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Analysis of the Influence of Perceived Usefulness, Perceived Ease of Use, Attitude, Subjective Norm, Perceived Behavioral Control and Price Sensitivity Purchase Intention of Consumers on Two-Wheeled Electric Vehicles

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Abstract

The adoption of two-wheeled electric vehicles (EVs) in Indonesia remains low despite global growth in electric vehicle technology, primarily driven by advancements in electric motors and battery systems. This limited adoption poses challenges for sustainable transportation and environmental goals, making it crucial to identify the factors influencing Indonesian consumers' purchase intentions. This study aims to analyze the effects of Perceived Usefulness, Perceived Ease of Use, Attitude, Subjective Norm, Perceived Behavioral Control, and Price Sensitivity on consumers' Purchase Intention toward two-wheeled EVs. The research applies an integrated framework combining the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB). Data were collected through online questionnaires using non-probability sampling, resulting in a sample of Indonesian consumers. Structural Equation Modeling (SEM) using SmartPLS 4.1.1.2 was employed to test the proposed hypotheses. The results indicate that Perceived Ease of Use and Perceived Usefulness significantly and positively influence Attitude, while Attitude and Subjective Norm significantly drive Purchase Intention. Conversely, Perceived Behavioral Control and Price Sensitivity showed no significant effect, and Perceived Usefulness had a limited direct effect on Purchase Intention. These findings suggest that consumer education and awareness programs emphasizing the ease of use and functional benefits of two-wheeled EVs are essential to enhance adoption. Policymakers and manufacturers can leverage these insights to design targeted marketing strategies and incentive programs that address key behavioral determinants, ultimately accelerating the transition toward sustainable mobility in Indonesia.

Keywords: two-wheeled electric vehicles, Technology Acceptance Model, Theory of Planned Behavior, perceived ease of use, perceived usefulness, attitude, subjective norm, perceived behavioral control, price sensitivity.

INTRODUCTION

The global automotive industry is pivoting from internal combustion engines toward lower-emission powertrains, with hybrids acting as a bridge and battery-electric vehicles (EVs) rapidly scaling across major markets. Recent data show electric-car sales exceeded 17 million in 2024 (over 20% market share), underscoring a structural shift in demand, while 2025 sales are projected to approach 22 million as costs fall and model availability expands (IEA, 2025; BloombergNEF, 2025). Momentum is reinforced by automaker strategies and zero-emission vehicle policies that are accelerating product roadmaps toward full electrification (ICCT, 2025). Technical reviews further document the maturation of EV and hybrid ecosystems—spanning batteries, charging, and grid integration—which underpins this transition and highlights hybrids' role in near-term emission reductions (Delso-Vicente et al., 2025; Alanazi et al., 2024). The data on the development of EVs in Indonesia is increasing as shown by the following data:

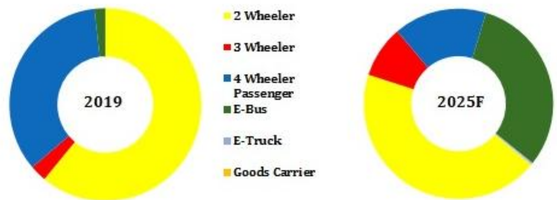

Figure 1. Indonesia Electric Vehicle Market Revenue by Tyoe, 2019-2025F
(Source: 6wsearch)

Support from the government in building an electric vehicle ecosystem in Indonesia is urgently needed to accelerate the development of *EV* to achieve the target electric vehicle population by 2030. The Ministry of Energy and Mineral Resources (EMR) of the Republic of Indonesia during a press release (no. 286.Pers/-4/SJI/2024 dated May 22, 2024) set a target for the number of electric cars to be 2 million units and two-wheeled electric motorcycles to 13 million units in Indonesia by 2030. This was conveyed by the Secretary General of the Ministry of Energy and Mineral Resources (EMR) Dadan Kusdiana in a panel discussion *High Level Closed Door Ministerial Discussion* which is part of the activity *IEA's 9th Global Conferensce On Energy Efficiency* (GCEE) di Nairobi, Kenya.

Development trends *Electric Vehicles (EV)* in Indonesia, creating new opportunities for industrial companies manufacturing vehicle components that previously existed in making components *internal combution engine (ICE)*. These companies are manufacturing companies *Tier 1* which supplies various types of components to the principal holders of motor vehicle brands, such as: Toyota, Daihatsu, Honda, Hyundai, Suzuki, Mitsubishi, and Yamaha who have been selling their vehicle products in the Indonesian market for a long time. Currently the principal company has started producing *EV* by creating *Design* and new technologies that the market prefers. The motorcycle market, especially electric motorcycles, is experiencing relatively rapid development. This is possible because electric motorcycles are more environmentally friendly, local innovation, and the spirit of nationalism so that electric motorcycles are increasingly in demand by the public as another alternative in finding more efficient and sustainable transportation solutions (Isha, et al. 2024).

Figure 1. Indonesia Electic Vehicle Market Revenue and Volume 2019-2025f ($million, unit)

The availability of *EVs* is expanding nationwide, making consumers more interested in switching from fossil fuel vehicles to hybrid or electric vehicles, so that consumers are more confident without any hesitation to switch to more environmentally friendly vehicles. Consumer interest in *EVs*, especially *2wheels*, is expected to increase, where there are factors that influence consumers and potential consumers in making choices regarding more environmentally friendly personal transportation. However, in Indonesia, *EV* adoption is slower than in other global markets.

