. With these results the reliability test on each research variable was declared reliable.

**Tabel 2.** Composite Reliability dan Cronbach's Alpha Test

| Variable | Cronbachs's Alpha | Composite Reliability | Information |
|---|---|---|---|
| Behavioural Intention | 0,786 | 0,862 | Reliable |
| Effort Expectancy | 0,713 | 0,820 | Reliable |
| Habit | 0,765 | 0,851 | Reliable |
| Hedonic Motivation | 0,746 | 0,854 | Reliable |
| Perfomance Expectancy | 0,803 | 0,871 | Reliable |
| Social Influence | 0,762 | 0,862 | Reliable |
| Use Behavior | 0,756 | 0,860 | Reliable |

**Evaluasi Model Struktural (Inner Model)**
**VIF (Outer/Inner Model)**

**Table 3. VIF Test**

| Variable | VIF |
|---|---|
| BI 1 | 1,664 |
| BI 2 | 1,480 |
| BI 3 | 1,413 |
| BI 4 | 1,737 |
| EE 1 | 1,314 |
| EE 2 | 1,252 |
| EE 3 | 1,449 |
| EE 4 | 1,395 |
| H1 | 1,478 |
| H2 | 1,441 |
| H3 | 1,566 |
| H4 | 1,543 |
| HM 1 | 1,813 |
| HM 2 | 1,886 |
| HM 3 | 1,249 |
| PE 1 | 1,926 |
| PE 2 | 1,511 |
| PE 3 | 1,685 |
| PE 4 | 1,527 |
| SI 1 | 1,743 |
| SI 2 | 1,358 |
| SI 3 | 1,749 |
| UB 1 | 1,371 |
| UB 2 | 1,671 |
| UB 3 | 1,657 |

VIF outer model testing is said to be good if it has a value of <5 or <=5. If you look at the results of the output outer model, the VIF value in this research variable has a good value with a VIF value of < 5.

**Table 4.** Test

| | BI | EE | H | HM | PE | SI | UB |
|---|---|---|---|---|---|---|---|
| Behavioural Intention | | | | | | | 1,000 |
| Effort Expectancy | 1,447 | | | | | | |
| Habit | 2,015 | | | | | | |
| Hedonic Motivation | 2,057 | | | | | | |
| Perfomance Expectancy | 1,781 | | | | | | |
| Social Influence | 1,410 | | | | | | |

Testing this research variable with the inner model can be said to be good if the value does not exceed 5 or <= 5. Looking at the output produced in this study, the results of the inner model meet the criteria of good value with a value of <5.

**Path/ Coeeficients / Direct Effect**

**Table 5.** Hasil Uji Path/ Coeeficients / Direct Effect

| Varibel | Sample Mean | T Statistics | P Values | Kesimpulan |
|---|---|---|---|---|
| Behavioural Intention > Use Behavior | 0,626 | 10,752 | 0,000 | Significant |
| Effort Expectancy > Behavioural Intention | 0,081 | 1,024 | 0,306 | Not Significant |
| Habit > Behavioural Intention | 0,354 | 4,224 | 0,000 | Significant |
| Hedonic Motivation > Behavioural Intention | 0,141 | 1,810 | 0,071 | Not Significant |
| Perfomance Expectancy > Behavioural Intention | -0,043 | 0,856 | 0,393 | Not Significant |
| Social Influence > Behavioural Intention | 0,288 | 4,131 | 0,000 | Significant |

**Behavioral Intention influences Use Behavior.**

The results of the study of processed data indicate that behavioral intention has a significant effect on use behavior. The results of this study are in accordance with research studies reviewed by (Susanto et al., 2020), (Baptista & Oliveira, 2017), and (Ukut Thomas & Krairit, 2019). It can be concluded that the behavioral intention of using e-commerce directly influences the behavior of using e-commerce. This is because people think that the use of e-commerce helps everyday life so that people plan, and intend to continue using e-commerce in the future. Therefore, this behavioral intention will make people use e-commerce more often. For this reason, the behavioral intention hypothesis towards use behavior is accepted.

