

STRATEGY FOR OPTIMIZING PURCHASE INTENTION OF ELECTRIC VEHICLES MEDIATED WILLINGNESS TO PAY

Rinto Harno^{1*}, Putri Septi Naulina Hasibuan², Liya Rinawati³

¹⁻³ Management Science Doctoral Program, University of Dr. Soetomo Surabaya
E-mail: ¹⁾ rintoharno2015@gmail.com, ²⁾ putriseptinaulina@gmail.com,
³⁾ Liyarinawati@gmail.com

Abstract

Currently, many people have the purchasing power to buy Battery Electric Vehicle (BEV) cars, making them a popular trend in the automotive industry due to their ability to reduce air pollution in the long term. This research aims to identify important factors that influence the purchasing decision of BEV cars. The study employed a quantitative research design, where data were collected through questionnaires distributed to potential BEV car users. Data analysis was done using a multiple regression model. The results showed that there was an influence between Cost, Technology and Macro Level on Purchase Intention either partially or simultaneously. To increase BEV car purchases, strategies should be focused on minimizing the production cost of the cars, introducing modern yet user-friendly technology, and promoting the benefits of BEV cars over conventional ones. This can help shift people's attitudes and behaviors towards BEV cars.

Keywords: Electric Cars, Purchase Intention, Willingness To Pay

1. INTRODUCTION

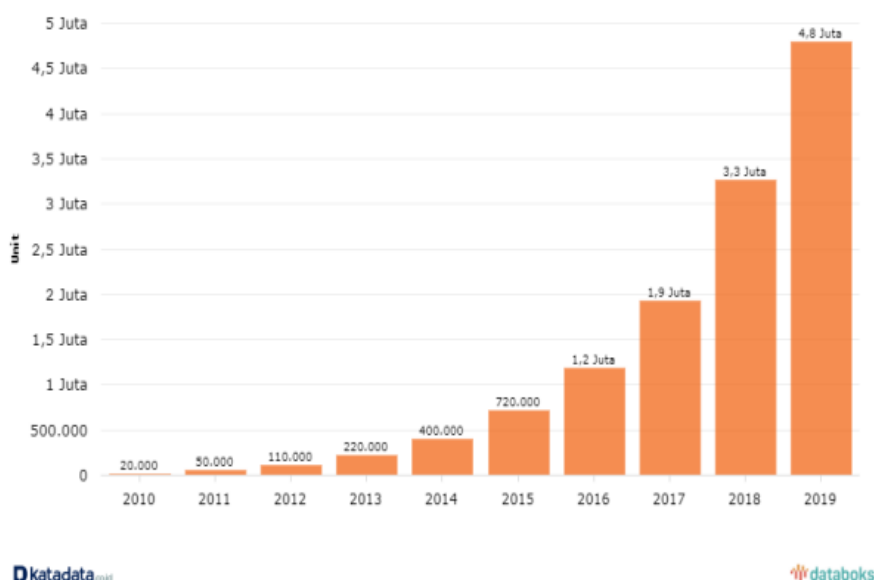
Electric-based vehicles are one of the solutions to reduce the use of fossil fuels. Electric cars have the advantage that they do not produce exhaust gas so that they can reduce global warming in Indonesia (Resosudarmo et al., 2009). The government through Presidential Decree No. 55 of 2019 provides support for electric-based vehicles. Therefore, almost all automotive companies are competing to create replacement vehicles to preserve the environment, especially air so that they can maintain survival on this earth, namely with electric vehicles.

The government again raised fuel prices as of September 3, 2022 to reduce the burden of energy subsidies (Yuniarto, 2022). The issuance of Presidential Regulation No. 55 of 2019 triggered motor vehicle manufacturers in Indonesia to launch their electrification products and of the several types of existing electrification technology, hybrid technology is the most preferred by motor vehicle manufacturers in Indonesia. One of them is Toyota, which prefers hybrid technology for its products for reasons such as fuel efficiency, environmental friendliness, infrastructure, and maintenance costs (Yulanto & Iskandar, 2021).

