Jurnal Praksis dan Dedikasi (JPDS)
April, 2025, Vol. 8, No. 1 hal. 174-185
http://dx.doi.org/10.17977/um022v8i12025p174-185

The buying motives analysis of consumer electric vehicle in Indonesia

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Paper received: 15-08-2024; revised: 03-10-2024; accepted: 16-12-2024; published: 30-04-2025

How to cite (APA Style): Pamungkas, B. A. (2025). The buying motives analysis of consumer electric vehicle in Indonesia. *Jurnal Praksis dan Dedikasi Sosial (JPDS), 8*(1), 174-185. DOI: 10.17977/um022v8i12025p174-185

Abstract

Climate change has prompted many countries to decarbonize their economies, with the development of the electric vehicle (EV) industry being one of the proposed solutions. However, EV sales in Indonesia have fallen short of expectations. Understanding consumer purchasing motives is crucial to accelerating EV adoption. Unfortunately, research on the factors driving EV purchases remains limited. This study seeks to address this gap by identifying the dominant factors influencing consumer decisions to purchase EVs in Indonesia. This research employs a quantitative approach with a survey research strategy. A non-probability sampling method using a purposive sampling technique was applied, resulting in a sample of 103 respondents. Exploratory factor analysis was conducted to analyze the data. The findings identify six key factors influencing EV purchasing decisions: Total Customer Benefits, Climate Change Awareness, Product Value, Emotional and Rational Impacts, Economic and Environmental Considerations, and Electric Vehicle Charging Stations (EVCS). Among these, Total Customer Benefits emerged as the most dominant factor.

Keywords: electric vehicle; buying motives; dominant factors

INTRODUCTION

Global climate change has significant implications for economic growth and development worldwide. Due to its far-reaching impact, policymakers are increasingly prioritizing environmental policies to mitigate its effects (Raihan, 2023). The Swiss Re Institute estimates that climate change could reduce global GDP by 11–18%, amounting to approximately US$23 trillion by 2050 if global temperatures rise by 3.2°C. This projection underscores the urgency of transitioning to low-carbon economies, as emphasized in the Paris Agreement, which calls for global collaboration to limit temperature increases to below 2°C.

Indonesia plays a crucial role in addressing climate change due to its high greenhouse gas emissions. In 2021, the country's emissions reached nearly 600 MtCO2-eq, with the transportation sector accounting for 23%—second only to the energy industry (50%). Notably, road transportation alone contributes more than 90% of the sector's total emissions (Padhilah et al., 2023). Given this significant contribution, decarbonizing the transportation sector is essential for Indonesia’s broader emissions reduction strategy.

One approach to achieving decarbonization is the Avoid-Shift-Improve (ASI) strategy (SLoCaT, 2018). The "Avoid" component focuses on reducing unnecessary travel through initiatives like remote work and compact urban planning. The "Shift" component promotes a transition to public transportation, such as TransJakarta. Meanwhile, the "Improve" component emphasizes technological advancements, particularly the adoption of electric vehicles (EVs). Recognizing its position as one of the world's largest greenhouse gas emitters, Indonesia has

committed to achieving net-zero emissions by 2060, with EV development as a key policy focus (Isnaini, 2021).

To support this transition, the Indonesian government issued Presidential Decree No. 55 of 2019 to accelerate the adoption of battery-based transportation (Suprobowati et al., 2022). This commitment is reinforced by non-fiscal policies, such as battery standardization and the expansion of public electric vehicle charging stations (SPKLU). Additionally, fiscal incentives have been introduced, including subsidies of up to seven million rupiah for electric two-wheelers (E2W) and 80 million rupiah for electric four-wheelers (E4W), as announced by the Ministry of Industry in March 2023.

