Proceedings Series on Proceedings of Multidisciplinary Sciences, Volume 1, No. 1
International Conference of Business, Education, Health, and Scien-Tech (ICBENS)
ISSN: -

The Influence Of Perceived Usability, Perceived Ease And User Attitudes Towards Interest In Saving Waste

I Ketut Patra[1*] Firda Ayu[2*] Fitriani[3*] Islawati[4] Nurjayati[5] Indra Kusdarianto[6]

[1,6]Fakultas Ekonomi dan Bisnis, Universitas Muhammadiyah Palopo, 91922, Indonesia
[2]Magister Manajemen, Universitas Muhammadiyah Palopo, 91922, Indonesia
[3]Magister Manajemen, Universitas Muhammadiyah Palopo, 91922, Indonesia
[4]Magister Manajemen, Universitas Muhammadiyah Palopo, 91922, Indonesia

Corresponding Author Email: indrakusdarianto@umpalopo.ac.id

Abstract

This study aims to determine the influence of user perception, convenience perception and user attitude towards interest in saving waste. This study used descriptive quantitative methods. The sample of this study was 100 customers from the Cemara Garbage Bank, Malili District, East Luwu Regency. The results of this study are perceptions of usability, perceptions of convenience and user attitudes have a partial and simultaneous positive effect on interest in saving waste.

Keywords: Perceived Ease; User Perception; User Attitude; Waste Bank

1. Introduction

Waste has become a fundamental environmental problem in Indonesia. Landfills continue to accumulate from time to time. In 2012, the Ministry of Environment noted that the average Indonesian population produced around 2.5 liters of waste per day or 625 million liters of the total population. Waste that cannot be transported every day is estimated to be around 348,000 cubic meters or around 300,000 tons [1].

A paradigm that considers waste as a resource that has economic value and can be utilized, for example, for energy, compost, fertilizer, and industrial raw materials. Waste reduction activities aim to make all levels of society, both government, business, and the wider community; carry out activities to limit waste generation, recycling and reuse of waste or better known as *Reduce, Reuse and Recycle (3R).*

A waste bank is a place used to collect waste that has been sorted. Waste banks are managed using a banking-like system carried out by volunteer officers.

In the waste bank there is a profit-sharing mechanism where profits from waste are sold by the waste bank. The percentage of profit sharing also varies, some are with a savings system, customers save with waste and are converted with a certain value and nominal according to the market price of the waste saved, some buy out as in the junkyard.

The percentage of profit sharing also varies, some are with a savings system, customers save with waste and are converted with a certain value and nominal according to the market price of the waste saved, some buy out as in the junkyard.

The waste bank in principle operates like a bank in general. It's just that the object saved is not money, but garbage. In the process, the customer comes to save waste, and at a predetermined time can withdraw money from the waste that has been saved by the customer. The waste collected at the Waste Bank will later be sorted by the manager, then recycled and sold to the contractor.

2. Method

2.1. Literature Review

Perceived Usability

Usability perception is the degree to which a person believes that using a technology will improve its performance. Benefits that are expected by information technology users are benefits expected by information technology users in carrying out tasks.

The perception of usability is a factor that strongly influences the acceptance, adoption and use of the system by users. In the context of this study, it can be interpreted that the perception of usefulness in using information systems is a subjective view of users regarding the benefits obtained by users in using application systems.

Perceived usefulness defined by [2] impacts the belief in users that the use of a system or technology, so that its performance can find an improvement, can be used profitably.It defines usability perception as the degree to which individuals believe that using a particular system can increase efficiency and effectiveness in daily life.

[2] conceptualize that *perceived usefulness* is measured through indicators such as improving job performance, making work easier and overalls the technology used is felt useful.

The indicators of perceived usefulness are as follows [3]:

1) The use of the system is able to improve individual performance
2) The use of the system can increase the level of individual productivity
3) The use of the system can increase the effectiveness of individual performance
4) The use of the system is beneficial for the individual.

Perception of Convenience

Perceived ease is defined as the degree to which a person believes that using a technology will be effort-free. The use of information technology believes that information technology is more flexible, easy to understand and easy to operate as a characteristic of ease of use. One of the factors that causes users to accept or reject the system is related to the use of the system. Users tend to use or not an application that is perceived as something they believe will help their performance in doing work [4].

