

## The Implementation of the Theory of Planned Behavior (TPB) in the Use of Electric Motorbikes in Surabaya



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**ABSTRACT:** This research aims to examine the influence of Perceived Usefulness and Perceived Ease of Use on Behavioral Intention through Attitude Toward Use on Electric Motorbikes in Surabaya. The sampling technique used was non-probability sampling with purposive sampling technique. The sample used in this research was 170 respondents. With the specified criteria, namely respondents over 17 years of age, respondents who live in Surabaya and respondents who have an interest in using electric motorbikes. The calculation results in this study show that perceived usefulness has a positive effect on attitude toward use, perceived ease of use has a positive effect on attitude toward use, attitude toward use has a positive effect on behavioral intention, perceived usefulness has a positive effect on behavioral intention, perceived usefulness has no effect. positive influence on behavioral intention through attitude toward use, perceived ease of use has a positive effect on behavioral intention through attitude toward use. The suggestion from this research are that electric motorbikes can create innovation by improving the quality of comfort and safety so that consumers will be more interested in using them.

**KEYWORDS:** The Theory of Planned Behavior (TPB)

### INTRODUCTION

Currently, the environmental situation in Indonesia is not good, which is caused by various factors, one of which is the use of motorbikes. Based on POLRI data, the number of motorbikes in Indonesia reached 152.51 million units as of December 31 2022. From this data it is known that 24.27 million units or 15.91% of them were in East Java. The large number of vehicles has caused pollution in Surabaya to be poor lately. This is shown by the city of Surabaya being in 7th position with the highest pollution in Indonesia (Indonesian Data). To overcome this problem, business people are starting to innovate by utilizing technology, namely by creating environmentally friendly electric motorbikes. To attract consumer interest, the government & other business people can promote this innovation to the surrounding community. By providing information about the advantages of these products and inviting people to care more about the environment. So people will automatically gain preferences and change their mindset to start caring more about the surrounding environment by using these products. In this way, people will start to be interested in buying environmentally friendly products and will increase their interest in purchasing these products, where if many people use environmentally friendly products and feel the advantages, users of these products will voluntarily tell about good experiences to people around them. about the benefits of the product. So consumers who were initially less interested in the product began to become interested after hearing its advantages directly from consumers who had used it.

With changes in consumer behavior as a result of environmental awareness, an attitude of caring for the environment will grow by using environmentally friendly products. One where products are environmentally friendly by utilizing today's sophisticated technology and where technology dominates daily life so like it or not, people have to accept and adapt as best as possible because it cannot be denied that using sophisticated technology can help make our daily work easier. Based on data submitted by the Secretary to the Head of Department (ESDM) in East Java, up to July 4 2023, there were 4,035 electric motorbike users. This data shows that consumers have accepted technological developments, which means that consumers already feel that using these products can make their daily activities easier. This shows the positive attitude of consumers who can accept the development of new technology, where using this new technology can improve consumer performance

Previous research that was used as the first reference was from Zhang and Chang, (2023:15) with the title "Applying the Extended Technology Acceptance Model to Explore Taiwan, Generation Z's Behavioral Intention toward Using Electronic Motorcycles" which was aimed at Generation Z in Taiwan, which Regarding increasing global warming, as well as environmental protection and green energy, these have become hot issues that have been widely discussed recently. Countries have proposed net zero carbon emissions trajectories, with low-carbon transport listed as a key goal for each country. Taiwan, which has the highest

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density of motorbikes in Asia, creates electric motorbikes as an environmentally friendly mobility solution that enjoys more development benefits thanks to its environmental friendliness and energy saving in the global context of environmental protection, energy saving, CO2 reduction and sharing economy. The research results show that: (1) consumers' perceived usefulness and ease of use have a positive effect on their attitudes towards the use of electric motors; (2) consumers' environmental concerns have no influence on their attitudes towards the use of electric motorbikes; and (3) consumer attitudes regarding the use of electric motorbikes, value propositions and government policies have a favorable impact on consumer availability in the use of electric motorbikes. The variables used are perceived usefulness, perceived ease of use, environmental concern, attitude toward use, value proposition, government policy and behavioral intention. The technology acceptance model is applied in this research and considers environmental considerations, value propositions and government policies as variables to examine Taiwanese Generation Z's behavioral intentions towards the use of electric motorbikes. A total of 391 questionnaires were collected and correlations between variables were analyzed using partial least squares structural equation modeling (PLS-SEM).

Previous research which is used as a second reference from Poonyawat et al, (2022:14) with the title "Determining Factors Affecting Behavioral Intention to Organize an Online Event during the COVID-19 Pandemic" which is aimed at people in Indonesia, regarding the use of technology so that they can carry out online events are one solution to connect people during the COVID-19 pandemic. The aim of this research is to determine the factors of holding online events during the COVID-19 pandemic by integrating the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). Overall, 366 data sets were collected from respondents through a convenience sampling approach from several social media platforms. They were asked to fill out an online questionnaire which had 40 questions under 8 segments. Additionally, online event promotion and perceived benefits were also found to have significant effects on attitudes, which also subsequently led to behavioral intentions. This study is one of the first studies to explore behavioral intentions to utilize online events during the COVID-19 pandemic. These findings will be especially useful for online event organizers, especially for improving online performance based on contributing factors. Additionally, this research may act as a stepping stone to help future researchers understand online events better. Finally, the technology acceptance model and theory of planned behavior in this research can be extended to explore the acceptance of online events worldwide. The variables used are perceived usefulness, perceived ease of use, online event promotion, hedonic motivation, utility issue / noise, attitude, behavioral intention, subjective norm. This data analysis using Structural Equation Modeling (SEM) shows that hedonic motivation is found to have the strongest effect on attitudes, which in turn leads to behavioral intentions.