Climate change and global warming are accelerating and a solution to be found immediately. The government must be more creative to attract public interest to immediately switch from *fossil-fueled internal combustion engine* (ICE) vehicles to other alternative energies such as electric and hybrid vehicles that are more environmentally friendly.

The conditions in Indonesia are unique as a developing country, where there will be differences with other countries, especially in the socio-cultural fields, geographical conditions, and living standards of the people. Thus, research is needed in Indonesia related to factors that affect the interest of the Indonesian people to want to use two-wheeled electric vehicles so that their adoption in Indonesia is faster in accordance with the government's targets and plans (Permana, Yuliati and Wulandari 2023).

Empirical studies on the adoption of electric vehicles/ *electric vehicle* (EV) are relatively widely carried out, but the EV adoption rate in Indonesia still faces many obstacles and is still below expectations. Lack of infrastructure, high start-up costs, and low performance hinder adoption *electric vehicle* (EV). EVs that have competitive prices compared to *internal combustion engines* (ICE) are more likely to be adopted. According to to increase the adoption of electric vehicles, it can be by holding a conversion program, namely modifying motorized vehicles (Padhilah, Surya and Aji 2023)*internal engine combution* (ICE). Some of the records regarding low consumer trust in conversion programs are related to short warranty periods and lack of knowledge or experience in modifying electric vehicles

There are factors that can affect buying interest and decisions in choosing an electric vehicle. Some theories and research use the *Technology Acceptance Model* (TAM) as one of the approaches used to determine the interest in buying electric vehicles, although most scientific studies use such an approach, but this model does not involve social and control factors . This theory is put forward by which it models how users receive and use new technologies. According to Charness (2016) there are two main factors that affect the intention of individuals to use new technology, namely: (Permana, Yuliati and Wulandari 2023)(D. F. Davis 1985)*Perceived Ease of Use (PeoU)* and *Perceived Usefulness (PU).*

Theory of Planned Behavior (TPB) is a psychological theory that connects beliefs to behavior with three determining factors, namely: (Ajzen , From Intentions to Action : A theory of Planned Behaviour 1985)*Attitude, Subjective Norm, Perceived Behavioral Control* (Ajzen and Martin, Understanding Attitudes and Predicting Sosial Behaviour 1991)

This study uses a combination of *Theory of Planned Behavior* (TPB) and *Technology Acceptance Model (TAM)* as the main theoretical framework. According to the C-TAM-TPB model, it can provide an overview of consumer behavior intentions towards the use of new technologies by combining TAM and TPB. Scientific research on (Taylor and Tood 1995)*purchase intention* Relatively little has been done on two-wheeled electric vehicles, so this study is important to be carried out to provide a more comprehensive picture to find out the factors *purchase intention* consumers to two-wheeled electric vehicles.

Based on the existing background, the problems formulated in this study include the influence of several factors on consumer purchase intention for two-wheeled electric vehicles. Some of the questions raised include, do Perceived Usefulness and Perceived Ease of Use affect Attitude, and do they have a direct impact on consumer Purchase Intent? In addition, this study will also analyze the influence of Attitude, Subjective Norm, Perceived Behavioral Control, and Price Sensitivity on the Purchase Intention of two-wheeled electric vehicle consumers.

The purpose of this study is to analyze the influence of factors such as Perceived Usefulness, Perceived Ease of Use, Attitude, Subjective Norm, Perceived Behavioral Control, and Price Sensitivity on the Purchase Intention of electric two-wheeled vehicle consumers. Theoretically, this research is expected to enrich the literature on consumer behavior and add insight in the field of consumer behavior as well as deepen existing studies by combining the Technology Acceptance Model and the Theory of Planned Behavior model. Practically, this study can provide an overview of consumer behavior conditions in buying two-wheeled electric vehicles and provide marketing strategy recommendations for manufacturers and suppliers of two-wheeled electric vehicle components.

METHOD

The research uses a non-probability sampling procedure, where the non-probability sampling method uses an unknown number of elements and cannot be individually identified in the populasi (Smith 2012). The minimum number of samples taken is five times or more of the number of indicators Analyzed (Hair, et al. 2019). In accordance with these criteria, the number of samples taken in this study was 133 respondents.

The object and methodology of the research are described using charts so that the systematics and structure of the research can be clearer. The explanation of each stage in the chart is explained in more detail in each chapter of this study.

RESULTS OF RESEARCH AND DISCUSSION

Respondent Description

Respondent Profile

This study sampled 133 samples of respondents using wheeled vehicles (Prof. Dr. Suliyanto 2018) (Narimawati, et al. 2020) *double internal engine combustion* (ICE) or two-wheeled vehicles with fossil-based engines. Respondents domiciled in West Java are spread across several regions, such as: Jakarta 21 people (15.8%), Bogor 7 people (5.3%), Depok 5 people (3.8%), Tangerang 18 people (13.5%), Bekasi 18 people (13.5%), Bandung 19 people (14.3%), Semarang 8 people (6%), Surabaya 15 people (11.3%), and 22 people (16.5%) domiciled in other cities.

The distribution of respondents by gender, namely: 55 men (41.4%) and 78 women (58.8%), if the respondents were grouped by age, the respondents had an age range of 48 people (36.1%) aged between 17-28 years, 61 people (45.9%) aged between 29-44 years, 25 people (18.8%) aged between 45-60 years and 1 person (0.8%) aged over 61 years.