Data from the Association of Indonesian Automotive Industries (Gaikindo), in 2019, Indonesia sold 25 plug-in hybrid electric vehicles (PHEV) and 787 hybrid electric vehicles (HEV). Sales of battery electric vehicles were only recorded in 2020, totaling 125 units. Then, 8 units of PHEV were sold and 1,191 units of HEV in the same year. In 2021, BEV sales will increase to 687 units, PHEV 46 units, and HEV 2,472 units. As of March 2022, sales of BEV were recorded at 64 units, PHEV 10 units, and HEV 646 units. Despite recording sales growth, the coverage of electric cars is still very low when compared to oil-powered cars. The percentage of electric cars sold was not even more than 0.5% in each of these years (Pahlevi, 2022).

The government again raised fuel prices as of September 3, 2022 to reduce the burden of energy subsidies (Yuniarto, 2022). The increase in fuel prices has triggered motor vehicle manufacturers in Indonesia to launch their electrification products and from several types of existing electrification technologies. Hybrid technology is the most popular among motor vehicle manufacturers in Indonesia. Toyota car manufacturers are prioritizing hybrid technology for their current products for reasons such as fuel efficiency, environmental friendliness, infrastructure, and maintenance costs (Yulanto & Iskandar, 2021). Apart from that, Honda also prioritizes hybrid technology with the main reason being the problem of electric charging facilities (Dahwilani, 2020).

In the global market, ownership of the BEV variant electric car in the 10 year period from 2010 to 2019 has a significant trend annually, the following is a table of the use of BEV electric cars in the world.



Figures 1. Trends in World Electric Car Ownership

Source: International Energy Agency (2020)

The interest of the citizens of the Republic of Indonesia in purchasing Battery EVs above ASEAN average. The average desire to buy a battery electric car in Indonesia is in third place, reaching 41%, below that of the Philippines at 46%, and Thailand at 44%, and outperforms Malaysia at 37% and Vietnam at 33% in buying interest of electric car based battery (Lim, 2022). The lifestyle of young people in Indonesia is increasingly aware of the environment due to the lack of tailpipe emissions produced by electric vehicles. Potential electric vehicle sales in Indonesia (Supriyanto, 2019), at this time the domestic community has purchasing power to purchase BEV electric cars. So that this vehicle will become the newest vehicle trend for selling electric cars while at the same time protecting the air environment so that it can be healthy in the long term considering that the level of air pollution is still very high throughout the world, and people are increasingly aware that buying an electric car indirectly contributes to environment sustainability.

An electric vehicle is a vehicle that is powered by an electric motor and uses electric energy stored in a battery or other energy storage container. Electric vehicles became very

popular in the late 20th century, 19th and early 20th centuries, but its popularity waned as internal combustion engines became more advanced and automobile prices made gasoline cheaper. The energy crisis of the 70's and 80's led to little interest in cars. Electric vehicles, but it wasn't until the 2000s that new automakers started taking electric vehicles seriously. This is significant given the rise in oil prices in the 2000s and the fact that many people around the world have realized the negative impact of greenhouse gas emissions.

This study will analyze consumer behavior. Consumer behavior is a part of human behavior and therefore it cannot be separated from its parts. In marketing, the study of consumer behavior aims to determine consumer tastes constantly changing and to influence it to be willing to buy company goods and services when they need them. According to Sheth & Mittal, consumer behavior is the mental and physical activity performed by household customers (end consumers) and business customers who make decisions for pay for, buy and use certain products and services (Tjiptono, 2016) .

This study aims to identify factors that influence consumers' willingness to purchase electric vehicles. These factors are Micro Level, Cost, Technology, Macro Level, Environmental Awareness, environmental concern and willingness to pay. Micro-level variables are built from sociodemographic factors and social networks (Yuniaristanto et al., 2022). Sociodemographic are personal factors that influence individual behavior in decision making. The indicators of socio-demographic factors in the study are: age, last education level, monthly income, and environmental awareness (Yuniaristanto et al., 2022). Findings suggest that social networking factors such as EV experience, social media sharing frequency, and online social network size are factors influencing EV adoption (Habich-Sobiegalla et al., 2018).

The costs associated with EVs are (1) high initial costs, (2) poor knowledge of fuel costs, (3) high battery costs, (4) base rent, and (5) maintenance costs. Cost has the greatest impact on purchase intention (Yuniaristanto et al., 2022). High purchase price is one of the barriers to EV adoption, including battery costs (Kim, J. et al., 2018) . Uncertainty about costs related to maintenance, service and repair facilities is the main factor hindering the adoption of electric vehicles (Liu & Lai, 2020) .