If you look at the current state of the city of Surabaya, the air pollution that people breathe is not good, so awareness is needed in every community to care more about the surrounding environment, namely by changing people's mindset and changing their behavior, such as starting to support the use of environmentally friendly innovative products and getting involved in use. Research entitled "The Influence of Perceived Usefulness and Perceived Ease of Use on Behavioral Intention through Attitude Toward Use on electric motorbikes in Surabaya" was studied to determine the relationship between variables.

Based on this background, the problem formulation in this research is as follows:

1. Does Perceived Usefulness influence Attitude Toward Use in using electric motorbikes in Surabaya?
2. Does Perceived Ease of Use influence Attitude Toward Use in using electric motorbikes in Surabaya?
3. Does Attitude Toward Use influence Behavioral Intention in using electric motorbikes in Surabaya?
4. Does Perceived Usefulness influence Behavioral Intention in using electric motorbikes in Surabaya?
5. Does Perceived Ease of Use influence Behavioral Intention in using electric motorbikes in Surabaya?
6. Does Perceived Usefulness influence Behavioral Intention through Attitude Toward Use in using electric motorbikes in Surabaya?
7. Does Perceived Ease of Use influence Behavioral Intention through Attitude Toward Use in using electric motorbikes in Surabaya?

From the problem formulation, the aim of this research is to test and analyze the effects as follows:

1. Perceived Usefulness towards Attitude Toward Use in using electric motorbikes in Surabaya.
2. Perceived Ease of Use towards Attitude Toward Use in using electric motorbikes in Surabaya.
3. Attitude Toward Use towards Behavioral Intention in using electric motorbikes in Surabaya.
4. Perceived Usefulness towards Behavioral Intention in using electric motorbikes in Surabaya.
5. Perceived Ease of Use on Behavioral Intention when using electric motorbikes in Surabaya.
6. Perceived Usefulness towards Behavioral Intention through Attitude Toward Use in using electric motorbikes in Surabaya.
7. Perceived Ease of Use towards Behavioral Intention through Attitude Toward Use in using electric motorbikes in Surabaya.

Benefit of this research are:

1. Academic benefits

It is hoped that this research can expand existing theories and knowledge in existing theories

2. Practitioner benefits

This research is to be able to contribute to society in terms of decision making

## LITERATURE REVIEW

### *Perceived Usefulness*

According to Chong et al., (2019) perceived usefulness is the level of trust that users have in a particular system to improve user performance. Having high trust will influence consumers to buy and use these products to help improve their performance in everyday life. So, with this increase in performance, consumers will feel that the product has good value.

Putra et al., (2020) define perceived usefulness as the extent to which consumers believe that using technology will increase their productivity. Consumers believe in a product if the consumer has done research regarding the advantages and disadvantages of the product so that the consumer himself will determine whether the product can be trusted or not.

Nugraha et al., (2021) define perceived usefulness as a measure that shows that the use of technology is considered to provide benefits for the people who use it. Technological developments have positive and negative impacts, including the positive impact of technology can help make it easier for consumers to use, such as improving performance and making it easier to carry out daily activities.

According to Davis et al., (1989) and Wu et al., (2019) perceived usefulness is measured by:

1. Think riding an electronic motorcycle can improve my quality of life
2. Think riding an electronic motorcycle can solve my daily needs
3. Think riding an electronic motorcycle makes my commute more comfortable
4. Overall, think electric motorcycle is practical

### *Perceived Ease of Use*

According to Ma et al., (2018) perceived ease of use is the level of how confident a person is in using a particular system that will make their activities easier. Using the system requires time to adapt to understand it so it is not easy for users to immediately trust the system. If the user already understands the system, it will increase the user's confidence in using the system.

According to Aditya (2020), perceived ease of use is a person's habit of choosing to use or not use an application, which is based on the belief that the application can improve the performance of the activities they carry out. This habit makes a person try every application and make decisions about applications that can help improve performance. This decision is based on the experience gained and adjusted to what the user feels when using the application.

According to Ariningsih et al., (2022), perceived ease of use as the main key that determines users' attitudes and intentions to accept and use technology is simplicity of use. The user's attitude towards accepting new technology is by using new technology products with the hope that this acceptance can help users improve the resulting performance for the better.

According to Davis et al., (1989) and Wu et al., (2019), the measurement of perceived ease of use is:

1. Think it should be easy for me to ride an electronic
2. Think riding an electronic motorcycle does not require much effort
3. Think of the functions of electric motorbikes as not very complicated
4. Overall, it is easy to ride an electronic motorcycle

### *Attitude Toward Use*

According to Irawati and Suhartono (2020), attitude toward use is defined as user behavior when using a system, which can be in the form of acceptance or rejection of someone who uses technology in everyday life. Acceptance or rejection of use depends on the level of public trust, where if a technology has a positive impact then society will accept it and conversely if the technology does not help society then the technology will be rejected.