The average monthly expenditure is greater than IDR 6,000,000 for 24 people, monthly expenses between IDR 5,000,000 – IDR 6,000,000 are 23 people, monthly expenses between IDR 4,000,000 – IDR 5,000,000 are 42 people, monthly expenses are between IDR 3,000,000 – IDR 4,000,000 for 27 people, and expenses less than IDR 3,000,000 per month are 17 people.

The profiles of respondents by profession were as follows: self-employed/entrepreneur 30 people (22.6%), private employees 52 people (39.1%), civil servants 20 people (15%), housewives 12 people (9%), and students/students 20 people (15%).

How to Sample

Respondent data is taken by *Online* Through social media channels *instgram*, *facebook*, by filling *Link* (*google form*) and disseminated through *whatsapps* so that it can reach respondents. The sample was taken using a likert scale questionnaire (1 – 5) to measure respondents' attitudes, opinions and perceptions towards *purchase intention* two-wheeled electric vehicles, in several major cities in Indonesia. The questionnaire consisted of 27 questions on a scale of 1 – 5 where: 1 Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree

Instrument Test

Inference Analysis is a statistical technique used to draw conclusions or make predictions about a population based on data taken from samples. The purpose of such statistical techniques is to find out and determine whether the results of the sample can be applied to the entire larger population. Data processing and analysis is carried out using smartPLS 4.1.1.2 software *version*, according to the structural equation model ((Ghozali and Kusumadewi 2023)*structural equation modeling - SEM*) is a combined analysis technique between the perspective of econometrics that focuses on prediction and psychometrics that is able to describe the concept of a model of latent variables (variables that cannot be measured directly) but can be measured through their indicators (*manifest variable*), where SEM essentially offers the ability to perform a crawl analysis (*path analytic*). Partial Least Square (PLS) is a technique used to analyze relationships between complex variables.

Figure 3. Model *Latent Variable* is a model of latent variables that will be analyzed in this study.

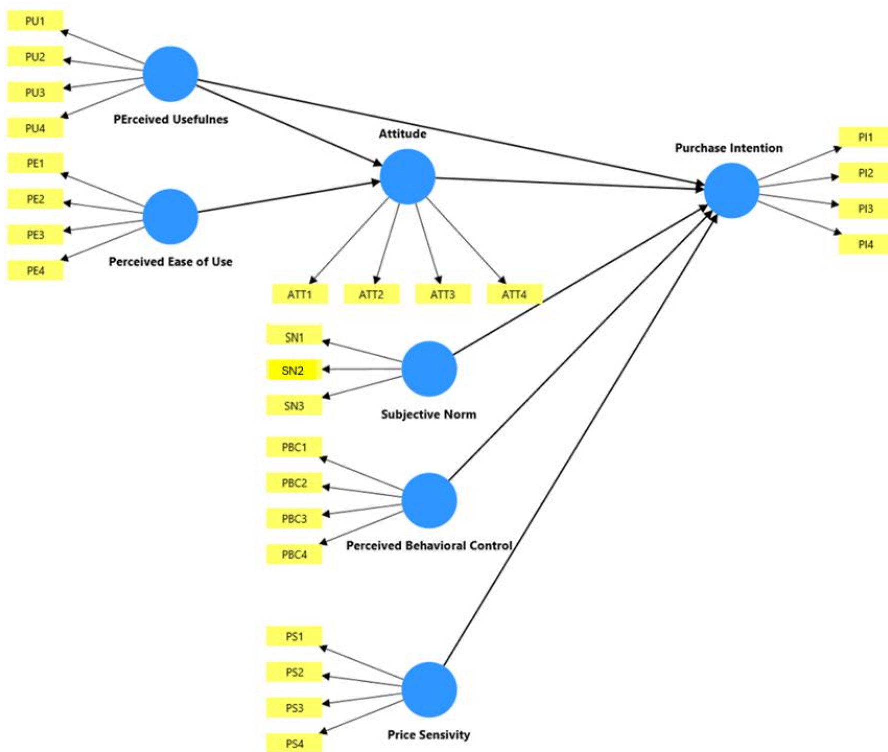

Figure 3. *Model Latent Variable* Research
Source : smartPLS 4.1.1.2 calculation data processed (2025)

Data processing in this study has two stages of testing the research model, namely: *outer model* and *inner model*. *Outer model* test *convergent validity*, *discriminant validity* and *construct reability*where *outer model* focus on the validity and reliability of the indicators used to take measurements *latent variable*. While *inner model* Testing *R Square (R2), significant* (Pengujian hypothesis*), dan Effect Size* (f2), where *inner model* focuses on the relationships between latent variables and testing the strength and significance of those relationships.

Outer Model

Outer model focuses on the validity and reliability of indicators, where the relationship between latent veriables and indicators, with the aim of ensuring that the instruments used to measure latent variables have good reliability validity. The three main types of testing in *outer model*that is: *convergent validity, discriminant validity* and *construct reliabiity*. The following are the results of the test:

Convergent Validity

In convergent validity, there are two value criteria that will be evaluated, namely: *loading factor* and *average variance extracted (AVE).*

Loading Factor

The output of the outer loading estimation is measured from the correlation between the indicator score (instrument) and the construct (variable). Correlation values above 0.70 or 0.60 indicators are considered valid and sufficient. If there is an indicator that does not meet these requirements, then the indicator must be discarded.