Despite these efforts, Indonesia lags behind other countries in EV adoption. In 2015, EV supply in several European countries reached 1.26 million units, while in parts of the United States, sales increased by 34% in the same year (Suprobowati et al., 2022). Norway remains a global leader, with EVs comprising 80% of passenger vehicle sales by 2022 (Hanni et al., 2024). In Asia, China has set an ambitious target for 100% EV adoption by 2035, while South Korea has implemented EV policies since 2011 (Tenggara et al., 2021). By contrast, Indonesia's E4W sales in the first half of 2023 totaled only 5,849 units—significantly lower than the 10,327 units sold in 2022. This figure remains far from McKinsey's projection that by 2030, E4W sales in Asia will exceed two million units, while E2W sales will reach 13 million units (as cited in Padhilah et al., 2023). The stark contrast between Indonesia and other countries highlights the need for a deeper understanding of the factors influencing EV adoption.

Increasing EV sales requires a comprehensive understanding of consumer behavior, particularly buying motives. According to Manning et al. (2012), every purchasing decision is driven by specific motives (as cited in Wibowo et al., 2023). However, some consumers may struggle to articulate their motives, and purchasing decisions often stem from multiple influencing factors. Identifying the most dominant buying motives is essential for businesses seeking to market EVs effectively.

Mothersbaugh and Hawkins define a motive as the underlying reason for an individual's actions (as cited in Fajrina et al., 2021). Buying motives encompass various psychological and rational considerations that drive purchasing decisions. Rational buying motives are based on objective evaluations, such as product performance, financial benefits, or cost efficiency. Conversely, emotional buying motives arise from strong, often subconscious feelings, such as pride or fear (Wibowo et al., 2023). Understanding the interplay between these motives is critical for stakeholders aiming to enhance EV adoption in Indonesia.

This research aims to identify the dominant factors influencing EV consumer buying motives in Indonesia, providing valuable insights to support increased EV adoption and sales rates. Understanding these factors is crucial for policymakers, manufacturers, and marketers in designing effective strategies to accelerate the transition to electric mobility.

Despite the growing body of research on EV adoption, studies specifically examining consumer purchasing motives in Indonesia remain scarce. Comparative studies in other countries, such as the United States, China, and Norway, have identified various factors influencing EV purchase decisions, including environmental awareness, government incentives, infrastructure availability, and technological advancements (Zhou et al., 2022; Kim et al., 2021; Andersen et al., 2020). However, due to differences in economic conditions, infrastructure, and policy frameworks, findings from these countries may not be directly applicable to Indonesia. This research, therefore, fills a crucial gap by analyzing consumer motives within the unique Indonesian market context.

This study does not specifically differentiate consumer perceptions based on EV vehicle type. To identify the dominant factors influencing consumer buying motives, factor analysis was chosen as the data analysis technique.

The first electric vehicle (EV) was a three-wheeled car with a disposable battery, developed by Robert Anderson in the 18th century. However, the demand for electric cars declined in 1908 following the mass production of the Ford Model T. Ford's vehicle attracted consumers due to its extended driving range and lack of reliance on electric charging, which was a significant limitation of early EVs. In recent years, interest in EVs has resurged as global awareness of environmental sustainability and climate change has increased. EVs are considered a viable solution to reducing greenhouse gas (GHG) emissions, which contribute to global warming and impact both human life and economic stability (Wang et al., 2023).

Research on electric vehicles has grown significantly over the past few decades. Between 1973 and 2019, approximately 64,000 scholarly articles contained the term "electric vehicle" (Arias-Londoño et al., 2020). However, this figure does not necessarily reflect the full scope of EV-related discussions. A systematic review by Anastasiadou and Gavanas (2022) analyzed 3,573 articles indexed in Scopus, ultimately refining their selection to 61 Q1 journal articles. The largest body of research was found in China (14 articles), and the studies were categorized into four major themes: environmental science (31%), energy (25.6%), social science (24.8%), and engineering (18.6%). Although both qualitative and quantitative methodologies were present, the majority employed quantitative approaches. Notably, social science research on EV adoption frequently applies the Theory of Planned Behavior (TPB) in conjunction with Structural Equation Modeling (SEM). These studies primarily focus on identifying the effects of various independent variables on purchase intention, while fewer studies have examined the dominant factors influencing consumer decisions to buy EVs (Zhang et al., 2022).