**Effort Expectancy affects Behavioral intention.**

The processed results of the study indicate that effort expectancy has no significant effect on behavioral intention. The results of this study are consistent with studies implemented by (Gupta et al., 2018), and (Susanto et al., 2020). However, this is contrary to research (Rahi et al., 2019), (Sabbir et al., 2020), (Chua et al., 2018). It can be concluded with these results that the effort expectancy of an e-commerce is still not maximized for e-commerce users. Because this research does not cover age, the people in Batam city are considered to be still not literate about e-commerce technology so that the use of e-commerce is still not optimal. For this reason, the effort expectancy hypothesis has an effect on behavioral intention is rejected.

**Habit influences behavioral intention.**

The results of this study indicate that habit has a significant effect on behavioral intention. The results of this study are in accordance with studies implemented by (Tak & Panwar, 2017), (Talukder et al., 2019), and (Farah et al., 2018). These results conclude that the use of e-commerce is considered to have become a habit, and a necessity. People also think that the use of e-commerce has become a natural thing so that some people feel addicted to using e-commerce. This is of course a person's

habit will shape the behavioral intention to use e-commerce. For this reason, testing the hypothesis that habit has an effect on behavioral intention can be accepted.

**Hedonic Motivation influences Behavioral Intention.**

The results of the study prove that hedonic motivation has no significant effect on behavioral intention. These results are supported by studies by (Gupta et al., 2018), and (Rita et al., 2018). However, the results of this output contradict the studies that were implemented (Rahi et al., 2019), (Makanyeza & Mutambayashata, 2018). Judging from the results, hedonic behavior does not make a person form a behavioral intention to use e-commerce. This is because the feelings of pleasure, enjoyment, and entertainment in using e-commerce do not motivate people to carry out hedonic behavior. For this reason, the hedonic motivation hypothesis that influences behavioral intention is rejected.

**Performance Expectancy affects Behavioral intention.**

In accordance with the output produced, it is proven that performance expectancy has no significant effect on behavioral intention. The output is in sync with the results of studies reviewed by (Dhiman et al., 2020), (Susanto et al., 2020). However, this is contrary to the studies implemented by (Rahi et al., 2019), (Sabbir et al., 2020), and (Chua et al., 2018). It can be concluded that the performance expectancy of an e-commerce cannot shape the behavioral intention of e-commerce users. This can happen because today's technological developments are still not many people realize the usefulness of e-commerce, especially parents or the elderly because the use of e-commerce is generally young people. Therefore, testing the hypothesis of performance expectancy affecting behavioral intention is rejected.

**Social influence influences behavioral intention.**

This output proves that social influence has a significant effect on behavioral intention. Output results are in accordance with implementation studies by (Tarhini et al., 2017), (Abed, 2018), and (Chua et al., 2018). It can be concluded that relatives, friends, family, and important people who have the same opinion can influence a person to be able to form behavioral intentions to use e-commerce. So that people will feel they have behavioral intentions that are influenced by social influences. For this reason, testing the hypothesis which states that social influence has an effect on behavioral intention is acceptable.

**Indirect Effects**

**Table 6.** Indirect Effect Test

| Varible | Sample Mean | T Statistics | P Values | Kesimpulan |
|---|---|---|---|---|
| Effort Expectancy > Behavioural Intention > Use Behavior | 0,051 | 0,999 | 0,318 | Not Significant |
| Habit > Behavioural Intention > Use Behavior | 0,223 | 3,548 | 0,000 | Significant |
| Hedonic Motivation > Behavioural Intention > Use Behavior | 0,088 | 1,787 | 0,075 | Not Significant |
| Perfomance Expectancy > Behavioural Intention > Use Behavior | -0,026 | 0,859 | 0,391 | Not Significant |
| Social Influnce > Behavioural Intention > Use Behavior | 0,179 | 4,235 | 0,000 | Significant |