The results in the table show that the correlation value of the indicators is above 0.70 so that all of them are considered valid and sufficient. This indication shows that the indicators used successfully measure the correlation between the indicator and its construct, thus supporting the validity of the measurement model construct. *Outer loading* test *convergent validity* stage 1 is shown in Table 1 below.

Table 1 Outer Loading Test Convergent Validity

Instruments	Attitude	Perceived Usefulness	Perceived Behavioral Control	Perceived Ease of Use	Price Sensitivity	Purchase Intention	Subjective Norm	Information
ATT1	0,886							Valid
ATT2	0,853							Valid
ATT3	0,755							Valid
ATT4	0,757							Valid
PBC1			0,74					Valid
PBC2			0,73					Valid
PBC3			0,841					Valid
PBC4			0,708					Valid
PE1				0,853				Valid
PE2				0,837				Valid
PE3				0,791				Valid
PE4				0,836				Valid
PI1						0,813		Valid
PI2						0,84		Valid
PI3						0,839		Valid
PI4						0,844		Valid
PS1					0,867			Valid
PS2					0,854			Valid
PS3					0,762			Valid
PS4					0,853			Valid
PU1		0,847						Valid
PU2		0,802						Valid
PU3		0,836						Valid

PU4	0,771		Valid
SN1		0,843	Valid
SN2		0,828	Valid
SN3		0,855	Valid

Source: SmartPLS 4.1.1.2 calculation data processed (2025)

Average Variance Extracted (AVE)

Convergent validity can also be done by calculating the value *average variance extracted* (AVE), in Table 2 shows the results of calculating the AVE value for the test variables *convergent validity*.

Table 2. Result *Average Variance Extracted* (AVE)

Variable	Average variance extracted (AVE)	Information
Attitude	0.664	Valid
Perceived Usefulness	0.664	Valid
Perceived Behavioral Control	0.573	Valid
Perceived Ease of Use	0.688	Valid
Price Sensitivity	0.698	Valid
Purchase Intention	0.696	Valid
Subjective Norm	0.71	Valid

Source : SmartPLS 4.1.1.2 calculation data processed (2025)

Table 2 shows the AVE values of the variables *attitude* by 0.664, *perceived usefulness* 0,664, *perceived behavioral control* by 0.573, *perceived ease of use* 0,688, *price sensivity* 0,698, *purchase intention* 0.696, and *subjective norm* 0.71. These variables have a value greater than or equal to 0.50 which indicates that the variables are valid.

Discriminant Validity

Testing *discriminant validity* It is used to ensure that the structure or variable in the measurement model measures different things and does not overlap with other variables, so that it can be known to what extent the different constructs in the measurement model are differentiated between one variable and another. The measurement of discriminant validity can use one of three value criteria to be evaluated, namely: *cross loading*, *Fornell Larcker* and *latent variable correlation*. This study conducted a test *discriminant validity* by using the criteria *cross loading* shown in Table 3. Result *Cross Loading* Test *Discriminant Validity.*

Table 3. Result *Cross Loading* Test *Discriminant Validity*

Instruments	Attitude	Perceived Usefulness	Perceived Behavioral Control	Perceived Ease of Use	Price Sensitivity	Purchase Intention	Subjective Norm	Information
ATT1	**0.886**	0.733	0.613	0.726	0.743	0.748	0.629	Valid
ATT2	**0.853**	0.567	0.492	0.717	0.633	0.705	0.617	Valid
ATT3	**0.755**	0.569	0.426	0.558	0.618	0.517	0.503	Valid
ATT4	**0.757**	0.488	0.469	0.683	0.523	0.747	0.621	Valid
PU1	0.662	**0.847**	0.518	0.669	0.689	0.632	0.591	Valid
PU2	0.586	**0.802**	0.636	0.521	0.570	0.553	0.526	Valid
PU3	0.558	**0.836**	0.522	0.541	0.522	0.480	0.485	Valid
PU4	0.545	**0.771**	0.573	0.545	0.521	0.419	0.485	Valid
PBC1	0.463	0.622	**0.740**	0.478	0.385	0.387	0.422	Valid
PBC2	0.364	0.369	**0.730**	0.448	0.304	0.427	0.462	Valid
PBC3	0.596	0.582	**0.841**	0.501	0.592	0.507	0.523	Valid
PBC4	0.434	0.513	**0.708**	0.386	0.497	0.400	0.509	Valid
PE1	0.713	0.602	0.490	**0.853**	0.667	0.714	0.693	Valid

Instruments	Attitude	Perceived Usefulness	Perceived Behavioral Control	Perceived Ease of Use	Price Sensitivity	Purchase Intention	Subjective Norm	Information
PE2	0.697	0.669	0.554	**0.837**	0.658	0.617	0.592	Valid
PE3	0.621	0.509	0.506	**0.791**	0.482	0.659	0.537	Valid
PE4	0.717	0.549	0.445	**0.836**	0.643	0.639	0.628	Valid
PS1	0.702	0.619	0.517	0.685	**0.867**	0.661	0.621	Valid
PS2	0.611	0.588	0.464	0.577	**0.854**	0.550	0.593	Valid
PS3	0.559	0.551	0.542	0.515	**0.762**	0.450	0.533	Valid
PS4	0.695	0.624	0.478	0.680	**0.853**	0.596	0.63	Valid
PI1	0.695	0.680	0.543	0.684	0.616	**0.813**	0.659	Valid
PI2	0.709	0.527	0.452	0.670	0.589	**0.840**	0.66	Valid
PI3	0.713	0.461	0.446	0.658	0.624	**0.839**	0.657	Valid
PI4	0.698	0.498	0.472	0.628	0.452	**0.844**	0.570	Valid
SN1	0.567	0.514	0.558	0.558	0.617	0.544	**0.843**	Valid
SN2	0.586	0.501	0.517	0.631	0.504	0.677	**0.828**	Valid
SN3	0.686	0.607	0.531	0.669	0.684	0.689	**0.855**	Valid

