

The Effect Of Government Subsidy Policy And Perceived Usefulness On Polytron Electric Motorcycle Purchase Intention

Aisa Fadhilatul Istiqomah^{1,*}, Linda Oktafia², Isnatul Agil Kinanti³

1 Universitas Pembangunan Nasional Veteran, East Java, Surabaya, Indonesia

2 Universitas Pembangunan Nasional Veteran, East Java, Surabaya, Indonesia

3 Universitas Pembangunan Nasional Veteran, East Java, Surabaya, Indonesia

* E-mail: aisafadhilatulistiwa@gmail.com

ABSTRACT

The increased use of conventional motorcycles results in higher greenhouse gas emissions, which ultimately causes environmental damage. One environmentally friendly product that offers an alternative solution to this problem is the electric motorcycle. The objective of this study is to identify and analyze the effects of government subsidies and perceived usefulness on purchase intentions for Polytron electric motorcycles in Indonesia. The present quantitative study focuses on the Indonesian population. The sample size of the study was 110 respondents, who were selected using purposive sampling. The data were analyzed using the SEM-PLS technique with the SmartPLS tool. The results showed that government subsidies positively affect purchase intentions for Polytron electric motorcycles in Indonesia. Furthermore, perceived usefulness has been shown to positively influence purchase intention. This research implies that continuing the government subsidy policy, combined with a subsidy campaign and maximum socialization of the benefits of electric motors to the Indonesian people, can increase interest in buying electric motorcycles.

KEYWORDS: *electric motorcycle; perceived usefulness; purchase intention; subsidy*

INTRODUCTION

Various environmental problems that occur today are one of the main focuses of people in the world. One form of environmental damage is climate change caused by increased greenhouse gas emissions from the transportation sector (Agustina et al., 2025). Based on the results of the United Nations Climate Change Conference of the Parties (COP 28) in 2023, it shows the urgency of accelerating global community action in fighting climate change by switching from vehicles that use fossil fuels (Xuan, 2024). In developing countries with large populations, such as Indonesia, there is a greater prevalence of motorcycle users in comparison to automobile users (Yuniaristanto et al., 2022). This has led to Indonesia's high dependence on fossil fuels such as petroleum (International Energy Agency, 2022). In addition, 300 million kilograms of carbon emissions per day are generated by more than 120 million motorcycle units with an annual growth of motorcycles in Indonesia of 5-6% (Transportasi Umum Massal Indonesia Menuju Zero Emission, n.d.).

The transition from fossil-fueled motorcycles to renewable energy vehicles such as electric motors can reduce the increase in carbon emissions that occur (Yuniaristanto et al., 2022). In order to stimulate the purchase intention of the public towards electric motorcycles, Indonesia has established various regulatory frameworks (Agustina et al., 2025). Presidential Regulation No. 79 of 2023 constitutes a revision of Presidential Regulation No. 55 of 2019, which encompasses the acceleration of the battery-based electric motor vehicle program. The transition program to electric motorcycles is also supported by Ministerial Regulation Industry No. 21 of 2023 which contains the provision of a discount or subsidy of IDR 7,000,000 to Indonesian citizens (WNI), at least 17 years old, and have a National Identity Card (KTP) for the purchase of one unit of two-wheeled battery-

based electric motorized vehicles that have a minimum Domestic Component Level (TKDN) of 40 percent. The acquisition of an electric motorcycle at a reduced price is applicable to a single KTP. Regulation of the Minister of Industry No. 21 of 2023 caused the sales of electric motorcycles to exceed the target previously set by the government of 50,000 units (Yanuar, 2024). Sales of electric motorcycles until mid-December reached 62,541 units (Program Bantuan Pemerintah Untuk Pembelian Kendaraan Bermotor Listrik Berbasis Baterai Roda Dua, 2023).