According to [5] perceived *ease of use* can be defined as a consumer confidence in the use of technology that does not require effort so that each individual has access to use

according to needs. The greater the individual's awareness of easy-to-use technology, the greater the individual's acceptance of the use of technology.

This definition is also supported by [6] which states that the perception of ease is defined as a measure by which a person believes that the technology can be easily understood and used. [7] define convenience perception as a measure by which future users perceive a system to be barrier-free.

Based on some of these definitions, it can be said that the perception of ease can reduce one's effort both time and energy to learn a system or technology because individuals believe that the system or technology is easy to understand.

Application User Attitude

Attitude is an evaluation of positive or negative beliefs or feelings of a person who must perform the behavior to be determined [8]. According to [9] which is based on Fishbean and Ajzen, attitude is the sum of the affections (feelings) that a person feels to accept or reject an object or behavior and is measured by a procedure that places individuals on a two-pole evaluative scale for example good or bad; agree or refuse ; and more.

Attitude formation is facilitated by direct personal experience and influenced by the ideas and experiences of friends and family members and openness to mass media. In addition, individual personality plays a major role in attitude formation. That a person's attitude toward information systems indicates how far that person perceives that information systems are good or bad for him. [10] distinguish two kinds of attitudes, namely attitudes towards objects and attitudes related to behavior. Attitude towards objects is a person's feelings towards objects or objects. In contrast to attitudes regarding behavior that lead more to his behavior rather than to his object. A person's attitude consists of cognitive elements *or* perspectives, affective, and components related to behavior [11].

[8] for the measurement of this user attitude variable will use the following statement indicators:

1) Desire to use the application: user perception of the extent to which application users are interested in using the application
2) Advantages in using the application: user perception of the extent to which application users feel the benefits in using application services
3) Pleasure in using the application: user perception of the extent to which application users feel happy in using application services.

Application User Interests

[12] explain interest or intention is the tendency to perform an action / behavior or something that immediately precedes the actual buying behaviors. Consumer behavior is as anything done by someone related to obtaining, making choices, or using products or services. This behavior can be either *overt behavior* or *covert behavior*.

Interest is defined as the desire to perform a behavior. This means that a person's interest in performing a behavior is predicted by his attitude toward his behavior and how he thinks others will judge him if he performs that behavior. Someone who is interested in an activity and pays attention to that activity must be based on a sense of pleasure and if a sense of pleasure arises, then someone will consistently use it in the future.

According to [13], the factors that generate interest can be classified as follows:

1) Factor in needs from within.
   These needs can be physical and psychological.
2) Social motive factors.
   Interest in a person can be driven by social motives i.e. the need to gain recognition, appreciation from the environment in which he is located.
3) Emotional factors.
   This factor is a measure of a person's intensity in paying attention to a certain activity or object.

Previous Research

[14] This study aims to examine the role of *the Technology Acceptance Model* (TAM) on Attitude. The data used is primary data using questionnaires. This study used an explanatory research design with quantitative methods. The population in this study is Adopters of internet banking services and the number of samples in this study is 100 respondents. Research findings show that: (1) perceived ease of use (PEOU) has a significant effect on perceived usability; (2) that the perceived convenience (PEOU) has a significant effect on the attitude of internet adoption 12 banking (ATT); (3) perceived usability (PU) has a significant effect on internet banking adoption attitudes (ATT).

[15] This study aims to determine the effect of risk, ease of use, trust *of electronic word of mouth*, on the use of mobile banking services. This study used a questionnaire as an instrument to take a sample of 100 respondents, who were mobile banking users. Data analysis using multiple linear regression.

Research [16] states that the perception of convenience has a positive impact on attitudes towards using mobile banking. The results of this study are consistent with research conducted by [17]. Based on research on the public [18] states that the perception of ease of use has a significant effect on attitudes in transacting using mobile banking.

Research Variable Relationship

Usability perception is a construct of the *Theory Acceptance Model* that explains individual acceptance behavior towards technology. In this theory explains that the perception of usefulness is a factor that influences attitudes towards a technology, which influences behavioral intentions to use that technology. Usability perception is the degree to which individuals believe that the use of technology can improve their performance. From this definition, it can be seen that the perception of usefulness is a belief about decision making.