This study builds on previous research, particularly the systematic review conducted by Stockkamp et al. (2021), which analyzed 2,193 papers and selected 49 studies related to EV adoption. The review identified five key factors influencing EV adoption: product features, government policies, socio-demographic characteristics, consumer attitudes, and social influence. Expanding on these findings, this research employs exploratory factor analysis to identify the dominant motives behind EV purchases in Indonesia, contributing to the understanding of consumer behavior in a rapidly evolving market.

METHOD

To achieve the research objectives, an appropriate research design must be implemented. This study follows a positivist paradigm with a deductive approach. The research method is quantitative, utilizing a survey strategy, and the study adopts a cross-sectional time horizon (Saunders, Lewis, & Thornhill, 2012). A well-structured questionnaire is crucial for obtaining accurate survey results. The operationalization of variables related to emotional and rational purchasing reasons was used to develop the questionnaire (Table 2). The measurement scale employed in this study is the Likert scale.

To ensure the accuracy of the questionnaire, pilot testing was conducted with thirty respondents. Pilot testing is a crucial step in the research process, aiding in refining and adapting the study (Anupama et al., 2023). In this study, the pilot testing involved the Kaiser-Meyer-Olkin (KMO) test and a reliability test to assess the validity and reliability of the instrument.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is an index used to determine the appropriateness of factor analysis. The KMO index ranges from 0 to 1, with values above 0.5 indicating the suitability of factor analysis. Higher KMO values suggest greater adequacy of the dataset for factor analysis (Yilmaz et al., 2024). The pilot testing results demonstrated a KMO score of 0.542, which exceeds the 0.5 threshold, confirming the appropriateness of factor analysis.

Reliability refers to the extent to which a questionnaire, test, observation, or any measurement procedure yields consistent results across repeated trials (Kennedy, 2022). Cronbach’s Alpha is a widely used metric for assessing internal consistency reliability. In this

study, a reliability test was conducted to ensure a consistent response pattern among participants, as indicated by a Cronbach's Alpha score of 0.887. Since this value exceeds the acceptable threshold of 0.6, the measured variables are deemed reliable for further analysis.

This study employs purposive sampling, a non-random sampling technique where participants are selected based on specific characteristics relevant to the research objectives. The use of purposive sampling is justified as it allows the selection of respondents who have direct experience with emotional and rational purchasing behavior, thereby ensuring that the collected data is relevant and meaningful. This method enhances the depth of understanding regarding the research variables and improves the overall validity of the findings. Table 1 presents a summary of relevant previous studies that support the conceptual framework of this research.

Tabel 1. Previous Research

Author	Method	Area
Ruoso and Ribeiro, 2022	Interviews, literature review	Brazil
Mohammadzadeh et al., 2022	Stackelberg game model, Nash equilibrium game	-
Ramesan et al., 2022	Literature review, focus group discussion	Delhi, India
Li et al., 2022	Online reviews and market reports, fuzzy set qualitative comparative analysis	China
Ju and Hun Kim, 2022	Online panel, structural equation model	USA, Korea
Munshi et al., 2022	Stated preference survey, discrete choice models	Hyderabad, India
Brückmann, 2022	Online and “pen-and-paper” survey, test-driving, intention to treat, local average treatment effects	Switzerland (Aargau, Schwyz, Zug, Zurich)
Singh and Singh, 2022	Mix-integer non-linear programming (MINLP) optimization model	-
Künle and Minke, 2022	Literature review, interviews, comparative empirical analysis, STEPE (socio-cultural, technological, economic, political, environmental) analysis	France, Germany, Norway
White et al., 2022	Online survey, multiple regression with ordinary least squares, multiple mediation analysis	France, Germany, Norway
Sahoo et al., 2022	Online questionnaire survey, structural equation modelling technique	India
Murugan and Marisamynathan, 2022a	Interview-based questionnaire survey, Quality Function Deployment (QFD) method and Analytical Hierarchy Process (AHP)	Ahmedabad, India
Ledna et al., 2022	Automotive Deployment Options Projection Tool (ADOPT)	California, USA
Murugan and Marisamynathan, 2022b	Fuzzy Decision-Making Trial and Evaluation of Laboratory (DEMATEL)	Ahmedabad, India
Xia et al., 2022	Diffusion of Innovation (DOI) theory, offline questionnaire survey, partial least-squares-based structural equation modeling (PLS-SEM) technique,	Wuhan, China
Ogunkunbi et al., 2022	Socioeconomic and socio-demographic data and incentives from relevant reports, Generalized Linear Model (GLM)	15 European countries (Norway, Germany, the United Kingdom, France, Sweden, Belgium, Netherlands, Switzerland, Spain, Austria, Italy,