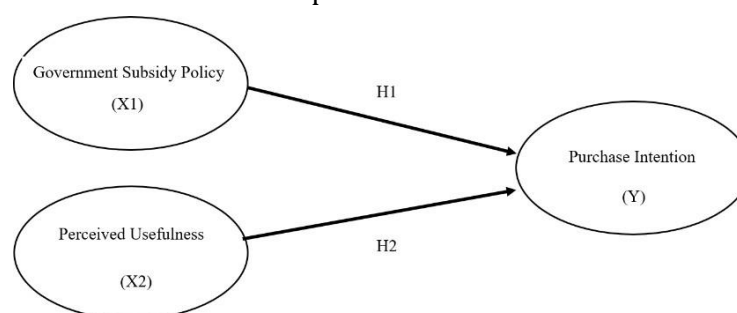
The government officially discontinued its financial support for the acquisition of electric motorcycles on December 15, 2024. This decline is evidenced by a 70% decrease in electric motorcycle sales at the beginning of 2025 (Setiawan, 2025). Polytron, a brand that received government subsidies, experienced a decline in sales. Polytron is a product of PT Hartono Istana Teknologi. According to Polytron's commercial director, Tekno Wibowo, sales of Polytron electric motorcycle declined by 50% in the first quarter of 2025 compared to the first quarter of the previous year (Wandira & Sulistiowati, 2025). One potential factor contributing to this decline is the government's ambiguous subsidy policy, which has led to delays in consumers purchasing Polytron electric motorcycles. Furthermore, Polytron reported sales of approximately 95% of its electric motorcycles in the initial quarter of 2024, a significant portion of which was attributable to the government's subsidy program (Putra, 2024). The impact of changes, reductions, or cancellations of subsidies on the intention to purchase electric vehicles, including electric motorcycles (Tang et al., 2024). The government subsidy policy has been demonstrated to positively influence consumer purchasing interest (Sheldon et al., 2023). Subsidies are defined as financial assistance or support provided by the government to specific institutions or communities with the aim of stimulating economic activity (Ramadhani et al., 2024).

In addition to the government subsidy policy, another factor that can influence Indonesians' purchase intentions regarding electric motorcycles is perceived usefulness, which relates to how useful a product can be to consumers (Jaiswal et al., 2021). Perceived usefulness is defined as the extent to which users perceive electric motorcycles as being conducive to achieving their daily travel objectives (Shaikh et al., 2023). Research indicates that users who find electric motorcycles useful are more likely to purchase them (Shaikh et al., 2023). The intention to purchase environmentally friendly products is influenced by perceived usefulness (Huang et al., 2021). The perceived usefulness of electric vehicles (EVs) has been identified as a primary factor influencing purchase intention (Handarujati, 2024), particularly in emerging markets where comprehension of green technologies is still evolving (Purwanto & Rini, 2022). This study aims to identify and analyze the effects of government subsidies and perceived usefulness on Polytron electric motorcycles purchases in Indonesia.

METHODOLOGY

Research Design. The framework in this study is based on previous research and literature reviews that have been conducted.

Figure 1
Conceptual Framework



The present study employs a quantitative approach with the objective of identifying and analyzing the effect of exogenous variables on endogenous variables directly through hypothesis testing using data obtained through online surveys. The hypotheses in this study, among others, are as follows:

Hypothesis 1: Government Subsidy Policy is predicted to have a positive effect on the purchase intention of Polytron electric motorcycles in Indonesia.

Hypothesis 2: Perceived Usefulness is predicted to have a positive effect on the purchase intention of Polytron electric motorcycles in Indonesia.

Population and sample used. The population in this study were Indonesian people. Sampling was conducted using non-probability sampling technique with purposive sampling type. The sample criteria are individuals who have a fossil fuel motorcycle driver's license (SIM) and know about the government's subsidy policy related to electric motorcycle purchase. The calculation of the number of samples required is based on the Hair et al., (2021), which is the multiplication of the number of indicators of the observed variables by 5-10. The number of indicators of the three variables is 11 indicators multiplied by 10, so this study used 110 respondents.

Data Collection Techniques. The data collection techniques employed in this study entailed the execution of online surveys and a literature analysis of books, websites, scientific journals, articles, and other relevant sources of information. These data sources were selected with the objective of providing a comprehensive and substantiated foundation for the study's findings.