Source : smartPLS 4.1.1.2 calculation data processed (2025)

Indicators can be declared valid if the relationship of the indicator to the construct (variable) value *cross loading* higher when compared to the relationship with other constructs/variables. Data processing results *cross loading* shown in Table 4.3 values *cross loading* For variables, the correlation between the instrument/statement and the construct (variable) is greater than the indicator (instrument) in the other construct, so all indicators are valid. This indicates that the model is able to effectively distinguish between different constructs.

Construct Reliability

The reliability test can be analyzed in two ways, namely by using the *Cronbach's Alpha* or *composite reliability*. Both are used to test the reliability value of indicators on a variable. This study uses a reliability test by calculating the value of *Cronbach's alpha* and *composite reliability*. The results of the reliability test are shown in Table 4 and Table 5.

Cronbach's Alpha

Important indicators in the variable reality test in SEM – PLS are *Cronbach's alpha*, if the value is high at *Cronbach's alpha* can indicate that constructs/variables are measured well and consistently to measure validity in PLS analysis. If the value of *Cronbach's alpha* is low, can indicate that the indicators used are not reliable enough so they need to be improved.

Table 4. Cronbach's Alpha

Variable	Cronbach's alpha	Information
Attitude	0.830	Reliable
Perceived Usefulness	0.832	Reliable
Perceived Behavioral Control	0.750	Reliable
Perceived Ease of Use	0.849	Reliable
Price Sensitivity	0.856	Reliable
Purchase Intention	0.855	Reliable
Subjective Norm	0.797	Reliable

Source : smartPLS 4.1.1.2 calculation data processed (2025)

Table 4 shows the value *cronbach's alpha* To *attitude* 0,830, *perceived usefulness* 0,832, *perceived behavioral control* 0,750, *perceived ease of use* 0,849, *price sensivity* 0,856, *purchase intention* 0.855, and *subjective norm* 0.797. All variables have values greater than or equal to 0.70 so that the reliability variables are good.

Composite Reliability

Test *composite reliability* can be used to ensure the internal consistency of the indicators that form latent variables. *Composite realibility* It is used as a reliability measurement tool, if the composite reliability number ≥ 0.7 meets the requirements of the research standard.

Table 5. Composite Reliability

Variable	Composite reliability	Information
Attitude	0.887	Reliable
Perceived Usefulness	0.887	Reliable
Perceived Behavioral Control	0.842	Reliable
Perceived Ease of Use	0.898	Reliable
Price Sensitivity	0.902	Reliable
Purchase Intention	0.902	Reliable
Subjective Norm	0.880	Reliable

Source : smartPLS 4.1.1.2 calculation data processed (2025)

Table 5 shows the value *composite reliability* for the variable *attitude* 0,887, *perceived usefulness* 0,887, *perceived behavioral control* 0,842, *perceived ease of use* 0,898, *price sensivity* 0,902, *purchase intention* 0.902 and *subjective norm* 0.880. The value of these variables has a value of 0.70 so that the reliability is good.

Model Fit Validation

Table 6 shows the results of the fit model test by comparing the results of the *ouput* smart PLS with the criteria according to the table below.

Table 6. Model Fit Validation

Parameter	Rule	Estimated model	Information
SRMR	Less than 0.10	0.082	Fit
d_ULS	> 0,05	2.562	Fit
d_G	>0,05	1.297	Fit
Chi-square	X2 statistics ≥ X2 table	896.905 ≥ 38,885	Fit
NFI	Close to value 1	0.684	Fit

Source : smartPLS 4.1.1.2 calculation data processed (2025)

In this study, a fit model was tested with results showing that this model can be used to analyze the relationship between latent variables and models reflecting accurate data with relevant predictives.

1. The SRMR (*standardized root mean square residual*) value is 0.082. The result was smaller than the maximum limit of 0.10, indicating that the model had a good match between the observational data and the model's hypothesis. This means that the difference between observation covariance and model covariance is small so that the model can be considered fit.
2. The value of d-ULS (*unweighted least squares discrepancy*) is 2.562 where the value is greater than 0.05 so from this value it can be concluded that the model structure is acceptable and the model does not have significant deviations, so it can be said that the model has an ideal relationship that is derived from the data.
3. *The chi-square* has a value of 896.905 greater than the *chi square* value of the table 38.885 so that the model can be declared fit, so it can be concluded that the structure of the model can explain the relationship between variables well and the model significantly corresponds to the sample data.
4. NFI (*Normed Fit Index*) with a value of 0.684 is close to the ideal value of 1, which shows that the model has a good enough fit, so that the model can still show good enough acceptance to describe the data.

Inner Model

In the *Structural Equation Modeling (SEM)***,** *inner model* is part of the model that explains Relationships Between Latent Variables (*constructs*), which is a variable that cannot be measured directly but is represented by an indicator (measurable variable). *Inner model* often referred to as Model Structural. *Inner model* In PLS SEM describes the strengths between latent variables that are evaluated to see how strong the relationship and significance of the relationship between latent variables are.