Technology includes the ability to travel the farthest distance traveled after the electric car battery is fully charged (Liu & Lai, 2020). Power is the top speed of an electric car. Top speed and charging times are barriers to widespread EV adoption (Liu & Lai, 2020). Charging time is the total time for an electric vehicle to be fully charged. Feeling of safety while driving an electric vehicle is related to noise level and is a factor affecting consumers' perception of electric vehicles (Kopplin et al., 2021). Technology in terms of top speed and charging time is a barrier to widespread adoption of electric vehicles (Liu & Lai, 2020). Feel safe when driving an electric vehicle Noise is a factor affecting consumers' perception of electric vehicles (Kopplin et al., 2021).

EV purchase factors are mainly related to infrastructure requirements and incentives. In particular, macro-level factors including charging station infrastructure, government budgetary incentives, and pollution must be taken into account in compiling explanations of EV purchase intentions (Habich-Sobiegalla et al., 2018). For users in emerging markets, the availability of electricity for charging station infrastructure is inevitable. It is important to consider charging in public spaces to support EV adoption (Thananusak et al., 2017). Consumers also demand the availability of charging options at the workplace and the availability of charging options at home to recharge their vehicle batteries (She et al., 2017). The availability of charging station infrastructure and the

availability of fees in public places are factors that support the adoption of electric vehicles (Thananusak et al., 2017). Macro factors related to uncertainty in procurement of private charging stations could act as barriers to EV adoption (She et al., 2017).

Environmental awareness evaluate the attitude of electric vehicle users towards renewable energy, NGV, environmental conservation, air and water pollution, conservation of endangered species, reuse and recycling, waste management and CO₂ (Okada et al., 2019). Examining Factors Affecting Electric Vehicle Purchase Behavioral Intentions in Pakistan, Including Perceived Ease of Use, Environmental Concerns, Social Impact, Effort Expectations, and Perceived Amenity Conditions (Lee et al., 2021). Environmental Awareness as a Personal Factor Affecting Individual Behavioral Decisions (Higuera-Castillo et al., 2019).

Environmental concern shows consumers' emotional reactions to environmental problems such as hatred, sadness, and affection (Ninh, 2021). People Concerned About the Environment Are More Likely to Buy a Hybrid Car (Ninh, 2021). Environmental awareness is also an important factor affecting EV purchase intention (Ninh, 2021). Environmental concern has no significant impact on purchase intention (Ninh, 2021). In addition, environmental concern shows consumers' emotional reactions to environmental problems such as hatred, sadness, and affection (Ninh, 2021). Consumers who care about the environment tend to pay a premium to receive more environmental benefits (Ninh, 2021). Environmental concern has no significant effect on willingness to pay (Ninh, 2021).

The intention to buy an electric vehicle can be influenced by the willingness to pay factor (Kumar & Alok, 2020). In other industries in Vietnam, such as higher education, willingness to pay is also used as a factor influencing consumer purchasing decisions (Lee et al., 2021). Supports a positive relationship between the willingness to pay and the intention to buy electric vehicles (Ninh, 2021). The willingness to pay has a significant impact on purchase intention (Ninh, 2021).

This research is expected to provide managerial implications for the automotive industry to find out what values the potential community wants to get, both in terms of benefits and risks that hinder the intention to purchase electric cars. In addition, this research aims to support the government in implementation electric cars and help analyze people's interest in buying electric cars. By knowing this value, the automotive industry can develop appropriate marketing strategies for potential people who are willing to buy electric cars. The aims of this study are to analyze the effect of cost, technology, and macro level on purchase intention of electric cars.

2. LITERATURE REVIEW

2.1. Electric Car

An electric vehicle is a vehicle that is powered by an electric motor and uses electrical energy stored in a battery or other energy storage area. Electric vehicles were very popular in the late 19th and early 20th centuries, but then their popularity gradually declined due to advances in internal combustion engine technology and lower prices for gasoline-powered vehicles. The energy crisis of the 70s and 80s sparked interest in electric vehicles, but it wasn't until the 2000s that new automakers took a serious interest in electric vehicles. This is because oil prices soared in the 2000s, and many people around the world have become aware of the negative impact of greenhouse gas emissions.