According to Uska and Wirasasmita (2018), attitude toward use is a view that reflects a person's acceptance or rejection of the technology used in their work. A technology that can make work easier will be accepted by society because the purpose of technology was created, namely to make life easier for people in their daily lives, therefore technology will always continue to develop.

According to Jumardi (2021), attitude toward use is defined as an approach to assessing whether technology is accepted or not among society. It can be said to be acceptable if people have used this technology by experiencing benefits that can improve performance. With increased performance, people will feel happy and like the benefits of technology by accepting and starting to use the technology

According to Davis et al., (1989), Mercedes et al. (2018) and Wolf & Madlener (2019) measuring attitude toward use can be done through:

1. Think it feels good to ride an electric motorcycle
2. Think riding an electric motorcycle is a wise decision
3. Think riding an electronic will be enjoyable
4. Think of electronic riding as a good choice

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### ***Behavioral Intention***

According to Saha and Nath (2017) behavioral intention is the desired behavior and expectations of future visitors. The behavior that consumers want to get is to be given the best service so that it will create a good first impression of the product and the consumer hopes that other consumers will get good service so that they will get satisfaction with the product or service.

According to Cronin et al., (2017) behavioral intention is defined as a positive customer response to the quality of the product or service offered by a company, as well as the intention to consume the company's product again, which is expected customer behavior. By getting a positive customer reaction, the customer will voluntarily recommend the product or service to others without any influence or pressure from any party. According to Nursiah (2017) behavioral intention is defined as a way to measure the level of customer satisfaction with the products and services they use. This level of satisfaction can be seen from a consumer who repurchases the product or service. If the level of satisfaction is high, it is likely that consumers will frequently repurchase and conversely, if satisfaction is low, consumers will not repurchase.

According to Wu et al., (2019) and Sepasgozar et al., (2019) the measurement of behavioral intention variables is carried out by:

1. Think electric motorcycle is worth buying
2. Intend to ride electronic motorcycles in the future
3. Would recommend riding an electronic motorcycle to my friends and relatives
4. Would like to buy an electronic motorcycle in the future

### ***Previous Research***

Previous research that was used as the first reference by Zhang and Chang (2023:15) was entitled "Applying the Extended Technology Acceptance Model to Explore Taiwan, Generation Z's Behavioral Intention toward Using Electronic Motorcycles" which was aimed at the surrounding community, as well as environmental protection and green energy has become a hot issue that has been widely discussed recently. Countries have proposed net zero carbon emissions trajectories, with low-carbon transport listed as a key goal for each country. Taiwan, which has the highest density of motorbikes in Asia, creates electric motorbikes as an environmentally friendly mobility solution that enjoys more development benefits thanks to its environmental friendliness and energy saving in the global context of environmental protection, energy saving, CO<sub>2</sub> reduction and sharing economy. The research results show that: (1) consumers' perceived usefulness and ease of use have a positive effect on their attitudes towards the use of electric motors; (2) consumers' environmental concerns have no influence on their attitudes towards the use of electric motorbikes; and (3) consumer attitudes regarding the use of electric motorbikes, value propositions and government policies have a positive influence on consumer intentions to use electric motorbikes. The variables used are perceived usefulness, perceived ease of use, environmental concern, attitude toward use, value proposition, government policy and behavioral intention. The technology acceptance model is applied in this research and considers environmental considerations, value propositions and government policies as variables to examine Taiwanese Generation Z's behavioral intentions towards the use of electric motorbikes. A total of 391 questionnaires were collected and correlations between variables were analyzed using partial least squares structural equation modeling (PLS-SEM).

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### ***The Influence of Perceived Usefulness on Attitude Toward Use***

Perceived Usefulness has an influence on Attitude Toward Use, where if someone is confident that using the system can improve the quality of their performance, they automatically give an attitude of acceptance of the product. From the results of tests carried out by Darmansyah (2022), it shows that Perceived Usefulness has a positive and significant effect on Attitude Toward Use. If a system can be useful for someone then he will use the system and vice versa, if a system does not provide benefits to other people

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then that person will not use the system. Based on this opinion, a hypothesis can be formulated.

H1: Perceived Usefulness influences Attitude Toward Use

### ***The Influence of Perceived Ease of Use on Attitude Toward Use***

Perceived Ease of Use has an influence on Attitude Toward Use, where ease of use of a technology can influence attitude towards use. The easier it is to use, the more consumers will like it so they accept the technology to use it to help with their daily activities.

The test results carried out by Apprillia & Santoso (2020) show that Perceived Ease of Use has a positive and significant influence on Attitude Toward Use. According to Wilson et al., (2021) Perceived Ease of Use can be understood as a consumer's assessment of a product or service to learn and try new technology where the assessment can be positive or negative. If people give a positive assessment of use, it indicates that new technology provides convenience. Based on this opinion, a hypothesis can be formulated

H2: Perceived Ease of Use influences Attitude Toward Use

### ***The Influence of Attitude Toward Use on Behavioral Intention***

Attitude Toward Use has an influence on Behavioral Intention, where when people have shown an attitude towards using a new technology, it will provide a loyal attitude so that people will later tell other people about the advantages of the product or service without any coercion from any party.