R Square (R2)

R Square (R2) or cooficient of determination indicates how much the endogenous variable is explained by the exogenous variable. R square in PLS SEM measures how well latent independent variables in the model can explain the variability of latent dependent variables. R Value *square* It can show the predictive power of the model as a whole, the values range from 0 to 1 where 0.25 = weak, 0.50 = moderate, and 0.75 = high. The higher the value of the R square indicates the model, the better at explaining the variation. In the calculation R square is shown in Table 7 below.

Table 7. ***Test R Square (R2)***

Variable Dependency	R-square	R-square adjusted
Attitude	0.729	0.724
Purchase Intention	0.759	0.749

Source : smartPLS 4.1.1.2 calculation data processed (2025)

Based on the calculation results, the R square value in this study for *attitude* is 0.729 so *attitude* shows that 72.9% of the variation in this variable can be explained by independent variables in the model, while the remaining 27.1% is influenced by other factors outside the model. The model can explain the change *in attitude* by 72.9% based on other independent variables, while 27.1% is influenced by other factors outside the model. Table 7 also shows the R square value in this study for *purhace intention* of 0.759 so *purchase intention* shows that 75.9% of the variation in this variable can be explained by independent variables in the model, while the remaining 24.1% is influenced by other factors outside the model. This value shows a fairly strong relationship, meaning that the model is able to explain most of the factors that influence changes in *purchase intention*. Figure 4 below shows *output* PLS SEM Algorithm calculation to see R^2 research model.

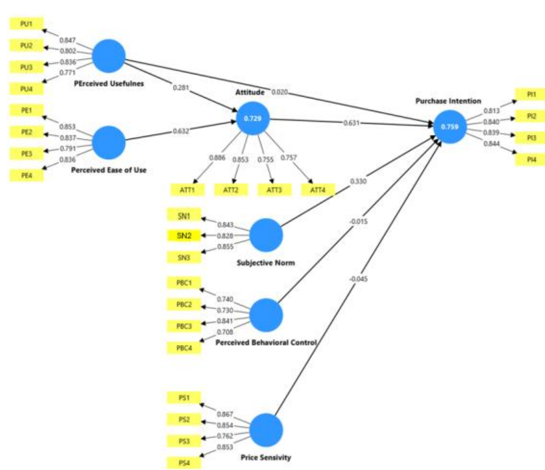

Figure 4. ***Output Model PLS SEM Algorithm***
Source: smartPLS 4.1.1.2 calculation data processed (2025)

***Significant* (Hypothesis testing)**

Hypothesis testing or significance test on PLS SEM is carried out to determine the level of significance of the relationship between latent variables in the model. By using the technique *bootstrapping* can be obtained *t-statistic* and *p-value*. If t-statistic ≥ 1,96 (a = 5%)**,** If the value p-value ≤ 0,05 means significant**,** You can also see the signs Positive/Negative at *path coefficient* for the direction of the relationship. Table 4.8 shows the results *bootstrapping direct effect*.

Bootstrapping Direct Effect

The results *of the bootsrapping direct effect* are shown in Table 8 as follows:

Table 8 Path Coefficient Bootstrapping Direct effect

Path Coefficients	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics	P values	Information
Attitude -> Purchase Intention	0.631	0.611	0.099	6.402	0	Unconfirmed
Perceived Behavioral Control -> Purchase Intention	-0.015	0.009	0.085	0.171	0.864	Unconfirmed
Perceived Ease of Use -> Attitude	0.632	0.618	0.108	5.871	0	Unconfirmed
Perceived Usefulness -> Attitude	0.281	0.294	0.114	2.463	0.014	Unconfirmed
Perceived Usefulness -> Purchase Intention	0.02	0.04	0.087	0.232	0.817	Unconfirmed
Price Sensitivity -> Purchase Intention	-0.045	-0.047	0.106	0.422	0.673	Unconfirmed
Subjective Norm -> Purchase Intention	0.33	0.311	0.09	3.675	0	Unconfirmed

Source : smartPLS 4.1.1.2 calculation data processed (2025)

Effect *of Attitude* on *purchase intention* (β=0.631 and p<0.001)

Attitude has a very significant positive influence on *purchase intention* consumers in buying two-wheeled electric vehicles with an influence coefficient value of 0.631, T statistic of 6.402 (> 1.96) and P value 0 (< 0.05) means that it is more positive *attitude* consumers, the higher the purchase intention/ *purchase intention* user. Two-wheeled electric vehicles must be designed as comfortable as possible with a more futuristic and ergonomic shape, so that consumers are increasingly interested in buying them.

Effect of *perceived ease of use* on *attitude* (β=0.632, p<0.001)

Perceived ease of use has a very significant positive influence on *attitude* consumers in buying two-wheeled electric vehicles with an influence coefficient value of 0.632, T *statistic* 5.871 (> 1.96) and P *value* 0 (< 0.05) means that the ease of use of two-wheeled electric vehicles has a strong influence on improving attitudes/ *attitude* consumers to two-wheeled electric vehicles. The easier it is for consumers to feel the use of two-wheeled electric vehicles, the more positive the attitude (*attitude*) against the vehicle. Ease of use is a key factor that can shape positive perceptions and increase consumer acceptance of electric vehicle innovation. Two-wheeled electric vehicles must be designed with more user-friendly features to make it easier for consumers to operate them, for example by designing additional instruments on the panel *cluster meter* with *user interface* which is easier to understand, and adds accurate GPS features.