The benefits of using information technology can be from the trust of information technology users in deciding the acceptance of information technology, with one belief that the use of information technology makes a positive contribution. Ease of use will reduce one's effort (both time and energy) in learning information technology.

Conceptual Framework

A frame of mind is a conceptual model of how a theory relates to various factors that have been identified as important. The concept of this study consists of three independent variables and one dependent variable. The frame of mind in this study is as follows:

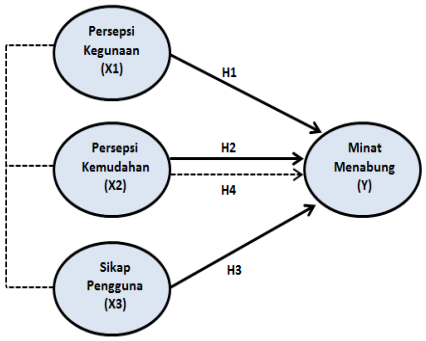

Figure 1 Research Conceptual Framework

2.2. Research Hypothesis

A hypothesis is a temporary answer to the formulation of a research problem, where the formulation of the research problem has been stated in the form of a question sentence. It is said to be provisional because the answers given to the relevant theory, have not been based on empirical facts obtained through data collection.

2.3. Research Methods

Research Approach

The type of research conducted is *explanatory research* using a quantitative approach, which uses data in the form of numbers as a tool to analyze information about what you want to know.

Population and Sample

The determination of the number of samples using the formula for sampling where the population is large and the number is unknown can use the following formula:

$$n = \frac{Z^2}{4(Moe)^2}$$

Where:
n = number of samples.
z = the level of confidence required in determining the number of samples is 95% which refers to the Z table where 95% = 1.96
Moe = maximum tolerable margin of error of 5%.
From this formula, the sample calculation is as follows:

$$n = \frac{1.92^2}{4(Moe)^2}$$

$$n = \frac{1.92^2}{4(0.1)^2}$$

$$n = 96.04$$

From the calculation of the formula above, the number of samples was obtained at 96.04, to make it easier, the number of samples was rounded to 100 people.

Operational Variables

The operational definition describes the specific way used by researchers in measuring a variable to be used, there are four variables used in the analysis of this study.

Data Collection Instrument

The data used are primary data and secondary data, primary data collected through observations, interviews and distribution of questionnaires to respondents. While secondary data is collected through literature studies and documentation related to the research conducted.

Data Analysis Techniques

Some of the data processing techniques carried out include:

Validity Test and Reliability Test

To test whether the question items are valid or not, the validity test is carried out on a sample of respondents. If the question item has r count> from r table, the question item is said to be valid with a significance level of 0.05.From the test results, a calculated value is obtained from the validity test results, then

To determine the validity or not then the decision-making policy is:

1. If the r value is calculated > r table, then the questionnaire question item is declared valid.
2. If the r value is calculated < r table, then the questionnaire question item is declared not valid.

Descriptive Analysis

Descriptive statistical analysis is an analysis that shows the development and growth of a situation and only provides an overview of a particular situation by describing the properties of the object of study.

Data Analysis

Data analysis uses inferential descriptive techniques, namely research that is able to describe the relationship between variables through statistical tools with certain stages and conditions to test hypotheses and relate one variable to another. The stages of analysis include:

1. **Analysis of the validity of the instrument / PLS Algorithm**

   This stage serves to determine how much the ability of independent variables to represent bound variables through validity tests and reliability tests (Widiyastuti, 2020).

2. **Bootstrapping**

   After all the prerequisites of the PLS Algorithm stage are met, then bootstrapping testing is carried out to find out how significant the influence between variables in the study is through the analysis of the path coefficient between variables to test the research hypothesis. A variable can be said to have a positive and significant effect on other variables if the statistical significance value of T > t table (5%) = 1.96 and P value < 0.05.