Tools or Instruments Used. Data collection from respondents was carried out by distributing Google Forms links containing questionnaires online, namely through uploads on instastory, Whatsapp stories, and chat groups on Whatsapp researchers during the period or time of data collection. Variable measurement employs an ordinal scale through the implementation of weighting techniques (Likert). The Likert scale employed in this study ranged from 1, representing "strongly disagree," to 5, representing "strongly agree."

Data Analysis Methods. Statistic data analysis method with SEM (Structural Equation Modeling) technique based on PLS (Partial Least Square). The data processing in this study employs the SmartPLS version 4 application. The data analysis performed includes outer model analysis, which establishes a connection between indicators and their latent variables. The inner model assesses the influence between latent variables in this study and analyze the characteristics of respondents including gender, age, and the latest level of education.

RESULTS AND DISCUSSION

Characteristic of Respondent

The distribution of questionnaires that have been carried out online, generates data from 110 respondents who can be grouped based on gender, age, and last education level. The distribution of respondents based on gender was as follows: 57.3% identified as male and 42.7% as female. Characteristics based on age are dominated by respondents aged 22 - 26 years by 44.5%; age 17 - 21 years old by 22%; age 27 - 31 years old by 9%; age 32 - 36 years old by 13%; age 37-41 years old at 8%; over 41 years old at 3.6%. The education level of respondents varied from bachelor degree (53.6%), high school (37.3%), master degree (6.4%) and Ph.D. (2.7%).

Outer Model Evaluation

Table 1
Reliability and Validity Results of the Measurement Model

Construct	Factor Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Government Subsidy Policy (X1)				
X1.1	0.867	0.833	0.899	0.749
X1.2	0.835			
X1.3	0.893			
Perceived Usefulness (X2)				
X2.1	0.795	0.849	0.899	0.689
X2.2	0.887			
X2.3	0.838			
X2.4	0.798			
Purchase Intentions (Y1)				
Y1.1	0.883	0.875	0.914	0.728
Y1.2	0.872			
Y1.3	0.767			
Y1.4	0.885			
Y1.1	0.883			

Table 1 presents the assessment of the measurement model through two criteria: reliability and convergent validity. Reliability is typically quantified using the Cronbach's alpha and composite reliability values greater than 0,7 (Hair et al., 2021). As demonstrated in Table 1, the three variables in this study exhibit Cronbach's alpha and composite reliability values that exceed 0,7. This indicates that the variables meet the criteria for reliable measurement and signifies that each indicator demonstrates a high degree of consistency in its capacity to assess the variable. Furthermore, the assessment of convergent validity is determined by the factor loadings value, which must exceed 0,7 and the AVE which must exceed 0,5 (Hair et al., 2021). Table 1 shows the factor loadings value of all indicators above 0,7 and the AVE value is more than 0,5. Therefore, it can be stated that it has met the criteria for convergent validity.

Table 2.
Discriminant Validity among Different Constructs

	Government Subsidy Policy (X1)	Perceived Usefulness (X2)	Purchase Intention (Y1)
Government Subsidy Policy (X1)	0.865		
Perceived Usefulness (X2)	0.323	0.830	
Purchase Intention (Y1)	0.581	0.391	0.853

The assessment of discriminant validity is carried out by evaluating the relationship between the variables using the Fornell-Larcker criterion, as illustrated in Table 2. This criterion

demonstrates a strong correlation between each variable and the variable with which it is associated, rather than the correlation value between each variable and a variable that is not associated with it.

Inner Model Evaluation

Table 1.

R-square of Partial Least Square

	R-square
Purchase Intention (Y1)	0.384

Inner model testing is the next stage after the assessment of the outer model has been carried out. The coefficient of determination is measured by examining the R square value of the endogenous variables. As illustrated in Table 3, the R-squared value is 0,384 indicating that the government subsidy policy and perceived usefulness variables influence the purchase intention variable by 38,4%. It is important to note that other variables not considered in this study may contribute to the remaining percentage of variance.

Table 2.

