International Journal of Applied Business & International Management (IJABIM)
Vol. 11 No. 1, pp. 242-265, April, 2026
E-ISSN: 2621-2862 P-ISSN: 2614-7432
https://www.ejournal.aibpmjournals.com/index.php/IJABIM

Understanding Consumer Attitudes and Behavioral Intentions Toward Electric Vehicles: Evidence from Sustainable Consumption in Indonesia

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ARTICLE INFORMATION

Publication information

Research article

HOW TO CITE
Pinem, R. J., Pradhanawati, A., & Guangmei, P. (2026). Understanding consumer attitudes and behavioral intentions toward electric vehicles: Evidence from sustainable consumption in Indonesia. *International Journal of Applied Business & International Management*, *11*(1), 242-265.

DOI:
https://doi.org/10.32535/ijabim.v11i1.4517

Received: 31 January 2026
Accepted: 15 March 2026
Published: 20 April 2026

ABSTRACT

The adoption of electric vehicles (EVs) in Indonesia remains relatively low despite strong market potential and increasing environmental concerns. This study aims to examine the influence of esteem needs, cost savings, infrastructure, and ease of operation on consumer attitudes toward EVs and their subsequent behavioral intentions. A quantitative approach was employed using a survey of 100 EV users in Central Java and Jakarta, with data analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM). The results show that ease of operation ($\beta = 0.332$, $p < 0.05$) is the strongest predictor of attitude, followed by esteem needs ($\beta = 0.280$, $p < 0.05$) and cost savings ($\beta = 0.248$, $p < 0.05$), while infrastructure has no significant effect ($\beta = 0.070$, $p > 0.05$). Attitude significantly influences behavioral intention ($\beta = 0.760$, $p < 0.001$) and mediates the effects of the significant predictors. These findings indicate that EV adoption in Indonesia is driven more by psychological and economic factors than by infrastructure readiness. The study extends the TAM by integrating these factors within a sustainable consumption context. Practically, policymakers and marketers should emphasize ease of use, cost benefits, and symbolic value to accelerate adoption.

Keywords: Attitude; Behavioral Intention; Electric Vehicles; Sustainable Consumption; Technology Acceptance Model

JEL Classification: D12; M31; O33; Q55

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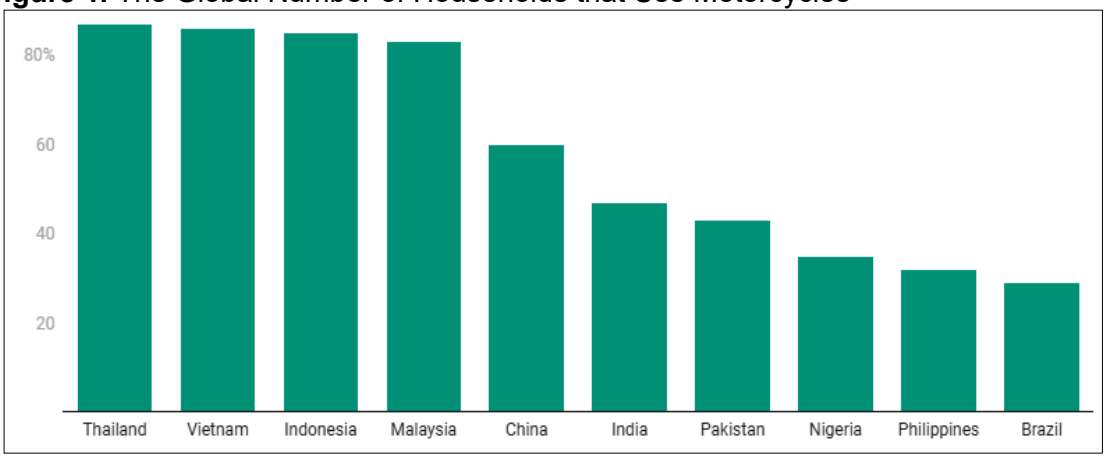
INTRODUCTION

Environmental issues have been among concerns that have not subsided over the past few years, this is because there are still a lot of problems regarding the environment. The global community has given greater attention due to the severe impact of environmental damage on human life. Rapid technological progress and the increasing demand for raw materials have resulted in environmental exploitation (Haider et al., 2022). According to the United Nations Sustainable Development Goals (UN SDGs), particularly Goal 12 on Responsible Consumption and Production, all countries are urged to actively engage in implementing this goal (Chan et al., 2018).