3. Result and Discussion

Loading Factor

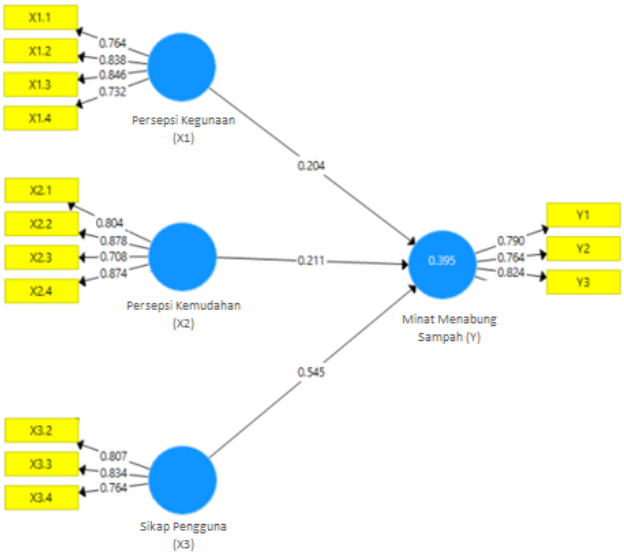

Figure 2 Research Framework

Based on the results of the data analysis carried out, further testing of the research hypothesis that has been formulated.

1) Hypothesis 1: It is suspected that the perception of usefulness has a positive and significant effect against interest in saving garbage. The results of the analysis shown in table 4.7, the statistical T value of (2.544) > of the table T (1.96) with the P value of (0.01) < of 0.05 so that it can be stated that the perception of usefulness has a significant positive effect of (0.204) on the interest in saving waste using the ABANK Application which means that the first hypothesis of this study is accepted
2) Hypothesis 2: It is suspected that the perception of convenience has a positive and significant effect on the interest in saving waste. The results of the analysis shown in table 4.7 with a statistical T value of (2.045) > of T table (1.96) with a P value of (0.04) < of 0.05 so that it can be stated that the perception of convenience has a significant positive effect of (0.211) on the interest in saving waste using the ABANK Application which means that the hypothesis of these two studies is accepted.
3) Hypothesis 3: It is suspected that user attitudes have a positive and significant effect on interest in saving waste. The results of the analysis shown in table 4.7 with a statistical T value of (7.307) > of the T table (1.96) with a P value of (0.00) < of 0.05 so that it can be stated that user attitudes have a significant positive effect of (0.545)

on the interest in saving waste using the ABANK Application which means that the hypothesis of these three studies is accepted.

4) Hypothesis 4: It is suspected that perception of usefulness, perception of convenience and attitude simultaneously have a positive and significant effect on interest in saving waste. Based on the results of the analysis of the R Square table in table 4.6, simultaneously

   the perception of usefulness, perception of convenience and attitude simultaneously have an influence of (0.395) > 0.33 which means it has a strong influence on the interest in saving waste, so it can be stated that the perception of usefulness, perception of convenience and user attitude have a significant positive effect of (0.395) on the interest in saving waste using the ABANK Application which means The fourth hypothesis of the study is accepted.

The Effect of Perceived Convenience Has a Positive and Significant Effect on Interest in Saving Waste.

According to [6], the perception of ease as the extent to which someone believes that using a technology will be free from effort. Ease of use perception as a person's level of confidence that in using a particular system does not require hard effort. Although everyone's efforts are different, but in general to avoid rejection from system users of the system developed, the system must be easy to apply by users without spending burdensome effort, the sensitivity of use and interaction between users and the system can also show ease of use. This concept includes clarity of the purpose of using information systems and ease of use of the system for purposes according to the wishes of the user. This concept provides the understanding that if the information system is easy to use, then users will tend to use the information system.

The Influence of Application User Attitudes Has a Positive and Significant Effect on Interest in Saving Waste

Behavioral intention is a person's desire to perform a certain attitude or behavior. A person who performs a behavior has the intention to do it. If the user has felt the ease of use, it will have a perceived impact on the service system of the user service to make decisions on the application service.

In the stages of the consumer decision-making process, after consumers search and process information, the next step is to respond to the information they receive. A positive attitude towards a particular object is characterized by an affirmative attitude that will allow consumers to respond to that object. Consumer attitudes are closely related to consumer trust, consumer trust is needed especially to take action. Several previous studies conducted by [18], stated that there was a positive influence of consumer attitude variables on online transaction interest. The results of this study are the same as previous research conducted by

[2] where attitudes have a significant effect on behavioral interests, respondents will use a technology if the technology has benefits.