The test results carried out by Rifaldi and Herti (2022) show that positive and significant results in the relationship between Attitude Toward Use have a positive effect on Behavioral Intention. According to Rifaldi, M and Heri (2022), when someone has a friendly attitude towards technology, the higher their intensity of use will be. Attitudes can be positive or negative which will show consumer interest in a product. Based on this opinion, a hypothesis can be formulated

H3: Attitude Toward Use influences Behavioral Intention

### ***The Influence of Perceived Usefulness on Behavioral Intention***

Perceived usefulness influences behavioral intention with the benefits of use creating practicality in an activity where one product can provide benefits in many ways so that consumers will rely on that product. If a product is relied on by consumers, interest in using it will be higher

The test results carried out by Weng et al., (2018) show that perceived usefulness has a positive and significant effect on behavioral intention. This shows that the existence of a benefit from a technology will increase the behavior of interest in using a product. The significant and positive results show that the higher the perceived usefulness, the higher the behavioral intention that occurs. Based on this opinion, a hypothesis can be formulated

H4: Perceived Usefulness influences Behavioral Intention

### ***The Influence of Perceived Ease of Use on Behavioral Intention***

Perceived ease of use influences behavioral intention. The convenience that a product provides to its users will increase their intention to use, where users will feel comfortable using the product so that switching to another product will be difficult.

The results of tests carried out by Kumala et al., (2020) show that perceived ease of use has a positive and significant effect on behavioral intention. According to Ismail (2016), one of the things that attracts users to consider using technology is convenience. Even though a technology offers advanced features or high benefit value, if the technology is difficult to use then consumers' interest in using it may also decrease. Based on this opinion, a hypothesis can be formulated

H5: Perceived Ease of Use influences Behavioral Intention

### ***The Influence of Perceived Usefulness on Behavioral Intention through Attitude Toward Use***

If people already trust a system, they will increase their loyalty to the system by showing that they have accepted the use of the system and they will recommend the system to people around them that using it can increase user productivity and effectiveness.

Based on the results of tests carried out by Gusti (2016), it shows that there is an influence of perceived usefulness on behavioral intention through attitude toward use. Where attitude toward use acts as a good mediator in the relationship between perceived usefulness and behavioral intention. By creating a technological innovation product where the technology is created to provide benefits to its users. If the benefits of the product are useful for the user, it will have an impact on the desire to use the product, where this use indicates that the user believes that the product will help make work easier. Based on this opinion, a hypothesis can be formulated

H6: Perceived Usefulness influences Behavioral Intention through Attitude Toward Use

### ***The Influence of Perceived Ease of Use on Behavioral Intention through Attitude Toward Use***

The ease of use of a technology will influence the level of consumer interest in the product, where if the technology is accepted by society, attitudes towards use will emerge. If consumers trust this technology, it can help improve their performance. If it is easy to use, consumer interest in the product will be high, and conversely, if it is difficult to use, consumer interest in the product will be low.

Based on the results of tests carried out by Gusti (2016), it shows that there is an influence of perceived ease of use on behavioral

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intention through attitude toward use. Where attitude toward use acts as a good mediator in the relationship between perceived ease of use and behavioral intention. If people show a positive attitude towards the use of electric motorbikes, it will influence other people's behavioral intentions to respond positively to electric motorbikes. Based on this opinion, a hypothesis can be formulated H7: Perceived Ease of Use influences Behavioral Intention through Attitude Toward Use

### RESEARCH MODEL

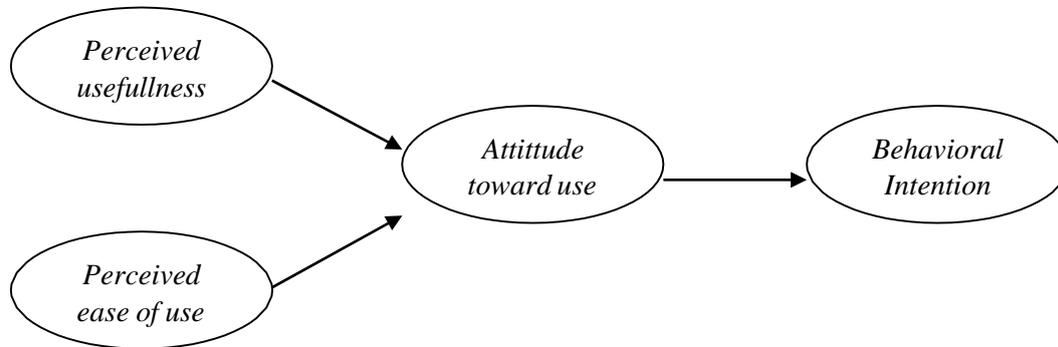


Figure 1. Research Model

### Hypothesis

Based on this research model, the research hypothesis can be concluded as follows:

1. Perceived usefulness influences attitude toward use of electric motorbikes in Surabaya
2. Perceived ease of use influences attitudes toward use on electric motorbikes in Surabaya
3. Attitude toward use influences behavioral intention on electric motorbikes in Surabaya
4. Perceived usefulness influences behavioral intention on electric motorbikes in Surabaya
5. Perceived ease of use influences behavioral intention on electric motorbikes in Surabaya
6. Perceived usefulness influences behavioral intention through attitudes toward use on electric motorbikes in Surabaya
7. Perceived ease of use influences behavioral intention through attitudes toward use on electric motorbikes in Surabaya

### RESEARCH METHODS

The research design used in this research is a quantitative research method. Based on the research model, the following research variables can be identified:

1. Independent Variable:
  - a. Perceived usefulness
  - b. Perceived ease of use
2. Mediating Variable: Attitude Toward Use
3. Dependent Variable: Behavioral Intention

The measurement method applied in this research is using a Likert scale. The tool used in this research is a questionnaire. In the context of this research, the population targeted is people who are interested in electric motorbikes in the Surabaya area. This research will use a sample of 160 respondents. The criteria that must be met in this research sample are:

1. Respondents with a minimum age of 17 years
2. Domiciled in Surabaya
3. Have an interest in using an electric motorbike

The sampling method in this research used convenience sampling. Data analysis uses SEM (Structural equation modeling).

### RESULT AND DISCUSSION

Based on the results of data processing, it is known that the number of respondents was 170 (100%). Meet the specified respondent characteristic requirements. This shows that the characteristics of the respondents have been fulfilled in this research

The results of descriptive statistical data processing on the variables studied, all respondents stated that they agreed to the carving items for each variable. Meanwhile, the results of the univariate normality test show that not all indicators have a normal distribution because other indicators show data acquisition below  $p\text{-value} > 0.05$ . Therefore, it is necessary to look at the multivariate normality test. The results show that the measurements in this study are normally distributed because the indicator shows a  $p\text{-value} < 0.05$ , meaning the data distribution is normal so the research can continue.

### Validity test

According to Yamin and Kurniawan (2009:7), validity testing aims to show that an indicator can measure the latent variable used

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in a study. Construct validity can be calculated using the statistical t test approach of factor loading with an agreement where an indicator can be said to be valid, if the t value of the factor loading is  $>1.96$ .

**Table 1. Validity Test Results**

Variabel	Indikator	T-Value	Cut Off	Keterangan
PU	PU1	0,00	*Indeks	Valid
	PU2	3,88	$> 1,96$	Valid
	PU3	4,53	$> 1,96$	Valid
	PU4	3,38	$> 1,96$	Valid
PEOU	PEOU1	0,00	*Indeks	Valid
	PEOU2	5,37	$> 1,96$	Valid
	PEOU3	7,14	$> 1,96$	Valid
	PEOU4	8,30	$> 1,96$	Valid
ATU	ATU1	0,00	*Indeks	Valid
	ATU2	4,60	$> 1,96$	Valid
	ATU3	4,35	$> 1,96$	Valid
	ATU4	4,53	$> 1,96$	Valid

Source: Data, processed.

### Reliability Test

**Table 2. Reliability Test**

Variabel	CR	Cut Off	Description
Perceived Usefulness	0,58	$> 0,50$	Reliable
Perceived Ease of Use	0,73	$> 0,50$	Reliable
Attitude Toward Use	0,70	$> 0,50$	Reliable
Behavioral Intention	0,78	$> 0,50$	Reliable

Source: Data, processed.

Based on Table 2, according to Sugiyono (2016:168) the variables perceived ease of use (0.70), attitude toward use (0.70) and behavioral intention (0.78) have values between

0.70 - 0.90 so it can be said that reliability is high. Meanwhile, the variable perceived usefulness (0.58) has a value between 0.50 – 0.70 which can be said to have moderate reliability. It can be concluded below in Table 4.13 that all variables are declared reliable in this research so that data testing analysis can be continued

Table 3 shows that most of the model results have a good fit value compared to the expected goodness of fit value, except for the Minimum Fit Function Chi-Square, GFI, RFI and AGFI. So the research results show that the research model is declared good and can be used.