2.2. Purchase Intention

Purchase intention is an indication of the willingness of individuals or potential consumers to make purchases (Jobber, D.& Lancaster, 2016). Purchase intention is part of consumer behavior and one of the stages in the purchase decision process (Kotler & Kevin Lane Keller, 2016). Purchase intention is part of consumer behavior and one of the stages in the purchase decision process (Kotler & Kevin Lane Keller, 2016). Purchase intention can change during the purchase decision-making stage because it is influenced by unforeseen factors, such as price increases or other people's decisions. Purchase intention comes from learning and thinking processes that form perceptions (Astuti & Putri, 2018).

2.3. Cost

The costs associated with electric vehicles according to She et al., (2017) are (1) high purchase prices. (2) Poor understanding of fuel costs. (3) High battery charge. (4) Main rental fee. (5) Maintenance costs (Yuniaristanto et al., 2022).

2.4. Technology

Driving capacity is the furthest distance an electric vehicle can travel on a fully charged battery (She et al., 2017). Power is the top speed of an electric car. Top speed and charging times have been barriers to widespread EV adoption (Guerra, 2019). Charging time is the total time for an electric vehicle to be fully charged. The safety sound when driving an electric vehicle is a factor that affects consumers' perception of electric vehicles (She et al., 2017).

2.5. Macro Level

Macro-level factors are mainly related to infrastructure requirements and incentives. In particular, macro-level factors, including charging station infrastructure, government budgetary incentives, and pollution, need to be considered when interpreting the compilation of EV purchases (Habich-Sobiegalla et al., 2018). The availability of charging station infrastructure is inevitable for users in emerging markets. It is important to consider the availability of charging in public places to support EV adoption (She et al., 2017). Consumers also demand the availability of charging options at the workplace and the availability of charging options at home to recharge their vehicle batteries (She et al., 2017).

2.6. Hypothesis Formulation

2.6.1. Influence of Cost on Purchase Intention

Cost is the most influential thing on Purchase Intention. Apart from looking at the micro level, costs are also very influential on Purchase Intention. Consumer purchase interest is a consumer behavior that indicates their level of commitment to purchase. Consumer needs and expectations of a product influence their behavior when purchasing a product. High purchase price is one of the barriers to EV adoption, including battery costs (Ali et al., 2018). Uncertainty about costs related to maintenance, service and repair facilities is the main factor hindering the adoption of electric vehicles (Egbue & Long, 2012). The hypothesis put forward is:

H1: Cost has a significant effect on Purchase Intention

2.6.2. Influence of Technology on Purchase Intention

Conducted a cross-national survey in Brazil, Russia, and China that studied the purchase intention of citizens' electric vehicles, taking technological factors into account (Habich-Sobiegalla et al., 2018). Technologies related to top speed and charging time are barriers to widespread EV adoption (Guerra, 2019). Feel safe when driving an electric vehicle Noise is a factor affecting consumers' perception of electric vehicles (She et al., 2017). The hypothesis put forward is:

H2: Technology has a significant effect on Purchase Intention

2.6.3. Influence of the Macro Level on Purchase Intention

A cross-national survey was conducted in China, Brazil, and Russia to examine citizens' EV purchase intentions, taking into account macro-level factors. Macro-level factors are mainly related to infrastructure requirements and incentives (Habich-Sobiegalla et al., 2018). Availability of charging station infrastructure and availability of charging in public places are factors supporting the adoption of electric vehicles (She et al., 2017). Macro factors related to uncertainty in procurement of private charging stations could act as barriers to EV adoption (She et al., 2017). The hypothesis put forward is:

H3: The Macro Level has a significant effect on Purchase Intention

3. RESEARCH METHODS

3.1. Types Of Research

This type of research is quantitative research based on the positivist paradigm. Quantitative research is characterized by the fact that the research is specific from beginning to end, so the title of the proposal is the same as that of the research report. Uncover previously discovered problems and problems that would be different in the field because they have been validated with the reality of the discovery (Darwin et al., 2021). This study will test the hypothesis between the relationship variables and build a causal relationship between variables. The causal relationship in this study is the influence relationship at the cost, technology, and macro level on purchase intention.