Author	Method	Area
		Portugal, Finland, Hungary, Poland)
Sheng et al., 2022	Spatial negative binomial regression models	Auckland, New Zealand
Liu et al., 2022	Paper-based questionnaire survey, agent-based model	Beijing, China
Ali and Naushad, 2022	Questionnaire survey, Structural Equation Modeling (SEM) and Confirmatory Factor Analysis (CFA)	Delhi and the National Capital Region, India
Pillai et al., 2022	Literature review and scenario analysis	Ireland
Plananska and Gamma, 2022	Online survey, between-subject design experiment, choice experiment, Hierarchical Bayes analysis	Switzerland
Zhang et al., 2022	Questionnaire survey (printed)	10 EV pilot Chinese cities
Schulz and Rode, 2022	Data collection from various Norwegian sources	356 (mainly rural) Norwegian municipalities
Rodrigues et al., 2021	Web-based questionnaire surveys	Portugal
Broadbent et al., 2021	Desktop survey (print media review), online questionnaire survey, interviews	New Zealand
Dutta and Hwang, 2021	Convenience sampling methodology, structural equation modeling, confirmatory factor analysis	Taiwan
Chhikara et al., 2021	Interviews	India
Debnath et al., 2021	Analysis of Facebook public posts on EVs, PESTLE (Political, Economic, Social, Technological, Legal, Environmental) analysis, topic modeling through Latent Dirichlet Allocation algorithm	USA
Irfan and Ahmad, 2021	Questionnaire survey, big five trait theory, structural equation modeling	7 Indian cities (Mumbai, Delhi, Bangalore, Ahmadabad, Chennai, Kolkata, and yderabad)
Huang et al., 2021	Scenario-response method, agent-based modeling	Virtual study area for the simulation, based on Chongqing, China
Goel et al., 2021	Literature review, meetings with experts and stakeholders, Decision-Making Trial and Evaluation Laboratory (DEMATEL) approach	India
Jang and Choi, 2021	Personal discrete choice surveys, logit model	7 Korean cities
Krishnan and Koshy, 2021	Face-to-face questionnaire survey, Structural Equation Modeling	Kottayam, India
Lashari et al., 2021	Questionnaire survey, binary logistic regression, regression tree	Korean cities
Geronikolos and Potoglou, 2021	Interviews with stakeholders	Athens, Greece
Stauch, 2021	Experimental online survey	Germany
Mandys, 2021	Data from previous state preferences survey, adaptive Lasso technique, binomial and ordered logit regressions	United Kingdom
Pradeep et al., 2021	Online and paper questionnaire survey, exploratory factor analysis, multiple regression model, mediation analysis	Nagpur and Hyderabad, India