Environmentally friendly innovations, whether in the form of goods or services, are emerging in response to the current climate change crisis. Numerous companies, both large and small, are now producing products aimed at reducing their negative impact on the environment (Albitar et al., 2023; Guo & Kim, 2023). More environmentally friendly products have emerged, both domestically and internationally (Yang et al., 2020). Such products, with production processes that are different from conventional ones, often affect the price offered by companies and small enterprises (Albitar et al., 2023).

Figure 1. The Global Number of Households that Use Motorcycles



Source: CNBC Indonesia (2023)

The worldwide vehicle usage has increased significantly. Becoming one of the contributors to pollution and various environmental issues, particularly in urban areas (Huu & Ngoc, 2021). Vehicle numbers in Indonesia have steadily increased each year. Indonesia ranks third globally in terms of the highest percentage of households using motorcycles, alongside users of cars and other vehicles. Indonesia plays a role in reducing emissions by transitioning conventional vehicles to electric ones (Pirmana et al., 2023).

Figure 2. Sales of Electric Cars 2021–2023 (Several Countries)

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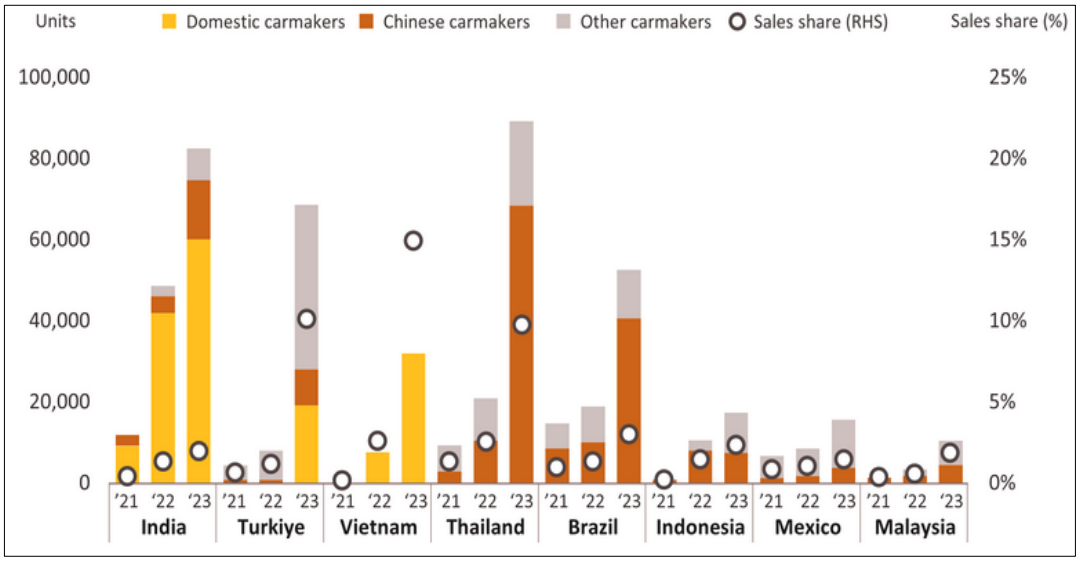
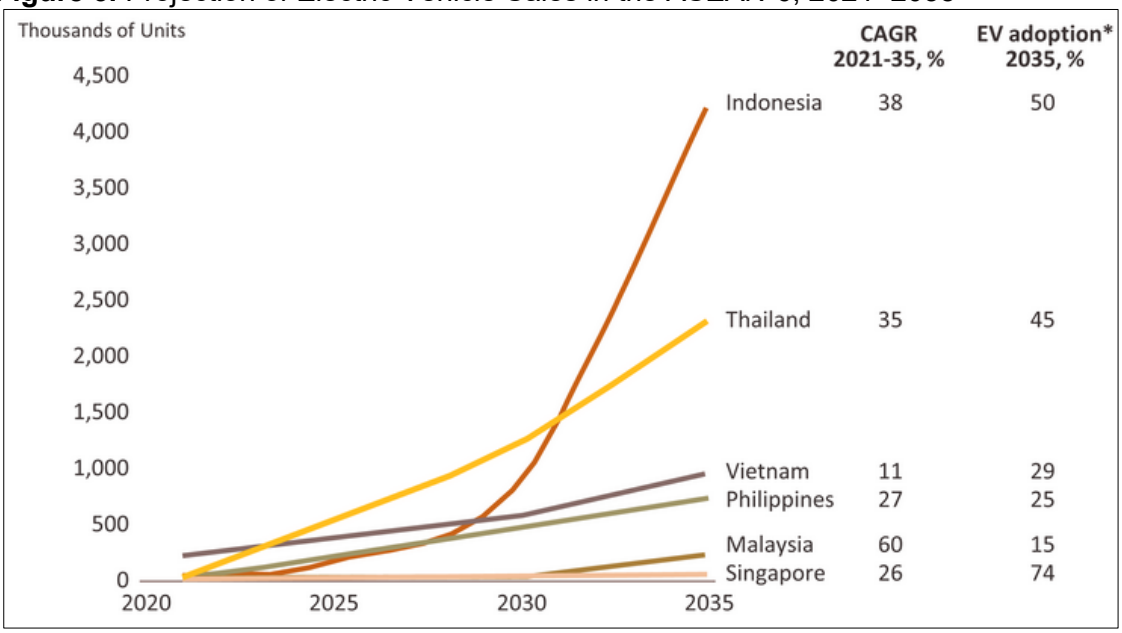