### Goodness of Fit Test

**Table 3. Goodness of Fit Test**

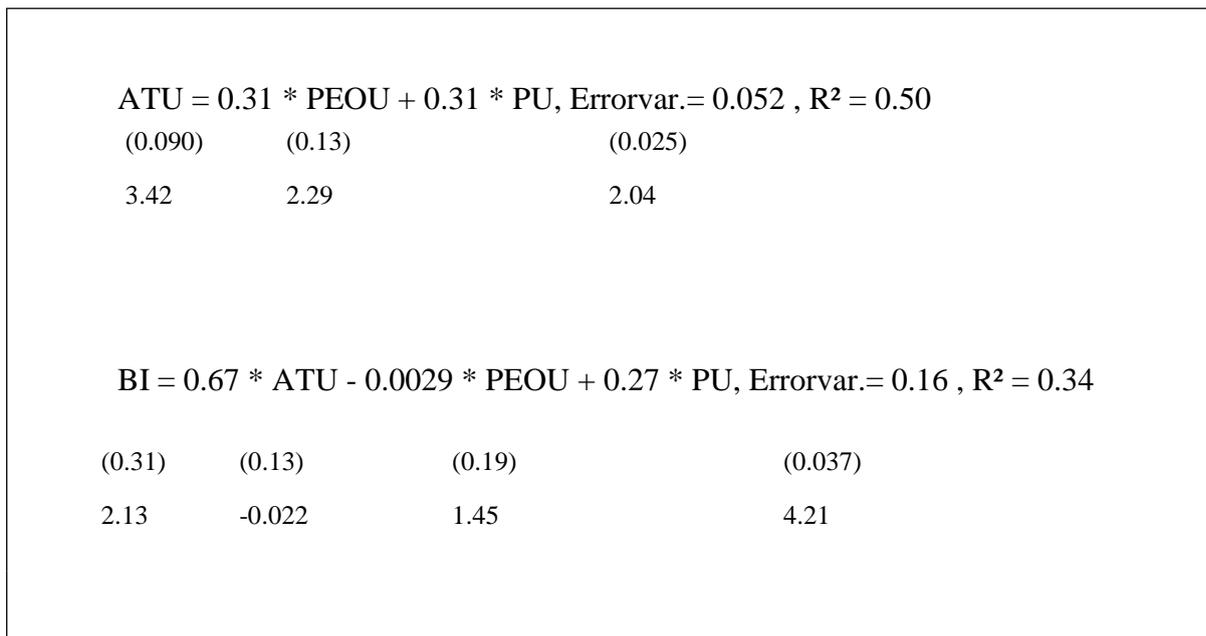
Goodness of Fit	Compatibility	Results	Description
Minimum FitFunction Chi-Square	P Value $> 0.05$	1044.86 (P = 0.0)	Marginal Fit
RMSEA	$\leq 0.08$	0,036	Good Fit
NFI	$\geq 0.90$	0,89	Good Fit
NNFI	$\geq 0.90$	0,97	Good Fit
CFI	$\geq 0.90$	0,98	Marginal Fit
IFI	$\geq 0.90$	0,98	Good Fit
RFI	$\geq 0.90$	0,87	Marginal Fit
RMR	$\leq 0.10$	0,027	Good Fit
STANDARDIZED RMR	$\leq 0.10$	0,058	Good Fit
GFI	$\geq 0.90$	0,91	Good Fit
AGFI	$0.80 \leq AGFI \leq 0.90$	0,68	Marginal Fit

Source: Data, processed.

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## Structural Model Fit Test

According to Wijayanto (2008) a structural model fit test is an analysis of the structural model of a study that involves a fit test to evaluate the cause and effect relationship between latent variables.



Source: Data, processed.

**Figure 2. Structural Model Fit Test**

Based on the structural equation above, the following explanation is obtained:

1. Perceived ease of use has a positive relationship with attitude toward use of 0.31. This shows that perceived convenience influences consumer attitudes towards using electric motorbikes.
2. Perceived usefulness has a positive relationship with attitude toward use of 0.31. This shows that perceived usefulness can influence consumers' attitudes towards accepting electric motorbikes.
3. Attitude toward use has a positive relationship with behavioral intention of 0.67. This shows the attitude of consumer acceptance in their desire to use electric motorbikes.
4. Perceived ease of use has a positive relationship with behavioral intention of -0.0029. This shows that perceived convenience does not influence consumer attitudes towards use.
5. Perceived usefulness has a positive relationship with behavioral intention of 0.31. This shows that perceived usability can influence consumer use of electric motorbikes.

## Hypothesis testing

**Table 4. Hypothesis Testing**

Hypothesis	Influence Between Variables	Loading Factor	t-Value	Cutt Off	Description
H1	<i>Perceived Usefulness</i> □ <i>Attitude Toward Use</i>	0,31	2,29	> 1,96	Hypothesis Accepted
H2	<i>Perceived Ease of Use</i> □ <i>Attitude Toward Use</i>	0,31	3,42	> 1,96	Hypothesis Accepted
H3	<i>Attitude Toward Use</i> □ <i>Behavioral Intention</i>	0,67	2,13	> 1,96	Hypothesis Accepted
H4	<i>Perceived Usefulness</i> □ <i>Behavioral Intention</i>	0,48	2,36	> 1,96	Hypothesis Accepted
H5	<i>Perceived Ease of Use</i> □	0,20	1,55	> 1,96	Hypothesis

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	<i>Behavioral Intention</i>				Rejected
H6	<i>Perceived Usefulness</i> <input type="checkbox"/>	0,20	2,02	> 1,96	Hypothesis Accepted
	<i>Attitude Toward Use</i> <input type="checkbox"/>				
	<i>Behavioral Intention</i>				
H7	<i>Perceived Ease of Use</i> <input type="checkbox"/>	0,21	2,10	> 1,96	Hypothesis Accepted
	<i>Attitude Toward Us</i> <input type="checkbox"/>				
	<i>Behavioral Intention</i>				

Source: Data, processed.