The Result of Hypothesis Testing

Hypothesis	PATH	β	SE	T-value	P-values	Decision
H1	Government Subsidy Policy $\rightarrow$ Purchase Intention	0.508	0.085	5.992	0.000	Accepted
H2	Perceived Usefulness $\rightarrow$ Purchase Intention	0.227	0.099	2.300	0.011	Accepted

Hypothesis testing provides answers about the effect of each exogenous variable on endogenous variables. The process of hypothesis testing involves the assessment of two key values: the T-value and the P-value. The hypothesis is considered to be accepted if the T-value is greater than 1,96 and the P-value is less than 0,05. Based on Table 4, it shows that the first hypothesis, namely the government subsidy policy, is predicted to have a positive effect on the purchase intention of Polytron electric motorcycles in Indonesia, can be accepted. The second hypothesis, namely perceived usefulness, is predicted to have a positive effect on the purchase intention of Polytron electric motorcycles in Indonesia. Furthermore, the government subsidy policy variable has been found to have a positive path coefficient of 0,508. It has been demonstrated that the path coefficient of the perceived usefulness is 0,227.

Discussion

The present study identifies that the government subsidy policy variable can positively and significantly influence the purchase intention of Polytron electric motorcycles in Indonesia. The results show that the government subsidy policy positively impacts the purchase intention of Polytron electric motorcycles in Indonesia. The findings are in accordance with research conducted by (Sheldon et al., 2023), namely the government subsidy policy has a positive influence on purchase intention. The positive effect obtained by the purchase intention variable from the government subsidy policy indicates that the cancellation, alteration, or reduction of subsidies will affect purchase intention (Tang et al., 2024). Government subsidy policy has been identified as a significant factor in stimulating the purchase intention of Polytron electric motorcycles in Indonesia (Laksmana & Mahadwartha, 2024). The costs incurred by consumers will be lower if the assistance from

the government for purchasing electric motors is higher (Ha et al., 2023). Subsidizing electric motorcycle purchases is key to creating market appeal for Polytron electric motorcycles in developing countries like Indonesia, where most consumers are price-sensitive.

This study found that perceived usefulness has a positive and significant effect on the purchase intention of Polytron electric motorcycles in Indonesia. The results of this study answer the second hypothesis namely perceived usefulness is thought to have a positive effect on the purchase intention of Polytron electric motorcycles in Indonesia. It is the belief of users that electric motors, including Polytron, can be useful to them. This, in turn, can affect their purchase intention (Jaiswal et al., 2021). Perceived usefulness of electric vehicles in the context of this study, namely Polytron electric motorcycles that are different from other modes of transportation, can have a positive influence on consumer purchase intention (Jeffyan & Fahrul, 2023). An important and consistent role is played by perceived usefulness in introducing new technologies such as electric vehicles so that consumers are likely to evaluate the benefits of electric vehicles which in turn can develop purchase intention (Shanmugavel & Micheal, 2022). Perceived usefulness of environmentally friendly products, which in the context of this study are Polytron electric motorcycles, can influence purchase intention (Huang et al., 2021). Perceived usefulness shapes consumers' rational considerations, ultimately influencing their intention to purchase Polytron electric motorcycles.

CONCLUSION

The objective of this study is to analyze the impact of government subsidy policy and perceived usefulness on the purchase intention of Polytron electric motorcycles in Indonesia. The primary conclusions of the present study are as follows. First, government subsidy policy has a positive effect on the purchase intention of Polytron electric motorcycles. Second, perceived usefulness has a positive effect on the purchase intention of Polytron electric motorcycles in Indonesia. This study contributes to the literature by analyzing two independent variables, namely government subsidy policy and perceived usefulness and their influence on the purchase intention of Polytron electric motorcycles in Indonesia. Based on the results of this study, the continuation of the government subsidy policy combined with related subsidy campaigns can increase purchase intention for electric motors. The government and electric motor companies can maximize the socialization of the benefits of electric vehicles to the Indonesian people. The results of this study are expected to provide suggestions and information that are taken into consideration in decision making by the government and related companies. This study has a limited number of samples and only uses three variables related to electric motorcycles. Future research can add the number of samples and other additional variables to get better results and more accurate results.