**Effort Expectancy affects Use Behavior with Behavioral Intention being an intervening variable.**

The output results of this study prove that effort expectancy has no significant effect on use behavior with behavioral intention being the intervening variable. These results are in sync with the study by (Susanto et al., 2020). However, it is contradictory to the study reviewed by (Samsudeen & Mohamed, 2019). This is because people think that the use of e-commerce seems difficult and not very easy to understand even though instructions have been given, but when you practice it yourself you experience difficulties and nowadays there are so many cases of cybercrime or online fraud that

it worries the public. This makes the people in the city of Batam still unable to be literate in the use of technology and one of them is e-commerce. For this reason, the effort expectancy hypothesis influences Use Behavior with Behavioral Intention being an intervening variable is rejected.

**Habit influences Use Behavior with Behavioral Intention being an intervening variable.**

The results of this study indicate that habit has a significant effect on use behavior with behavioral intention being the intervening variable. This is supported by studies interpreted by (Gupta et al., 2018). Many people already think that using e-commerce is a normal habit. The effect of a habit or habit will encourage the formation of an intention to use behavior and will automatically increase usage behavior towards e-commerce. For this reason, the habit hypothesis influences Use Behavior with Behavioral Intention being an accepted intervening variable.

**Hedonic Motivation influences Use Behavior with Behavioral Intention being an intervening variable.**

The results of this study prove that hedonic motivation has no significant effect on use behavior with behavioral intention being the intervening variable. These results are appropriate and supported by studies reviewed by (Rita et al., 2018). However, it is supported by research implemented by (Makanyeza & Mutambayashata, 2018). An enjoyment in the form of pleasure from hedonic behavior does not motivate people to intend to use e-commerce and will automatically not use e-commerce. This can happen because most people are more motivated to engage in hedonic behavior when making purchases in person, people will be more interested when they see the items they want to buy in person because they can try them and directly hold the items compared to e-commerce in the form of photos. and videos. For this reason, testing the hedonic motivation hypothesis has an effect on Use Behavior with Behavioral Intention being an intervening variable is rejected

**Performance Expectancy affects Use Behavior with Behavioral Intention being an intervening variable.**

The results of the study output proved that performance expectancy did not have a significant effect on use behavior with behavioral intention being the intervening variable. The results of this study are supported by a research study by (Dhiman et al., 2020). But contrary to research by (Rezaei Sajad, 2015). People think that e-commerce doesn't really help them in their daily lives but instead makes them wasteful by finding goods instantly, so it doesn't make them intend to use e-commerce and doesn't directly shape usage behavior towards e-commerce. Therefore, testing the hypothesis of performance expectancy affecting Use Behavior with Behavioral Intention being an intervening variable is rejected.

**Social Influence affects Use Behavior with Behavioral Intention being the intervening variable.**

The results of the study proved that social influence had a significant effect on use behavior with behavioral intention being an intervening variable. The test results are comparable to the review (Chua et al., 2018). Social influence factors play an important role in influencing a person's behavioral intention to use e-commerce. People assume that social influences such as friends, relatives, family, important people, and people who agree with them will influence them in forming behavioral intentions to use e-commerce and will directly lead to e-commerce usage behavior. Seeing friends, relatives, family using e-commerce makes them motivated to use e-commerce. Therefore, testing the hypothesis that social influence influences Use Behavior with Behavioral Intention becomes an accepted intervening variable.

**R Square**

Seeing the results of this research output in the table below, the behavioral intention variable has an R Square value of 0.430 or 43%, the rest is explained by other variables that are not owned in this study, and these results are categorized as weak. Furthermore, the use behavior variable R Square 0.394 or 39.4% is explained by other variables that are not in this study, and this result is declared weak.