Effect of *perceived usefulness* on *attitude* (β=0.281, p=0.014)

Perceived usefulness has a very significant positive influence on *attitude* consumers in buying two-wheeled electric vehicles with an influence coefficient value of 0.281, T *statistic* 2.463 (> 1.96) and P *Value* 0.014 (< 0.05) means that the greater the benefits felt by consumers, it will increase consumers' increasingly positive attitude towards two-wheeled electric vehicles. Two-wheeled electric vehicles must be more aggressively socialized to consumers, especially benefits such as being more environmentally friendly, more efficient, two-wheeled electric vehicles can facilitate mobility, so that consumers have a more positive attitude. *Perceived usefulness* Proven to form a positive attitude, companies need to highlight the real benefits of two-wheeled electric vehicles, such as: operational cost efficiency, for example lower charging costs than fuel, ease of maintenance because engine components are simpler., dpositive effect on the environment through reducing carbon emissions.

Promotional strategies must prioritize benefit education so that consumers are more confident in the added value of two-wheeled electric vehicles. For example: Educational content on social media about cost savings and environmental friendliness, videos comparing the cost of using electric and conventional vehicles, demo programs at dealerships or exhibitions so that consumers can feel the benefits directly.

Collaboration with the government and the two-wheeled electric vehicle community to strengthen the image of benefits, for example: utilizing government incentives (subsidies, tax deductions, or purchase assistance) to strengthen the perception of financial benefits. Collaborating with the community of electric vehicle users so that consumers can see real testimonials and positive experiences from other users.

Effect of *subjective norms* on *purchase intention* (β=0.330, p<0.001)

Subjective norm has a very significant positive influence on *purchase intention* consumers in buying two-wheeled electric vehicles with an influence coefficient value of 0.33, T statistic 3.675 (> 1.96) and P value 0 (< 0.05) means that consumers in deciding to buy two-wheeled electric vehicles are quite influenced by the surrounding social environment. Consumers' purchasing decisions are influenced by the opinions and views of friends/people around them. The decision to buy a two-wheeled electric vehicle is also affected *Image* positive electric vehicles of the surrounding community. The higher the social impulse (friends, family, or the surrounding environment), the higher the consumer's intention to buy a two-wheeled electric vehicle. Social norms have a big role in influencing and driving purchasing decisions. This is in line with the theory *theory planned behavior* (TPB) where *subjective norm* is one of the main determinants of consumer behavior intentions.

The Effect of *perceived behavioral control* on *purchase intention* (p=0,864)

Perceived behavioral control show an insignificant influence on *purchase intention.* This is shown by the P-value of 0.864, which is above the significance limit of 0.05, and T *statistic* by 0.171, which is lower than the critical value of 1.96. In addition, a coefficient of –0.015 indicates the direction of a negative relationship. Thus, there is not enough evidence to state that *perceived behavioral control* affects *purchase intention* user. Because *perceived behavioral control* does not affect purchase intentions, provides education or training on how to buy or use electric vehicles may not directly improve *purchase intention*, marketing strategies should not focus too much on consumer personal control. Even though *perceived behavioral control* Unaffected, consumers may still face real barriers such as high prices, limited battery charging infrastructure, or less attractive government incentives. Companies and stakeholders can reduce these external barriers to make it easier for consumers to make a purchase decision. *Perceived behavioral control* weak, encouraging buying intent more effectively is done through increasing the perception of benefits (*perceived usefulness*) and social influence (*subjective norm*), for example through user testimonial campaigns, communities, or promotions of public figures.

Effect of *perceived usefulness* on *purcase intention* (p=0.817)

Perceived usefulness showed a not very significant result, even though the P value of 0.817 was above 0.05. The statistical T-value of 0.232 is below 1.96. The coefficient is at 0.02 which indicates a positive relationship, but the effect is very weak and not statistically significant. This means that the perception of the benefits of two-wheeled electric vehicles does not directly affect consumers' purchase intentions. New consumers are encouraged to have a purchase intention if the perception of these benefits encourages the formation of a positive attitude (*attitude*) first, so that the influence is more indirect. Because *perceived usefilness* does not directly push *purchase intention*, ATPM or two-wheeled electric vehicle distributors should emphasize a marketing strategy that builds *attitude* positive consumers. For example: emphasizing the benefits of cost efficiency and energy savings in the long run, highlighting the contribution to the environment through emission reduction, linking the use of electric vehicles with modern and innovative lifestyles.

The results show that consumers are not driven by functional benefits alone, so communication needs to be made more persuasive and emotional, for example: displaying success stories or real experiences that highlight the convenience and added value of using electric vehicles. Because of the influence *perceived usefulness* more effectively through *attitude,* Companies need to provide a hands-on experience so that consumers really feel the benefits, for example through: program *test ride* and unit demos in public areas or automotive exhibitions, interactive education at dealerships or events explaining efficiency, charging methods and lower maintenance costs.

The effect *of price sensivity* on *purchase intention* (p=0.673)

Price sensivity showed less significant results, with a T value of 0.673 above 0.05 and a statistical T value of 0.422 below the level of 1.96. The coefficient is at a value of -0.045 which means that it has a negative relationship, which means that the higher the price sensitivity, the less consumer intention to own a two-wheeled electric vehicle. Special discounts and promotions do not affect consumer intentions, consumers simply consider the price to make it more affordable, but the selling price of the vehicle does not sufficiently affect consumers' purchasing decision towards two-wheeled electric vehicles and it can be said that price is not the main factor that affects consumers' intentions in owning a wheeled electric vehicle. ATPM and dealers must be more aggressive in promoting the advantages of two-wheeled electric vehicles, so that they increasingly reach consumers from various market segments.