Acknowledgments

The author would like to express his deepest gratitude to fellow researchers who have provided support, encouragement, and valuable contributions during the research process. Expressions of gratitude are extended to all respondents who have dedicated their time and are willing to provide data that contribute to the success this research.

REFERENCES

- Agustina, R., Yuniaristanto, & Sutopo, W. (2025). Factors Influencing Electric Motorcycle Adoption in Indonesia: Comprehensive Psychological, Situational, and Contextual Perspectives. *World Electric Vehicle Journal*, 16(2), 1–21. <https://doi.org/10.3390/wevj16020106>
- Alberto Jeffyan, & Riza Fahrul. (2023). Electrifying Consumer Choices: Unveiling the Road to Green Intentions and EV Adoption. *Journal of Consumer Sciences*, 8(3), 257–276.

<https://doi.org/10.29244/jcs.8.3.256-276>

Ha, T. T., Nguyen, T. C., Tu, S. S., & Nguyen, M. H. (2023). Investigation of Influential Factors of Intention to Adopt Electric Vehicles for Motorcyclists in Vietnam. *Sustainability (Switzerland)*, 15(11). <https://doi.org/10.3390/su15118765>

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R*. Springer.

Handarujati, E. (2024). Analysis of Factors Driving Purchase Intention of Electric Cars: Perspective of Theory of Planned Behavior, Norm Activation Model, and Technology Acceptance Model. *Journal of Economics and Business UBS*, 13(1), 108–129. <https://doi.org/10.52644/joeb.v13i1.1279>

Huang, X., Lin, Y., Lim, M. K., Tseng, M. L., & Zhou, F. (2021). The influence of knowledge management on adoption intention of electric vehicles: perspective on technological knowledge. *Industrial Management and Data Systems*, 121(7), 1481–1495. <https://doi.org/10.1108/IMDS-07-2020-0411>

Jaiswal, D., Kaushal, V., Kant, R., & Kumar Singh, P. (2021). Consumer adoption intention for electric vehicles: Insights and evidence from Indian sustainable transportation. *Technological Forecasting and Social Change*, 173(November 2020), 121089. <https://doi.org/10.1016/j.techfore.2021.121089>

Laksmmana, V. C., & Mahadwartha, P. A. (2024). Government Incentives and Consumer Motives on Electric Vehicle Purchase Intent in Indonesia. *International Journal of Business Economics (IJBE) Vol.*, 6(1), 36–45. <https://doi.org/10.30596/ijbe.v6i1.20955%0ACite>

Peraturan Menteri Perindustrian Nomor 21 Tahun 2023 Tentang Perubahan Atas Peraturan Menteri Perindustrian Nomor 6 Tahun 2023 Tentang Pedoman Pemberian Bantuan Pemerintah Untuk Pembelian Kendaraan Bermotor Listrik Berbasis Baterai Roda Dua, BERITA NEGARA REPUBLIK INDONESIA TAHUN 2023 NOMOR 676 1 (2023).

Peraturan Menteri Perindustrian Republik Indonesia Nomor 6 Tahun 2023 Tentang Pedoman Pemberian Bantuan Pemerintah Untuk Pembelian Kendaraan Bermotor Listrik Berbasis Baterai Roda Dua, BERITA NEGARA REPUBLIK INDONESIA TAHUN 2023 NOMOR 25 1 (2023).

Peraturan Presiden Nomor 79 Tahun 2023 Tentang Perubahan Atas Peraturan Presiden Nomor 55 Tahun 2019 Tentang Percepatan Program Kendaraan Bermotor Listrik Berbasis Baterai (Battery Electric Vehucle) Untuk Transportasi Jalan (2023).

Peraturan Presiden Republik Indonesia Nomor 55 Tahun 2019 Tentang Pecepatan Program Kendaraan Bermotor Listrik Berbasis Baterai (Battery Electric Vehicle) Untuk Transportasi Jalan (2019).