3.2. Research Model

To facilitate the process of data analysis and understanding of research objectives, the researcher created the following research model:

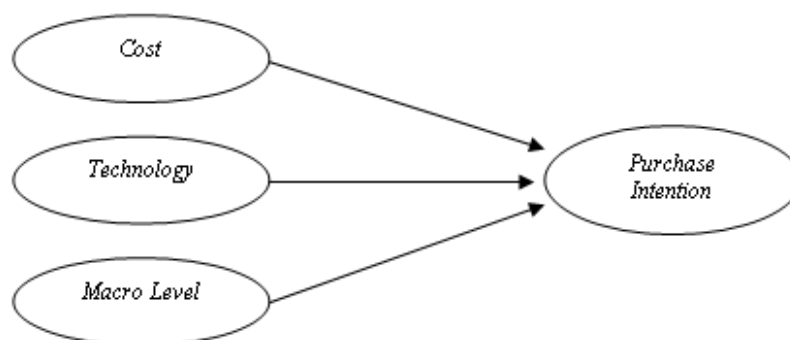


Figure 2. Research Model
Source: Researcher Data (2023)

3.3. Data Source

Data needed in research as a source of information, so that the research object can be described specifically. This study uses primary data and secondary data. Primary data is data that will be obtained directly from respondents through questionnaires distributed to users who want to use electric cars. While secondary data is data collected indirectly through websites, journals, and literature that can support research.

3.4. Variable Operational Definitions

The variables and their operations are described in the following table:

Table 1. Operational Definition of Research Variables

Variable	Variable	Variable Definitions	Indicator	Code	Reference
Independent	Cost	An amount of money that must be spent to get something	Perception of purchase price	C1	She et al., (2017)
			Perception of battery charge	C2	
			Perception of charging costs	C3	
			Perception of maintenance costs	C4	
	Technology	Application of science that can increase added value	Perception of Mileage Capability	T1	Guerra, (2019)
			Perception of Power	T2	
			Perception of charging time	T3	
			Perception of Security	T4	
			Perception of battery life	T5	
	Macro Level	All needs related to infrastructure and incentive	Availability of charging station infrastructure in public places	TMA1	(Kim et al., 2018; Dia et al., 2017)
			Availability of charging station infrastructure at the workplace	TMA2	
			Availability of charging station infrastructure at home	TMA3	
			Availability of service points	TMA4	
			Purchase incentive policy	TMA5	
			Annual tax discount policy	TMA6	

Variable	Variable	Variable Definitions	Indicator	Code	Reference
			Charging fee discount policy	TMA7	
		An indication of the willingness of individuals or potential consumers to make purchases	Willingness to buy an electric car	PI1	
Dependent	Purchase Intentions (Y)		Willingness to recommend electric cars to others	PI2	Bhalla et al., (2018)

Source: Researcher Data (2023)

Determining the scope of the study is measured by the variable under study. The scale used in this study is the Likert scale. The Likert scale is a scale used to measure a person or a group of people's attitudes, opinions, and views on social phenomena (Sugiyono, 2018). Each question posed will receive an answer choice in the form of support, represented by the following words and points: "Strongly disagree" with 1 point, "Disagree" with 2 points, "Neutral" with 3 points, "Agree" with 3 points, and "Agree" with 1 point. Rated "a" 4 points, totally agree 5 points.

3.5. Data Collection Technique

The data collection technique used in this study is the use of questionnaires and if it is not possible to meet in person, the researcher will provide a questionnaire/questionnaire which is distributed via the Google form link made by the researcher.

3.6. Population and Research Sample

In this research, the population used is all users who want to use an electric car. While the meaning of the sample in quantitative research is partial population size and characteristics. The sample criteria taken are users who want to use an electric car. In this sampling technique the authors use a purposive sampling method. Purposive sampling is a determination technique sample with consideration certain. Where the criteria for this research sample are aged between 24 to 60 years and have an interest in buying an electric car. The sample size used is a type of multivariate refers to the sample measurement guidelines according to Hair (2013), that use 5-10 times the variable indicator. So, this study used a sample of $18 \times 5 = 90$ respondents.

3.7. Data Analysis Techniques

The data analysis used in this study is a multiple regression model. The tests carried out are the determinant coefficient R^2 , t test, and F test.