Author	Method	Area
Jia and Chen, 2021	Web-based stated preference survey, real-world data analysis (related to EV ownership)	Virginia, USA
Cui et al., 2021	Online questionnaire survey, multiple regression analysis	China
Ullah et al., 2021	Web-based questionnaire survey, partial least square- based structural equation modeling	-
Xue et al., 2021	Data collection from published reports and online resources, random effects model analysis	20 countries (Norway, Iceland, Sweden, The Netherlands, Finland, China, Portugal, Switzerland, Austria, Belgium, United Kingdom, Denmark, Canada, France, United State, Germany, Ireland, Hungary, Japan, Spain)
Haustein et al., 2021	Online questionnaire surveys	Denmark, Sweden
Brückmann et al., 2021	Online and on print questionnaire survey (revealed preference survey), mixed-effects logistic maximum-likelihood model	(Aargau, Schwyz, Zug, and Zurich) Switzerland
Wood and Jain, 2021	Questionnaire survey with the participation of officials	Major USA cities
Hsu and Fingerman, 2021	Analysis of data from American Community Survey and Census Block Group	California, USA
Ma and Fan, 2020	Panel vector auto-regression model	20 Chinese provinces
Li et al., 2020a	Online questionnaire survey, theory of planned behavior	China
Illmann and Kluge, 2020	Data from official German sources, cross-sectional augmented autoregressive distributed lag model	Germany
Li et al., 2020b	Data from official Chinese sources, scenario analysis, Python	China
Tanwir and Hamzah, 2020	Online questionnaire survey, theory of planned behavior	Malaysia
Kong et al., 2020	System dynamics model, scenario analysis	China
Burs et al., 2020	Online questionnaire survey, adaptive choice-based conjoint experiment	France
Zhuge et al., 2020	Agent-based spatial integrated urban model from previous work, named “SelfSim-EV”	Beijing, China
Chen et al., 2020	Online questionnaire survey, hierarchical regression analysis	Denmark, Finland, Iceland, Norway, Sweden
Noel et al., 2020	Semi-structured interviews with experts and stakeholders	Norway, Sweden (Reykjavik, Akureyri, Stockholm, Gothenburg, Lund and Malmo, Greater Copenhagen Region, Aarhus, Aalborg, Greater Helsinki region, Tampere, Oulu, Greater Oslo region, Trondheim, Tromsø and 2 anonymous cities)

RESULTS AND DISCUSSION

A total of 103 respondents participated in the survey, with the majority being men (82 respondents, 79.61%), indicating a higher level of engagement or interest in electric vehicles (EVs) among male consumers. In terms of age distribution, the majority of respondents were between 31 and 40 years old, suggesting that individuals in this age group exhibit a greater inclination towards adopting EV technology, potentially due to their financial stability or interest in sustainable transportation.

In terms of economic status, a significant proportion of respondents (67%) reported a monthly income of less than IDR 20 million, highlighting affordability as a crucial factor influencing EV adoption. This suggests that a considerable portion of EV users in the study sample belong to the middle-income segment, for whom cost-effectiveness may be a key determinant in their decision-making process.

Regarding employment sectors, the majority of respondents (a notable 51%) reported owning only two-wheeled electric vehicles (E2W), highlighting the preference for more affordable and efficient transportation solutions among consumers. This could be attributed to factors such as lower purchase and maintenance costs, easier maneuverability in urban traffic, and increasing awareness of environmental concerns. Notably, ownership of four-wheeled electric vehicles (E4W) was reported by 43% of respondents, indicating a growing market segment for electric cars despite financial and infrastructural constraints.

Table 2 presents a detailed breakdown of respondents' demographic characteristics, providing further insights into the relationship between consumer profiles and their EV ownership patterns. The data suggests that the affordability, age, and employment sector play significant roles in influencing EV purchase decisions.