Table 4 shows the results of the hypothesis test, namely:

1. Perceived usefulness has a positive and significant effect on attitude toward use which can be seen if the loading factor value is 0.31 and the t-value is  $2.29 > 1.96$ .
2. Perceived ease of use has a positive and significant effect on attitude toward use which can be seen if the loading factor value is 0.31 and the t-value is  $3.42 > 1.96$ .
3. Attitude toward use has a positive and significant effect on behavioral intention which can be seen if the loading factor value is 0.67 and the t-value is  $2.13 > 1.96$ .
4. Perceived usefulness has a positive and significant effect on behavioral intention which can be seen if the loading factor value is 0.48 and the t-value is  $2.36 > 1.96$ .
5. Perceived ease of use has no effect on behavioral intention which can be seen if the loading factor value is 0.20 and the t-value is  $1.55 < 1.96$ .
6. Perceived usefulness has a positive and significant effect on behavioral intention through attitude toward use which can be seen if the loading factor value is 0.20 and the t-value is  $2.02 > 1.96$ .
7. Perceived ease of use has a positive and significant effect on behavioral intention through attitude toward use which can be seen if the loading factor value is 0.21 and the t-value is  $2.10 > 1.96$ .

## DISCUSSION

### The Influence of Perceived Usefulness on Attitude Toward Use

It can be seen from the descriptive average value of the perceived usefulness variable, showing that respondents agree with the measurement using these four indicators. Likewise, the descriptive average value of the attitude toward use variable shows that respondents agree with the measurement using these four indicators. From the results of the suitability of the structural model, it can be stated that the influence of perceived usefulness on attitude toward use, whereas if we look at the hypothesis test, it shows that there is a positive and significant relationship between perceived usefulness and attitude toward use. Therefore, consumers who believe that electric motorbikes will improve their performance will show an accepting attitude by using these motorbikes.

Based on the results of the hypothesis test, it is proven that perceived usefulness has a positive and significant influence on attitude toward use which can be seen if the loading factor value is 0.31 and the t-value is  $2.29 > 1.96$ .

The findings of this research explain that the influence of perceived usefulness on attitude toward use, which is the first hypothesis in this research, is declared accepted. This finding supports previous research conducted by Zhang and Chang (2013:15) which stated that there was a positive influence from the relationship between perceived ease of use and attitude toward use.

### The Influence of Perceived Ease of Use on Attitude Toward Use

It can be seen from the descriptive average value of the perceived ease of use variable, showing that respondents agree with the measurement using these four indicators. Likewise, the descriptive average value of the attitude toward use variable shows that respondents agree with the measurement using these four indicators. From the results of the suitability of the structural model, it can be stated that the influence of perceived ease of use on attitude toward use, whereas if we look at the hypothesis test, it shows that there is a positive and significant relationship between perceived ease of use and attitude toward use. Therefore, consumers who have confidence in technology will use it to increase their productivity.

Based on the results of the hypothesis test, it is proven that perceived ease of use has a positive and significant influence on attitude toward use which can be seen if the loading factor value is 0.31 and the t-value is  $3.42 > 1.96$ .

The findings of this research explain that the influence of perceived ease of use on attitude toward use, which is the second hypothesis in this research, is declared accepted. These findings support previous research conducted by Zhang

### The Influence of Attitude Toward Use on Behavioral Intention

It can be seen from the descriptive average value of the attitude toward use variable, showing that respondents agree with the

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measurement using these four indicators. Likewise, the descriptive average value of the behavioral intention variable shows that respondents agree with the measurement using these four indicators. From the results of the suitability of the structural model, it can be stated that the influence of attitude toward use on behavioral intention, whereas if we look at the hypothesis test, it shows that there is an insignificant relationship between attitude toward use and behavioral intention. Therefore, consumers show an attitude of disinterest in using it in daily activities. Based on the results of hypothesis testing, it is proven that attitude toward use has a positive and significant influence on behavioral intention which can be seen if the loading factor value is 0.67 and the t-value is  $2.13 > 1.96$ .

The findings of this research explain that the influence of attitude toward use on behavioral intention, which is the third hypothesis in this research, is rejected. These findings support previous research conducted by Zhang significant relationship between attitude toward use and behavioral intention.

### **The Influence of Perceived Usefulness on Behavioral Intention**

It can be seen from the descriptive average value of the perceived usefulness variable, showing that respondents agree with the measurement using these four indicators. Likewise, the descriptive average value of the behavioral intention variable shows that respondents agree with the measurement using these four indicators. From the results of the suitability of the structural model, it can be stated that the influence of perceived usefulness on behavioral intention, whereas if we look at the hypothesis test, it shows that there is a positive and significant relationship between perceived usefulness and behavioral intention. Therefore, if people have the perception that this technology will bring benefits in daily activities, their intention to use it will increase, like the advantages of electric motorbikes.

Based on the results of hypothesis testing, it is proven that perceived usefulness has a positive and significant influence on behavioral intention which can be seen if the loading factor value is 0.48 and the t-value is  $2.36 > 1.96$ .

The findings of this research explain that the influence of perceived usefulness on behavioral intention, which is the fourth hypothesis in this research, is accepted. These findings support previous research conducted by Zhang and Chang (2013: 15) which stated that there was a positive influence from the relationship between perceived usefulness and behavioral intention

### **The Influence of Perceived Ease of Use on Behavioral Intention**

The results of the hypothesis test prove that perceived ease of use does not have a positive and significant influence on behavioral intention which can be seen if the loading factor value is 0.20 and the t-value is  $1.55 < 1.96$ .