4. RESULTS AND DISCUSSION

4.1. Research Result

4.1.1. Result of Multiple Linear Regression Analysis

The data analysis in this study used SPSS program for multiple linear regression analysis, and the results are described as follows:

Table 2. Multiple Linear Regression Analysis

X variable	B	t statistic	t Sig.	r
Constant	0.278			
Cost	0.711	3.196	0.002	0.326
Technology	-0.804	-3.166	0.002	-0.323
Macro level	1.162	3.438	0.001	0.348
R = 0.771		R Square = 0.594		
F = 41.896		Sig. F = 0.000		

Source: Researcher Data (2023)

Based on the results, the regression equation is obtained as follows:

$$Y = 0.278 + 0.711 X_1 - 0.804 X_2 + 1.162 X_3$$

From the equation obtained above is known: (a) In the path equation it is obtained that the value of β_0 (constant) is positive, namely 0.278 so that it can be interpreted that if the cost, technology, and macro level is equal to 0 (zero) or constant, then Purchase Intention of 0.278. (b) Cost coefficient value (X_1) = 0.711. This value is positive, so it can be interpreted that increased costs will increase purchase intention. (c) Technology coefficient value (X_2) = -0.804. This value is negative, so it can be interpreted that increased technology will reduce purchase intention. (d) The value of the macro level coefficient (X_3) = 1.162. This value is positive, so it can be interpreted that an increased macro level will increase purchase intention.

The determination coefficient is a numerical value used in this study to measure the ability of the independent variable to explain the dependent variable. The R^2 value obtained is 0.594 which means 59.4% Purchase Intentions can be explained by variables of cost, technology, and macro level. And for 40.6% is influenced by other variables not examined in this study. The value of the correlation coefficient (R) is used to determine the closeness of the relationship between the independent variables and the dependent variable. The correlation coefficient value obtained is 0.771. This value indicates that the relationship between the variables cost, technology, and macro level is strong on the purchase intention variable.

4.1.2. Simultaneous Test (F Test)

This test is carried out statistically in interpreting the actual value to measure the accuracy of the sample regression function. The F test is used to test the simultaneous test, and the standard is that the significance value of the F test is <0.05 , so it can be said that the independent variable has a significant impact on the dependent variable at the same time. Based on Table 2, the significance value is 0.000 which means less than 0.05. This state there is a significant simultaneous impact between the cost, technology, and macro level on Purchase Intentions.

4.1.3. Partial Test (t test)

The t test in this study was carried out to test whether there is an effect of an independent variable on a single or most known dependent variable. The following are the results of the t-test for this study: 1) The Sig value given by the test results is 0.002, which means it is less than 0.05, so it can be concluded that the cost variable has a partly significant impact on the purchase intention. 2) The Sig value given by the test results is 0.002, which means it is less than 0.05, so it can be concluded that technical variables have a partial significant impact on purchase intention. 3) The Sig value of the test result is 0.001, which is less than 0.05. It can be considered that macro variables have a partial significant impact on purchase intention.

4.2. Discussion

4.2.1. The Influence of Cost on Purchase Intention

If it is shown that cost has a significant positive effect on purchase intention and the significance value is 0.000 or less than 0.05, then the cost variable has a direct positive effect on the purchase intention variable 0.711. This justifies the first hypothesis "cost has a significant effect on purchase intention", which can be declared acceptable. According to the obtained results, cost has a clear positive effect on purchase intention. This positive impact can be interpreted as the higher the cost, the higher the willingness to purchase. The findings of this study are consistent with recent research that high purchase price is one of the barriers to EV adoption, including battery costs (Ali et al., 2018). Likewise, recent studies have shown that uncertainty about the cost of maintenance, service and repair facilities is a major factor hindering the adoption of electric vehicles (Egbue & Long, 2012). The strategy for increasing purchase decisions in terms of costs is to minimize the cost of making electric cars so that the selling price of these electric cars can be reached by the public

4.2.2. The Influence of Technology on Purchase Intention

The direct negative impact of technology variables on purchase intention variables is 0.804, and the relationship shows that technology has a significant positive impact on purchase intention variables, with a significance value of 0.001 or less than 0.05. As such, the higher the technology, the lower the purchase intention. So far, the second hypothesis "technology has a significant impact on purchase intention" has been proved and can be accepted. Hypothesis testing performed proves that technology has a significant direct effect on purchase intentions with a negative effect. This means that the higher the technology, the lower the purchase intention (Guerra, 2019). Feel safe when driving an electric vehicle Noise is a factor affecting consumers' perception of electric vehicles (She et al., 2017). The strategy for increasing purchase decisions in terms of technology is being able to use modern technological innovations but is still easy for the public to use.