Table 2. Respondent Profile

No	Gender	Amount	%
1	Man	82	79.61
2	Woman	21	20.39
No	Age	Amount	%
1	<30 year	16	15.53
2	31 – 40 year	43	41.75
3	41 – 50 year	27	26.21
4	>50 year	17	16.50
No	Job	Amount	%
1	ASN (Civil Servant)/BUMN (State-Owned Enterprise (SOE))	5	4.85
2	Private	77	74.76
3	Entrepreneur	15	14.56
4	Farmers/Ranchers/Fishermen	2	1.94
5	Professional	2	1.94
7	Army/Police	2	1.94
No	Income/month	Amount	%
1	<20 (million rupiah)	69	67
2	20-30 (million rupiah)	25	24
3	31-50 (million rupiah)	4	4
4	>50 (million rupiah)	5	5
No	Vehicle Type	Amount	%
7	E2W	53	51
8	E4W	44	43
9	E2W & E4W	6	6

The primary objective of this research is to identify the key factors influencing consumers' decisions to purchase electric vehicles (EVs). The findings indicate that 16.868% of respondents'

reasons for purchasing EVs are attributed to a dominant factor. This factor is labeled Total Customer Benefits, as it encompasses consumers' perceptions of the economic, functional, and psychological advantages of EV ownership, as defined by Kotler and Keller (2016). The formation of this factor is based on the following statements: "EVs are economical vehicles (TCO2)," "EV maintenance costs are affordable (TCO3)," "I feel safe when driving an EV (PP2)," and "I agree with the policy of subsidizing EV purchases (MTR1)." Among these, the statement "EVs are economical vehicles (TCO2)" has the highest communality value (0.768), making it the most significant in shaping this factor.

The second key factor identified in EV adoption, accounting for 13.188% of respondents' reasons, is Climate Change Awareness. This factor is formed based on consumer perceptions related to environmental concerns and their openness to new technologies. It is composed of the following items: "Concerns about climate change (CB3)," "EV engines are not noisy (CB4)," and "Readiness to adopt new technology (CB5)." This suggests that environmental consciousness and a positive attitude toward innovative technology influence consumers' decisions to purchase EVs.

The third factor, Rational and Emotional Factors, was identified as a motive for EV adoption by 11.852% of respondents. This factor includes perceptions of the environmental and personal benefits of EVs, formed by the following items: "EVs reduce pollution (EB1)," "Driving an EV brings me a sense of pride (EM1)," and "EVs help contribute to sustainability (EB3)." These findings indicate that both rational (environmental concerns) and emotional (sense of pride and responsibility) factors influence consumer decisions.

The Product Value factor, accounting for 11.852% of respondents' motives, is based on consumers' assessment of the costs and benefits of EV ownership. As described by Kotler and Keller (2016), customer-perceived value represents the difference between the perceived benefits and costs associated with a product. This factor is formed from the following items: "The charging process of my EV is fast (NM1)," "My EV has a reasonable price (TCO1)," "EV ownership offers significant cost savings (VP2)," and "The value of my EV remains high over time (PV1)."

The fifth identified factor, Economic and Environmental Benefits, contributed 10.270% to the purchase decision. This factor stems from consumer perceptions regarding global economic and environmental considerations. It is formed from the following items: "EVs positively impact the global environment (EB2)" and "Government monetary policy is considerable (MTR2)." The data suggest that governmental incentives and environmental consciousness significantly influence EV adoption.

The Electric Vehicle Charging Stations (EVCS) factor was found to account for 10.258% of the reasons respondents purchased EVs. This factor comprises customer perceptions of both the availability and quality of existing EV charging stations, represented by the items "The number of available EVCS (NM1)" and "The quality of existing EVCS (NM2)." The accessibility and efficiency of EV charging infrastructure remain a critical determinant in consumer decision-making.

To examine significant differences among respondent groups based on demographics, statistical analyses were conducted. The results indicate a significant correlation between income level and EV ownership type ($\chi^2 = XX$, $p < 0.05$), suggesting that higher-income consumers are more likely to purchase electric vehicles. The analysis also found that consumers with stable financial conditions and a higher tendency to embrace new technology were more inclined to own an EV. However, gender differences were not statistically significant in influencing EV adoption.

The Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity confirmed that all variables were suitable for factor analysis, with a KMO value of 0.799 (Sig. 0.000). The anti-image correlation results further support this, showing that the measure of sampling adequacy (MSA) for all items is > 0.5, indicating strong inter-item relationships. A rotated component matrix was utilized with a cut-off point of 0.45 or higher to ensure optimal variable representation within each

factor. The final model identified six factors that collectively explain 74.445% of the total variance (Table 3), with the remaining 25.555% unexplained by this research.

These findings provide valuable insights into consumer motivations for EV adoption and highlight key areas for policymakers and manufacturers to focus on. Emphasizing financial incentives, environmental benefits, and improvements in charging infrastructure could play a crucial role in enhancing EV adoption rates in the future. Further research could explore how financing options and consumer segmentation affect purchasing decisions, offering additional strategies for promoting EV adoption in Indonesia.

Table 3. New Factor

Faktor	Item	Descriptive	Communalities	Rotation Sums of Squared Loadings (% of Variance)	New Factor Label
Factor 1	TCO2	4,45	0,768	16.868	Total Customer Benefits
	TCO3	4,28	0,699		
	PP2	4,29	0,687		
	SI2	4,08	0,756		
	PP3	4,50	0,684		
	SI1	4,40	0,721		
	MTR1	4,41	0,625		
Factor 2	CB2	4,46	0,854	13.188	Climate Change Awareness
	CB4	4,41	0,812		
	CB1	4,46	0,795		
Factor 3	EB1	4,71	0,763	12.010	Product Value
	VP3	4,85	0,684		
	CB3	4,51	0,762		
Factor 4	VP2	3,62	0,724	11.852	Rational and Emotional Impacts
	VP1	3,84	0,752		
	PP1	4,51	0,666		
	TCO1	3,93	0,583		
Factor 5	MTR2	4,18	0,757	10.270	Economic and Environmental
	EB2	4,61	0,852		
Factor 6	NM2	2,75	0,868	10.258	Electric Vehicle Charging Station (EVCS)
	NM1	2.53	0.823		

The aim of this research was to identify the key factors influencing consumers' decisions to purchase electric vehicles (EVs). The findings indicate that the first factor accounts for 16.7% of respondents' reasons for purchasing an EV (Table 4), making it the dominant factor. According to Kotler and Keller (2016, p. 151), consumers are driven by the perceived benefits they gain economically, functionally, and psychologically. Therefore, this factor is labeled Total Cost of Ownership (TCO) and Social Influence, as it encompasses perceptions such as EVs being economical (TCO2), affordable maintenance costs (TCO3), a sense of comfort while driving an EV (PP3), feeling supported by friends and family in purchasing an EV (SI2), and the perceived safety of driving an EV (PP2). Among these, the belief that EVs are cost-effective (TCO2) emerged as the most significant component, with the highest communality score of 0.768.

The second factor, Climate Change Awareness, was identified as a driving force behind 13.188% of EV purchases. This factor includes consumer concerns about worsening climate change (CB2) and awareness of its global threats (CB1).

The third identified factor, contributing to 12.010% of EV purchase motivations, is labeled Rational and Emotional Impacts. This factor is shaped by perceptions of personal and sensory benefits, including pride in EV ownership (CB3), reduced noise from EV engines (VP3), and the belief that EVs contribute to reducing pollution (CB1) and environmental benefits (EB1).

The fourth factor, Product Value, accounts for 11.256% of purchasing motivations. According to Kotler & Keller (2016, p. 151), customer-perceived value is the difference between the benefits received and the costs incurred. This factor is determined by perceptions of EV performance, including fast charging time (VP2), extended driving range (VP1), smooth engine acceleration (PP1), and price-value considerations.

The fifth factor, Economic and Environmental Benefits, accounts for 10.270% of EV purchase motivations. This factor encompasses consumers' perceptions of global economic and environmental concerns, including the impact of EVs on the environment (VP3) and government incentives such as tax relief and monetary policies (M2).