The findings of this research explain that the influence of perceived ease of use on behavioral intention, which is the fifth hypothesis in this research, is rejected. This finding does not support previous research conducted by Zhang and Chang (2013: 15) which stated that there was a positive influence from the relationship between perceived ease of use and behavioral intention.

### **The Influence of Perceived Usefulness on Behavioral Intention through Attitude Toward Use**

It can be seen from the hypothesis test that perceived usefulness on behavioral intention through attitude toward has a positive and significant influence. The ease of use of a technology will influence the level of consumer interest in electric motorbikes, where if the electric motorbike is accepted by the public, attitudes towards use will emerge. This is where consumers believe that electric motorbikes can help improve their performance. If it is easy to use then interest will be high.

Based on the results of hypothesis testing, it proves that perceived usefulness has a positive and significant influence on behavioral intention through an attitude toward use which can be seen if the loading factor value is 0.20 and the t-value is  $2.02 > 1.96$ . The findings of this research explain that the influence of perceived usefulness on behavioral intention through attitude toward use, which is the sixth hypothesis in this research, is declared accepted. These findings support previous research conducted by Zhang and Chang (2013: 15) which stated that there was a positive influence from the relationship between perceived usefulness and behavioral intention through attitude toward use.

### **The Influence of Perceived Ease of Use on Behavioral Intention through Attitude Toward Use**

It can be seen from the hypothesis test that perceived ease of use on behavioral intention through attitude toward use has a positive and significant influence. The convenience provided by electric motorbikes will have an impact on consumer interest, where if they are accepted, consumers will show an attitude of wanting to use them. So consumers who show an attitude of acceptance are more likely to make the decision to buy an electric motorbike.

Based on the results of the hypothesis test, it is proven that perceived ease of use has a positive and significant influence on behavioral intention through an attitude toward use which can be seen if the loading factor value is 0.21 and the t-value is  $2.10 > 1.96$ .

The findings of this research explain that the influence of perceived usefulness on behavioral intention through attitude toward use, which is the seventh hypothesis in this research, is declared accepted. This finding supports previous research conducted by Zhang and Chang (2013:15) which stated that there was a positive influence from the relationship between perceived usefulness and behavioral intention through attitude toward use.

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### CONCLUSION AND SUGGESTION

Based on the results of data processing, the research results can be concluded as follows:

1. Hypothesis 1 of this study, which states that perceived usefulness influences attitude toward use of electric motorbikes in Surabaya, is accepted.
2. Hypothesis 2 of this research, which states that perceived ease of use influences attitude toward use on electric motorbikes in Surabaya, is accepted.
3. Hypothesis 3 of this study, which states that attitude toward use influences behavioral intention on electric motorbikes in Surabaya, is accepted.
4. Hypothesis 4 of this research, which states that perceived usefulness influences behavioral intention on electric motorbikes in Surabaya, is accepted.
5. Hypothesis 5 of this research, which states that perceived ease of use influences behavioral intention on electric motorbikes in Surabaya, is rejected.
6. Hypothesis 6 of this research, which states that Perceived usefulness influences behavioral intention through attitude toward use on electric motorbikes in Surabaya, is accepted.
7. Hypothesis 7 of this research, which states that perceived ease of use influences behavioral intention through attitude toward use on electric motorbikes in Surabaya, is accepted.

There are several suggestions that can be given from this research, namely:

#### 1. Theoretical Suggestions

For researchers who will conduct similar research with the same variables, it is recommended to further examine variables related to usage decisions such as product quality and price. Apart from that, it also examines broader research areas.

#### 2. Practical Advice

##### a. Suggestions for managing Perceived Usefulness

The lowest average value for the perceived usefulness variable is found in the indicator "In my opinion, electric motorbikes provide comfort in riding". So this suggestion is aimed at entrepreneurs in the field of electric motorbikes to add comfort to driving, such as providing good quality seats and trying not to put high expectations on the public for a technology that is still relatively new.

##### b. Suggestions for managing Perceived Ease of Use

The lowest average value for the perceived ease of use variable is found in the indicator "In my opinion, it will be easier for me to use an electric motorbike". So this suggestion is aimed at entrepreneurs in the motorbike sector to provide ease of use, such as expanding the charging area for electric motorbikes and the public will get good facilities.

##### c. Suggestions for managing Attitude Toward Use

The lowest average value for the perceived ease of use variable is found in the indicator "In my opinion, riding an electric motorbike is a wise decision". So this suggestion is aimed at entrepreneurs in the electric motorbike sector to always innovate their products, such as giving the impression of new colors and to the public that we must care more about the environment, starting from small things, such as starting to use electric motorbikes.

##### d. Suggestions for managing Behavioral Intention

The lowest average value for the perceived ease of use variable is found in the indicator "Based on my knowledge, I would recommend an electric motorbike to my friends". So this suggestion is for sales promotion to provide sufficient knowledge so that people will understand about electric motorbike knowledge without any miscommunication.

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