4.2.3. The Influence of Macro Level on Purchase Intention

The macro-level variable has a direct positive impact on the purchase intention variable of 1.162. The relationship proves that the macro-level has a significant positive impact on the purchase intention, with a significance value of 0.009 or less than 0.05. That is, the higher the macro level, the greater the increase in purchase intention. This proves that the third hypothesis, "the macro level has a significant effect on purchase intention", can be declared acceptable. Hypothesis testing conducted proves that the

macro level has a significant direct and positive effect on purchase intention. In other words, the higher the macro level, the more the purchase intention increases. The findings of this study support recent findings that the availability of charging station infrastructure and the availability of charging in public places are factors that influence support for the adoption of electric vehicles (She et al., 2017). Macro factors related to uncertainty in procurement of private charging stations could act as barriers to EV adoption (She et al., 2017). Strategies to increase procurement decisions at the national level can be implemented by introducing EVs and their advantages over conventional vehicles to change paradigms and behaviors towards EVs

5. CONCLUSION

Based on the results of the research that has been done, it can be interpreted that the cost of buying an electric car, technology and the macro level have a significant effect on the purchase intention of electric car. From these results a strategy can be formed to improve purchasing decisions. In terms of costs, the strategy adopted is to minimize the cost of making electric cars so that the selling price of these electric cars can be reached by the public. In terms of technology, it can use modern technological innovations but it is still easy for the community to use and from a macroeconomic perspective, electric cars can be introduced and their advantages over conventional cars so that they can change the paradigm and behavior of people towards electric cars. The suggestions are as follows: (1) It is expected that companies can increase the cost, technology, and macro level to increase purchases. (2) It is hoped that further research can develop the results of this study by adding other variables that can affect Purchase Intention.

REFERENCES

- Ali, F., Kim, W. G., Li, J., & Jeon, H. M. (2018). Make it delightful: Customers' experience, satisfaction and loyalty in Malaysian theme parks. *Journal of Destination Marketing and Management*, 7, 1–11. <https://doi.org/10.1016/j.jdmm.2016.05.003>
- Astuti, B., & Putri, A. P. (2018). Analysis on the Effect of Instagram Use on Consumer Purchase Intensity. *Review of Integrative Business and Economics Research*, 7(2), 24–38.
- Dahwilani, D. M. (2020). *Survey: 16.5 Percent of People Playing Online Games During the Covid-19 Pandemic*. INews.
- Darwin, M., Marianne, R. M., Salman, P. S., Yuliana, N., Hardi, T., Diana, S., I Made, D. M. A., Budi, P., Pasionista, V., & Antonius, A. G. (2021). *Metode Penelitian Pendekatan Kuantitatif Kualitatif*. CV. Media Sains Indonesia.
- Egbue, O., & Long, S. (2012). Barriers to widespread adoption of electric vehicles: An analysis of consumer attitudes and perceptions. *Energy Policy*, 48(2012), 717–729. <https://doi.org/10.1016/j.enpol.2012.06.009>
- Guerra, E. (2019). Electric vehicles, air pollution, and the motorcycle city: A stated preference survey of consumers' willingness to adopt electric motorcycles in Solo, Indonesia. *Transportation Research Part D: Transport and Environment*, 68(June), 52–64. <https://doi.org/10.1016/j.trd.2017.07.027>
- Habich-Sobiegalia, S., Kostka, G., & Anzinger, N. (2018). Electric vehicle purchase