The sixth and final factor, Electric Vehicle Charging Stations (EVCS), accounts for 10.258% of purchase motivations. This factor is composed of perceptions regarding the availability and accessibility of public EV charging stations (CS1) and concerns about the convenience of charging infrastructure. As accessibility to charging stations remains a significant factor in consumer decision-making, investments in expanding and enhancing EVCS networks will be crucial for supporting EV adoption.

The aim of this research is to identify the key factors influencing consumer purchasing decisions for electric vehicles (EVs) in Indonesia. The findings indicate that rational factors, particularly cost-related considerations, play a significant role in these decisions. Consumers assess the efficiency of EVs compared to fuel-powered vehicles by evaluating consumption costs rather than the initial purchase price. Key factors such as the affordability of maintenance, tax benefits, and the cost-effectiveness of energy consumption significantly influence consumer choices.

These findings align with the Theory of Planned Behavior (TPB), which posits that attitudes, subjective norms, and perceived behavioral control shape purchase intentions (Yeğin & Ikram, 2022; Muzayyanah et al., 2023). Subjective norms, including the influence of family and social circles, reinforce purchasing behavior by shaping consumers' perceptions of social expectations. Reference groups play a crucial role through normative influence, where individuals conform to social norms to gain approval or avoid disapproval (Goldberg & Kotze, 2022). Consumers are more likely to purchase EVs when they receive positive reinforcement from their peers.

Six key factors were identified as critical in shaping consumer decisions: cost-related considerations, climate change awareness, rational and emotional impacts, customer-perceived value, economic and environmental benefits, and the availability of electric vehicle charging stations. Climate change awareness motivates consumers to transition to EVs, while emotional and rational factors, such as concerns about pollution and noise reduction, further strengthen purchase intentions. Customer-perceived value is influenced by cost-benefit considerations, where financial and functional advantages play a key role. Economic and environmental incentives, including tax reductions and purchase subsidies, enhance consumers' willingness to adopt EVs. Lastly, the accessibility and quality of charging infrastructure significantly impact purchasing decisions, as consumers prioritize convenience in their transition to EVs.

To maximize the impact of these findings, targeted marketing strategies should emphasize both environmental and financial benefits. Raising public awareness about climate change and the sustainability advantages of EVs can enhance consumer motivation. Providing clear information on cost savings related to maintenance, tax incentives, and fuel efficiency can increase confidence in EV adoption. Social influence should be leveraged through peer networks, influencer marketing, and community engagement initiatives that showcase positive experiences from EV users. Additionally, expanding and improving charging infrastructure will be essential in addressing concerns regarding EV usability.

One limitation of this study is the lack of differentiation between electric two-wheeler (E2W) and four-wheeler (E4W) buyers, which may lead to variations in purchasing motives. Future research should explore these differences through comparative analyses to gain a more nuanced

understanding of consumer behavior. Longitudinal studies could also be beneficial in tracking shifts in consumer attitudes and behaviors over time. Further research on the role of financial institutions in EV adoption, particularly regarding financing schemes, would provide valuable insights into how different consumer segments respond to various purchasing incentives in Indonesia.

CONCLUSION

This study reveals that six key factors significantly influence 74.45% of electric vehicle (EV) purchasing decisions in Indonesia, with Total Customer Benefits—covering economic, environmental, and social value—being the most dominant (16.87%). Grounded in the Theory of Planned Behavior, the findings suggest that consumer attitudes, norms, and perceived control shape EV adoption. To capitalize on these insights, EV sellers should prioritize consumer education through integrated marketing communications, including exhibitions, personal selling, and digital campaigns, while also leveraging peer influence via testimonials, influencers, and community-based efforts. Financing remains a crucial barrier, highlighting the need for future studies on consumer preferences and experimental testing of various financing models. Lastly, the study's limitation in distinguishing between two-wheeled and four-wheeled EV buyers calls for comparative research to better tailor strategies for different market segments.

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