Source: International Energy Agency (IEA, 2024)

In ASEAN, Indonesia still ranks behind Thailand and Vietnam in terms of electric vehicle adoption, with Thailand being the largest user of electric vehicles (EVs) among ASEAN nations. On the other hand, Indonesia has shown growth between 2021 and 2023, although it remains behind other ASEAN nations. The potential for electric vehicle adoption in Indonesia is significant due to its large population. However, Indonesia's adoption of electric cars is comparatively slower than in several other ASEAN countries. EVs remain relatively new and require support from various parties to enhance public understanding and encourage the transition from conventional vehicles to electric ones.

Figure 3, a projection of electric vehicle usage in the six ASEAN countries, shows that Indonesia is forecasted to become the largest user among these nations. Electric vehicle users are projected to account for 50% of total electric vehicle sales in ASEAN countries by 2035. This projection indicated the tremendous potential for EVs in Indonesia in the coming years.

Figure 3. Projection of Electric Vehicle Sales in the ASEAN-6, 2021–2035



Source: EY-Parthenon (2024)

Indonesia, with a large number of private vehicle users and projected to rank first in ASEAN by 2035, with 50% of sales, does not align with the current state of electric vehicle adoption in the country, which remains very low compared to other ASEAN nations. Indonesia has experienced a slow adoption of EVs, which are the latest innovations in transportation that are considered more environmentally friendly and capable of mitigating the environmental impact of vehicle emissions (Astuti & Susanto, 2024; Hakam & Jumayla, 2024; Vargas-Merino et al., 2023).

Indonesia, despite its potential, lags behind in adopting EVs, which are more environmentally friendly and linked to the UN SGDs 12. Responsible consumption is supported by various stakeholders, including the government, by providing information to encourage the public transition from conventional vehicles to electric ones (Hakam & Jumayla, 2024).

To understand how esteem needs, cost savings, ease of use and infrastructure impact on attitude to use EVs and consequently on behavioral intention, is through research and data. The perceived usefulness of EVs and their perceived ease of use both create a positive attitude toward using EVs, and therefore influence a person's behavioral intention. EVs are technology-based solutions for countries such as US, Japan, Korea, China, Germany, and the growing number of other countries, which are employing EV to assist in the reduction of environmental degradation and fuel use that results in air pollution.

The deterioration of the environment and innovative improvements in technology have influenced the population increasing their awareness and wishes to make changes for improvement, while users of electric vehicles (EVs) experience a high-level of esteem, which will lead to reshaped attitudes and behaviours. The cost savings for users of EVs compared to traditional fuel-powered vehicles can be seen by users, which contributes to the motivation to switch from traditional vehicles to electric vehicles. Indonesia is developing and Improving its EV Charging Infrastructure (charging stations) to better service consumers who use EV's and to provide them with additional features/electric services. Ease of use of EVs is equally important because it aids in changing consumer attitudes about using EVs.