- intentions of Chinese, Russian and Brazilian citizens: An international comparative study. *Journal of Cleaner Production*, 205, 188–200. <https://doi.org/10.1016/j.jclepro.2018.08.318>
- Hair, J. F. et al. (2013). *Univariate Data Analysis. 7 ed, Exploratory Data Analysis in Business and Economics*. https://doi.org/10.1007/978-3-319-01517-0_3.
- Higueras-Castillo, E., Molinillo, S., Coca-Stefaniak, J. A., & Liébana-Cabanillas, F. (2019). Perceived value and customer adoption of electric and hybrid vehicles. *Sustainability (Switzerland)*, 11(18). <https://doi.org/10.3390/su11184956>
- Jobber, D. & Lancaster, G. (2016). *Selling and Sales Management 10th Edition*. Pearson.
- Kim, J., D. ., Waliser, G. ., Cesana, X., Jiang, T. L., & Neena, J. M. (2018). *loud and radiative heating profiles associated with the boreal summer intraseasonal oscillation*. <https://doi.org/doi:10.1007/s00382-017-3700-3>
- Kopplin, C. S., Brand, B. M., & Reichenberger, Y. (2021). Consumer acceptance of shared e-scooters for urban and short-distance mobility. *Transportation Research Part D: Transport and Environment*, 91. <https://doi.org/10.1016/j.trd.2020.102680>
- Kotler, P., & Kevin Lane Keller. (2016). *Manajemen Pemasaran edisi 12 Jilid 1 & 2*. PT. Indeks.
- Kumar, R. R., & Alok, K. (2020). Adoption of electric vehicle: A literature review and prospects for sustainability. *Journal of Cleaner Production*, 253, 119911. <https://doi.org/10.1016/j.jclepro.2019.119911>
- Lee, J., Baig, F., Talpur, M. A. H., & Shaikh, S. (2021). Public intentions to purchase electric vehicles in Pakistan. *Sustainability (Switzerland)*, 13(10). <https://doi.org/10.3390/su13105523>
- Lim, S. T. (2022). *Pengaruh Kepedulian Lingkungan, Persepsi Manfaat Moneter, Persepsi Simbolik, Persepsi Lingkungan, Norma Subjektif, dan Sikap Konsumen terhadap Minat Pembelian Mobil Listrik Berbasis Baterai (BEV)*. Universitas Multimedia Nusantara.
- Liu, Y., & Lai, I. K. W. (2020). The Effects of Environmental Policy and the Perception of Electric Motorcycles on the Acceptance of Electric Motorcycles: An Empirical Study in Macau. *SAGE Open*, 10(1). <https://doi.org/10.1177/2158244019899091>
- Ninh, N. G. (2021). Resistance to change and purchase intention of electric vehicles: Empirical evidence from vietnam. *Asian Journal of Business Research*, 11(2), 83–101. <https://doi.org/10.14707/ajbr.210108>
- Okada, T., Tamaki, T., & Managi, S. (2019). Effect of environmental awareness on purchase intention and satisfaction pertaining to electric vehicles in Japan. *Transportation Research Part D: Transport and Environment*, 67(2019), 503–513. <https://doi.org/10.1016/j.trd.2019.01.012>
- Pahlevi, R. (2022). *Penjualan Mobil Listrik di Indonesia*. Databoks.
- Resosudarmo, B. P., Nurdianto, D. A., & Yusuf, A. A. (2009). Greenhouse Gas Emission in Indonesia: The Significance of Fossil Fuel Combustion. *Regional Development, Energy and the Environment in Indonesia, July 2020*, 146–159.
- She, Z. Y., Qing Sun, Ma, J. J., & Xie, B. C. (2017). What are the barriers to widespread adoption of battery electric vehicles? A survey of public perception in Tianjin, China. *Transport Policy*, 56(March), 29–40. <https://doi.org/10.1016/j.tranpol.2017.03.001>
- Sugiyono. (2018). *Metode Penelitian Kualitatif* (S. Y. Suryandari (ed.); 3rd ed.). CV Alfabeta.

- Supriyanto, Y. (2019). *Gaya Hidup Milenial Peduli Lingkungan Jadi Potensi Perkembangan Kendaraan Listrik*. Bisnis.Com.
- Thananusak, T., Rakthin, S., Tavewatanaphan, T., & Punnakitikashem, P. (2017). Factors affecting the intention to buy electric vehicles: Empirical evidence from Thailand. *International Journal of Electric and Hybrid Vehicles*, 9(4), 361–381. <https://doi.org/10.1504/IJEHV.2017.089875>
- Tjiptono, F. (2016). *Service, Quality & satisfaction*. Andi.
- Yulanto, D. M., & Iskandar, H. (2021). Study of Development Analysis of Hybrid Electric Vehicle Technology. *Journal of Automotive Technology Vocational ...*, 02(1), 31–44.
- 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>
- Yuniarto, T. (2022). *Potret Kenaikan Harga Bahan Bakar dan Subsidi bagi Masyarakat*. Kompaspedia.Com.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).