The Influence of Perceived Usability, Perceived Ease and User Attitude Simultaneously Has a Positive and Significant Effect on Interest in Saving Waste

This explains that if the convenience obtained by individuals in operating an application can be achieved, then the individual will accept the application and then the desire to use the application arises. Then, a person's interest in using the application can also be influenced by the perception of usability, this explains that the usefulness obtained by individuals in using the application can include functional benefits, economic benefits and emotional benefits because users also prioritize the function of the application when adopting it. An individual's knowledge or experience of an application that allows them to still hesitate to use so that the individual needs encouragement or opinions from other parties that can be used as their consideration in using the application. Then a person's interest in using the application is influenced by a person's attitude.

The findings in this study that show that perceptions of usability, perceptions of ease and attitudes of application users have a significant effect on behavioral interest support TAM theory. In addition, several previous studies have also found the same [19],[20] found a positive and significant influence between perceived usefulness and behavioral interest. Researchers revealed that by continuing to improve user perceptions of the usefulness of technology, users tend to continue using the technology.

Theoretical Implications

The implications of the results of this research are related to its contribution to the development of concepts in the field of marketing science. The findings of this study reinforce previous studies that show that perceptions of usability, perceptions of ease and attitudes of application users affect the interest in using applications. Research shows a positive and significant relationship between the perception of ease of interest in using the application, the perception of convenience shows a positive influence on the interest in using the application and the attitude of application users has a positive effect on the interest in using the application.

Implikasi Praktis

The practical implication of this research is that usability factors become important factors for users in taking a stance on an object or application. Increased productivity, efficient and effective is an indicator of an individual taking an attitude, the more positive perceptions that arise about certain objects in this case the waste bank application will increase the attitude of users or individuals so that interest in using the application also increases.

4. Conclusion

Based on an understanding of the basic theory of research variables, references to previous research and the results and discussion of this research that have been described above, it can be concluded:

1. The perception of usefulness has a positive effect on the interest in saving waste through the ABANK Application at the Cemara Waste Bank, Malili District, Kab. East Luwu. A positive attitude to use the application because users believe that the application can improve performance, productivity, and effectiveness of performance and the application is beneficial to users.
2. Perception of Convenience has a positive effect on the interest in saving waste through the ABANK Application at the Cemara Waste Bank, Kec. Malili, East Luwu District. When individuals feel the ease of using technology, and require less energy and time when using technology, then the technology is more likely to be accepted by individuals.
3. User attitudes have a positive effect on interest in saving waste through the ABANK Application at the Cemara Waste Bank, Malili District, Kab. East Luwu. User attitudes have a strong effect in determining whether users are interested in using application services or not.
4. Perceived usability, perceived ease and user attitude simultaneously have a positive effect on interest in saving waste through the ABANK Application at the Cemara Waste Bank, Malili District, East Luwu District. Applications that are perceived usability and ease of application will increase the positive attitude of users which will correspondingly increase interest in using the application.

5. References

[1] A. Ramos, N. P. Purba, I. Faizal, Y. Mulyani, dan M. L. Syamsuddin, "Microplastic tracking from Pacific garbage to Northern Indonesia Sea," Jurnal Perspektif Pembiayaan Dan Pembangunan Daerah, vol. 6, no. 1, 2018. [Online]. Available: https://doi.org/10.22437/ppd.v6i1.5178

[2] K. Fischer dan D. Schofield, "Responsive Redesign and its Effects on Perceived Usefulness," Journal of Computer Applications, vol. 8, hal. 1-14, 2021. [Online]. Available: https://doi.org/10.5121/caij.2021.8101

[3] F. J. Chille, F. A. Shayo, dan N. S. Kara, "Adoption of Mobile Marketing in the Telecommunication Industry of Tanzania: The Effects of Perceived Usefulness, Ease of Use, and Customer's Knowledge," European Scientific Journal ESJ, vol. 17, no. 12, 2021. [Online]. Available: https://doi.org/10.19044/esj.2021.v17n12p160