Program Bantuan Pemerintah untuk Pembelian Kendaraan Bermotor Listrik Berbasis Baterai Roda Dua. (2023). <https://landing.sisapira.id/>

Purwanto, S., & Rini, H. P. (2022). Analysis of Green Self Identity and Environment Concern on Adopt Electric Vehicle Intention With Perception of Ev. *International Journal of Social Service and Research*, 2(10), 964–976. <https://dx.doi.org/10.46799/ijssr.v2i10.168>

Putra, N. (2024). *Penjualan Motor Listrik Grup Djarum (Polytron) Didominasi Subsidi*. Otomotifbisnis. <https://otomotif.bisnis.com/read/20240422/273/1759161/penjualan-motor-listrik-grup>

djarum-polytron-didominasi-subsidi

- Ramadhani, S., Dewi, I., Anindra, N., Issanti, N., & Muhammad, J. (2024). ANALISIS KOMPARASI KEBIJAKAN SUBSIDI PAJAK MOBIL LISTRIK DI INDONESIA DAN THAILAND. *JURNAL NOVA IDEA*, 1(2), 53–62. https://doi.org/10.14710/nova_idea.47990
- Setiawan, S. (2025). *Insentif Berakhir, Penjualan Motor Listrik Anjlok 70 Persen pada Januari 2025*. Kompas. <https://money.kompas.com/read/2025/02/21/162944326/insentif-berakhir-penjualan-motor-listrik-anjlok-70-persen-pada-januari-2025?page=2>
- Shaikh, S., Talpur, M. A. H., Baig, F., Tariq, F., & Khahro, S. H. (2023). Adoption of Electric Motorcycles in Pakistan: A Technology Acceptance Model Perspective. *World Electric Vehicle Journal*, 14(10), 1–15. <https://doi.org/10.3390/wevj14100278>
- Shanmugavel, N., & Micheal, M. (2022). Exploring the marketing related stimuli and personal innovativeness on the purchase intention of electric vehicles through Technology Acceptance Model. *Cleaner Logistics and Supply Chain*, 3(November 2021), 100029. <https://doi.org/10.1016/j.clscn.2022.100029>
- Sheldon, T. L., Dua, R., & Alharbi, O. A. (2023). Electric vehicle subsidies: Time to accelerate or pump the brakes? *Energy Economics*, 120(March), 106641. <https://doi.org/10.1016/j.eneco.2023.106641>
- Tang, X., Feng, J., Feng, B., Mao, X., & Zhuo, X. (2024). Policy analysis on the promotion of new energy vehicles in China considering consumers' car purchasing choices in the "post - subsidy era": based on the study of a three - party evolutionary game. *Environment, Development and Sustainability*, 1–32. <https://doi.org/10.1007/s10668-024-04774-4>
- Transportasi Umum Massal Indonesia Menuju Zero Emission*. (n.d.). Biro Komunikasi Dan Administrasi Publik. Retrieved March 13, 2025, from <https://dephub.go.id/post/read/transportasi-umum-massal-indonesia-menuju-zero-emission#>
- Wandira, L., & Sulistiowati, T. (2025). *Penjualan Motor Listrik Polytron Anjlok 50% pada Kuartal I-2025, Apa Penyebabnya?* Kontan.Co.Id. <https://industri.kontan.co.id/news/penjualan-motor-listrik-polytron-anjlok-50-pada-kuartal-i-2025-apa-penyebabnya>
- Yanuar, Y. (2024). *Pemerintah Siapkan Rp7 Triliun untuk Subsidi Sepeda Motor Listrik, Cukup Modal KTP Tidak Tertarik?* Tempo. <https://www.tempo.co/ekonomi/pemerintah-siapkan-rp7-triliun-untuk-subsidi-sepeda-motor-listrik-cukup-modal-ktp-tidak-tertarik--56221>
- Yuniaristanto, Dela Utami, M. W., Sutopo, W., & Hisjam, M. (2022). Investigating Key Factors Influencing Purchase Intention of Electric Motorcycle in Indonesia. *Transactions on Transport Sciences*, 13(1), 54–64. <https://doi.org/10.5507/tots.2022.002>