**Table 7.** R Square Test

| Variable | R Square Adjusted | Persentase |
|----------|-------------------|------------|
| Behavioural Intention | 0.430 | 43,0% |
| Use Behavior | 0.394 | 39,4% |

**F Square**

**Table 8.** F Test

| | Sample Mean | T Statistics | P Values |
|---|---|---|---|
| Behavioural Intention > Use Behavior | 0,679 | 3,055 | 0,002 |
| Effort Expectancy > Behavioural Intention | 0,015 | 0,348 | 0,728 |
| Habit > Behavioural Intention | 0,121 | 1,859 | 0,064 |
| Hedonic Motivation > Behavioural Intention | 0,024 | 0,767 | 0,444 |
| Perfomance Expectancy > Behavioural Intention | 0,005 | 0,341 | 0,734 |
| Social Influence > Behavioural Intention | 0,116 | 1,685 | 0,093 |

In the F Square test, there are 3 effect sizes, namely a small effect size if the value is 0.02, a moderate effect size if the value is 0.15, and a large effect size when the value is 0.35 (Hair et al, 2019). Based on the output generated in this study, the F Square test is stated as follows:

a.   Behavioral Intention influences Use Behavior.

The output results are based on the table above, Behavioral Intention influences Use Behavior with a value of 0.679 so that it is included in the large effect size category and is the highest effect size value compared to other variables.

b.   Effort Expectancy affects Behavioral intention.

According to the output table above, the effort expectancy value has an effect on behavioral intention of 0.015 and this value is included in the medium effect size category.

c.   Habit influences behavioral intention.

The results of the output value based on the table, habit has an effect on behavioral intention has a value of 0.121 and is stated to have a large effect size.

d.   Hedonic Motivation influences Behavioral Intention.

Based on the output value, hedonic motivation has an effect on behavioral intention, which has a value of 0.024. The result is stated to have a small effect size.

e.   Performance Expectancy influences Behavioral intention.

The output value resulting from the performance expectancy variable influences behavioral intention to get a value of 0.005. The result of this value is stated to have a small effect size.

f.   Social influence influences behavioral intention.

The output value of the social influence variable influences behavioral intention to produce a value of 0.116 and with that value this variable is declared to have a large effect size.

**SRMR**

SRMR testing is carried out to find the level of possible error in a data owned in a study. The value of the SRMR test is good if the value is <0.1 and the lower the value, the lower the probability of error. Looking at this study, the results in the possible error test have values of 0.067 and 0.091. This value states that the error rate in this study is small.

**Table 9.** SRMR Test

|                 | Sample Mean | 95% | 99%       |
|-----------------|-------------|-----|-----------|
| Saturated Model | 0.067       |     | 0.0590.062|
| Estimated Model | 0.091       |     | 0.0660.075|

**GoF Index**

Testing is used to see whether a model being tested is declared good or not. The test can be done with the formula below:

COMM = AVE

$$COMM = \frac{0.610 + 0.534 + 0.590 + 0.662 + 0.629 + 0.677 + 0.673}{7} = 0.625$$

$$R^2 \quad = \frac{0.430 + 0.394}{2} = 0.412$$

$$GOF \quad = \sqrt{0.625} \; x \; 0.412 = 0{,}3257$$

The final result in calculating the GOF Index shows a moderate result because it has a value of 0.3257 or > 0.25.

# CONCLUSION

The results of the study concluded that the relationship between behavioral intention has a significant effect on use behavior. The relationship between effort expectancy has no significant effect on behavioral intention. The relationship between habit has a significant effect on behavioral intention. The relationship between hedonic motivation has no significant effect on behavioral intention. The relationship between performance expectancy has no significant effect on behavioral intention. The relationship between social influence has a significant effect on behavioral intention. The relationship between effort expectancy has no significant effect on use behavior and behavioral intention as an intervening variable. The relationship between habit has a significant effect on use behavior and behavioral intention as an intervening variable. The relationship between hedonic motivation has no significant effect on use behavior and behavioral intention as an intervening variable. The relationship between performance expectancy has no significant effect on use behavior and behavioral intention as an intervening variable. The relationship between social influence has a significant effect on use behavior with behavioral intention as an intervening variable.

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