[4] Z. Lanlan, A. Ahmi, dan O. M. J. Popoola, "Perceived ease of use, perceived usefulness and the usage of computerized accounting systems: A performance of micro and small enterprises (MSEs) in China," International Journal of Recent Technology and Engineering, vol. 8, no. 2 Special Issue 2, 2019. [Online]. Available:

https://doi.org/10.35940/ijrte.B1056.0782S219
[5] Q. Wan, S. Yang, Y. Liao, dan Y. Xia, "Group-buying coupons considering consumers' perceived ease of use," Intl. Trans. in Op. Res., vol. 27, hal. 1638-1663, 2020. [Online]. Available: https://doi.org/10.1111/itor.12482
[6] Panergayo, A. A., & Aliazas, J. V. (2021). Students' Behavioral Intention to Use Learning Management System: The Mediating Role of Perceived Usefulness and Ease of Use. International Journal of Information and Education Technology, 11(11), 538-545. Available at SSRN: https://ssrn.com/abstract=3978918
[7] D. Suleman, S. Sabil, S. Rusiyati, I. Sari, S. Rachmawati, E. Nurhayaty, and R. B. Parancika, "Exploring the relationship between trust, ease of use after purchase and switching repurchase intention," International Journal of Data and Network Science, vol. 5, no. 3, 2021, doi: 10.5267/j.ijdns.2021.4.002.
[8] S. Jahn, G. Tsalis, and L. Lähteenmäki, "How attitude towards food fortification can lead to purchase intention," Appetite, vol. 133, 2019, doi: 10.1016/j.appet.2018.11.022.
[9] B. Dharmawan, M. Yanto, and R. Vidyasari, "Pengaruh Sikap, Norma Subjektif, Dan Persepsi Risiko Terhadap Minat Bertransaksi Menggunakan Aplikasi Fintech," Account, vol. 8, no. 1, 2021, doi: 10.32722/acc.v8i1.3876.
[10] I. K. Rachmawati, M. Bukhori, Y. Majidah, S. Hidayatullah, and A. Waris, "Analysis Of Use Of Mobile Banking With Acceptance And Use Of Technology (Utaut)," International Journal of Scientific and Technology Research, vol. 9, no. 8, pp. 534-540, 2020, ISSN 2277-8616.
[11] F. Segado-Boj and E. Said-Hung, "Alternative approaches to news: the role of media distrust, perceived network homophily, and interests in news topics," Revista de Comunicación, 2021.
[12] P. Kotler and G. Armstrong, Principles of Marketing, Pearson, 2018.
[13] Y. Li and H. Shang, "Service Quality, Perceived Value, and Citizens' Continuous-Use Intention regarding e-Government: Empirical Evidence from China," *Information & Management*, vol. 57, 103197, 2020, doi: 10.1016/j.im.2019.103197.
[14] R. C. Wilson, E. Bonawitz, V. D. Costa, and R. B. Ebitz, "Balancing exploration and exploitation with information and randomization," *Current Opinion in Behavioral Sciences*, vol. 38, pp. 49-56, 2021, doi: 10.1016/j.cobeha.2020.10.001.
[15] Li, Y. Sha, X. Song, K. Yang, K. Zhao, Z. Jiang, and Q. Zhang, "Impact of Risk Perception on Customer Purchase Behavior: A Meta-Analysis," *Journal of Business and Industrial Marketing*, vol. 35, no. 1, pp. 76-96, 2020, doi: 10.1108/JBIM-12-2018-0381.
[16] Q. Zhou et al., "A study on factors affecting service quality and loyalty intention in mobile banking," *Journal of Retailing and Consumer Services*, vol. 60, p. 102424, 2021.
[17] B. Eine and P. Charoensukmongkol, "A cross-cultural perspective on factors that influence the intention to repurchase in online marketplaces: A comparison between Thailand and Germany," *Asian Journal of Business Research*, vol. 11, no. 1, pp. 20-39, 2021.
[18] S. Verkijika and L. De Wet, "Understanding Word-of-mouth (WOM) Intentions of Mobile App Users: The Role of Simplicity and Emotions during the First Interaction," *Telematics and Informatics*, vol. 41, 2019, doi: 10.1016/j.tele.2019.05.003.
[19] E. B. Diop, S. Zhao, and T. V. Duy, "An extension of the technology acceptance model for understanding travelers' adoption of variable message signs," *PLoS One*, vol. 14, no.

4, pp. e0216007, Apr. 2019, doi: 10.1371/journal.pone.0216007.

[20] A. Al-Gasawneh et al., "Mobile-customer relationship management and its effect on post-purchase behavior: The moderating of perceived ease of use and perceived usefulness," *International Journal of Data and Network Science*, vol. 6, no. 2, 2022, doi: 10.5267/j.ijdns.2021.12.010