Bootstrapping Indirect Effect

Result *bootstrapping indirect effect* shown in table 9 below:

Table 9 Path Coefficient Bootstrapping Indirect Effect

Path Coefficients	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics	P values	Information
Perceived Usefulness -> Attitude -> Purchase Intention	0.178	0.177	0.071	2.509	0.012	Unconfirmed

Perceived Ease of Use -> Attitude -> Purchase Intention	0.399	0.38	0.098	4.089	0	Unconfirmed

Source : smartPLS 4.1.1.2 calculation data processed (2025)

The effect of *perceived usefulness* on *attitude* through *purchase intention* (β=0.178, p=0.012)

Influence *perceived usefulness* against *attitude* Significant effect although the direct influence on the purchase rate was not significant (p=0.817 attached to table 9). *Perceived usefulness* affects purchase intent indirectly through *attitude*, so the more consumers feel that electric motorcycles are useful, the more positive their attitude will be and ultimately increase the intention to buy two-wheeled electric vehicles. *Perceived usefulness* Two-wheeled electric vehicles can improve *attitude* positive consumer attitudes, but the influence is largely through encouragement *purchase intention* First. In other words, when consumers find two-wheeled electric vehicles useful, this will increase *purchase intention*, which further reinforces their positive attitude towards the product.

The effect *of perceived ease of use* on *attitude* through *purchase intention* (β=0.399, p<0.001)

The value of the coefficient is 0.399, the statistical T-value is 4.089 and the T value is 0 (0.05) *perceived ease of use* has a significant relationship to *attitude* Through *purchase intention*. The results of this study show that the ease of using two-wheeled electric motors increases *purchase intention* consumers through the formation of *attitude* positive. The data shows a strong and significant relationship. *Perceived ease of use* The use of two-wheeled electric vehicles will increase *purchase intention* consumers, and *purchase intention* further strengthens a positive attitude (*attitude*) consumer to two-wheeled electric vehicles. In other words, *perceived ease of use* not only forming *attitude* positively, but also reinforcing it through encouragement *purchase intention.*

Perceived ease of use Proven to encourage *purchase intention* which then strengthens *attitude* positive consumers, manufacturers of two-wheeled electric vehicles, should: design more products *user-friendly*, light weight, and easy to operate even by new users, providing convenience supporting features, such as battery monitoring app, convenient charging system, and simple control panel. Consumer education to build *purchase intention* that *perceived ease of use* need to be communicated in order to grow *purchase intention*, for example through: video tutorials and interactive digital content that demonstrate a simple process of use, maintenance, and charging; live demo (*test ride, roadshow, experience day*) which makes potential consumers feel for themselves how easy it is to operate a vehicle.

Attitude acting as the main mediator where he channeled influence to *perceived usefulness* and *perceived ease of use* Wed *purchase intention* where *perceived usefulness* and *perceived ease of use* insignificant directly to *purchase intention*, significant influence indirectly through *attitude*. This research supports the concept of *technology acceptance model* (TAM) where *attitude* is the main link between perception of technology and behavioral intentions.

***Effect Size* (f^2)**

Value *effect size* indicates the strength of the relationship, where the closer you are to 1 or -1, the stronger the relationship, if you are closer to 0 the weaker the relationship will be. Table 10 shows the results of the calculation of the *effect size*.

Table 10. Test *Effect Size* (f2)

Variable	Attitude	Perceived Usefulness	Perceived Behavioral Control	Perceived Ease of Use	Price Sensitivity	Purchase Intention	Subjective Norm
Attitude						0.495	
Perceived Usefulness	0.147					0.001	
Perceived Behavioral Control						0	
Perceived Ease of Use	0.743						
Price Sensitivity						0.003	
Purchase Intention							
Subjective Norm						0.17	

Source : smartPLS 4.1.1.2 calculation data processed (2025)

From the results of the table 10, the strongest relationship is the *perceived ease of use* to *attitude* of 0.743, this shows that the ease of use of two-wheeled electric vehicles greatly affects the positive attitude of consumers. *Attitude* towards *purchase intention* shows a strong relationship with a value of 0.495, meaning that *the attitude* is quite strong affecting *consumer purchase intention* towards two-wheeled electric vehicles. *Attitude* is a key variable in trapping the influence of technology perception on consumer purchase intention, *the variables price sensivity* and *perceived behavioral control* do not have a meaningful contribution to *purchase intention*. The results of this study reinforce that *purchase intention* is driven more by *attitude* and social support than price and *perceived behavioral control*.

CONCLUSION

This study highlights that attitude serves as the primary mediator through which perceived usefulness and perceived ease of use influence consumers' purchase intention for two-wheeled electric vehicles, with these two factors having no significant direct effect but exerting a meaningful indirect impact via attitude. This finding aligns with the Technology Acceptance Model (TAM), which posits attitude as the crucial link between technology perception and behavioral intentions. The research also identifies subjective norms as a significant positive driver of purchase intention, while price sensitivity and perceived behavioral control show no significant influence. Overall, purchase intention is shaped more strongly by positive consumer attitudes and social influence than by economic considerations or control perceptions. Future research could explore the role of external factors such as infrastructure availability, government incentives, or environmental awareness in moderating these behavioral relationships to better understand the broader context of electric vehicle adoption in Indonesia.

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