EVs have an additional social opportunity within Indonesia for analyzing the behaviour of consumers who adopt and use EVs, which is the socio-economic environment compared to the structural and policy environments. Consumers will often purchase based on social image, the perception of others within their peer group and their consumption for symbols of success within the socio-cultural environment of Indonesia's rapidly maturing economy and the increasing digital exposure most residents are experiencing. In addition, this socio-cultural environment may also enhance the esteem/motivational influence of esteem on consumers' decisions to adopt technology. Motivation for consumers who live in developing economies may have a stronger focus for social esteem and economic practicality, while consumers from developed countries have a greater focus on environmentalism and government regulation as the primary influences driving their decisions to adopt technology/emotional value. Therefore, the

Also, very few systematic comparisons have been made between internal psychological motivators (having esteem needs satisfied) external economic rationality (savings), and operational convenience (ease of use and infrastructure to support) in a combined framework; most previous publications on these topics have examined cost considerations and readiness of infrastructure separately from each other. Many

researchers studying electric vehicle (EV) purchases describe EV purchase behaviour as a single consumption category relating to both economic and social factors, while researchers have concentrated on the technical aspects related to the purchase decision. Consequently, researchers have not adequately identified the relationship between intrinsic versus extrinsic motivation toward EVs, thus failing to provide theoretical grounding for how intrinsic and extrinsic motivations interact and create attitude and intention toward purchasing an EV, particularly in developing countries where purchasing power and symbolic worth to others are both significant factors determining EV purchase.

The mediating role of an attitude is yet another limitation of previous studies. While the Technology Acceptance Model (TAM) supports the importance of an attitudinal component in the formation of people's intentions (Davis, 1989), there is currently not a lot of empirical evidence to promote this assertion in relation to Indonesia's electric vehicle industry. It is unclear how psychological and economic influences affect consumer intention as they either directly influence behavioural intention or predominantly through an evaluative attitude. In developing both theories and policies it is important to understand whether to primarily focus on shaping a person's beliefs/attitudes or if the principal intervention should be the way in which consumers evaluate themselves positively.

As countries around the globe move to more sustainable modes of transportation, EVs are being viewed as a solution by many countries to help reduce their environmental impact. EVs are increasing in popularity throughout the world, but their adoption rates are not the same across all countries; in particular, their adoption in developing countries such as Indonesia is relatively slow compared to their large population. Prior to this study, some of the previous research on EV adoption has focused primarily on technology and infrastructure readiness in various developing countries, but this study looks at both psychological motives for EV adoption and the economic implications of purchasing and operating an EV. The research presented in this paper provides new perspectives on how to increase EV adoption in the context of developing countries.

The study of EV adoption has examined both the practical function of EVs and the symbolic nature of EV ownership, as well as the economic implications associated with purchasing and operating an EV. The study of EV adoption in collectivist-oriented societies such as Indonesia will place a great deal of emphasis on how the use of vehicles such as EVs can provide status within society, as a vehicle is often an extension of an individual's social identity, and as a means of gaining recognition. As a multidimensional phenomenon, EV adoption reflects multiple variables including psychological, economic, and operational drivers. The combined theoretical and contextualized approach to EV adoption behavior presented in this research provides valuable insight into how policymakers may pursue EV adoption strategies, particularly in developing countries such as Indonesia.

LITERATURE REVIEW

Technology Acceptance Model (TAM) and Behavioral Intention of EVs

Research on consumer behavior related to attitudes toward using and the actual usage of technological products is widely conducted, often employing the TAM (Davis, 1989). The TAM and vehicle adoption provide an understanding of how perceived usefulness and perceived ease of use influence an individual's attitude toward technology, thereby generating the intention to adopt it. The TAM is widely recognized for explaining the

adoption of new technologies. This theory illustrates how TAM can account for an individual's willingness to use emerging technologies (Hakam & Jumayla, 2024).

The TAM primarily focuses on perceived usefulness and perceived ease of use, but theoretical developments extend the TAM theory. Many studies support the extension of perceived usefulness and perceived ease of use by incorporating other variables, including external research such as psychological and economic ones. In this case, consumers, when deciding to purchase an EV, not only consider perceived usefulness and perceived ease of use but also consider factors such as esteem needs (as a psychological factor) and cost savings (as an economic factor).

Although the TAM has been extensively validated in a variety of technological contexts, scholars are increasingly arguing that context-specific external variables can improve its explanatory power. Adoption decisions for sustainable technologies, like EVs, go beyond functional evaluations of utility and usability. EVs are frequently assessed by consumers as symbolic, economical, and lifestyle-related products in addition to technological advancements. Therefore, a more thorough explanation of EV adoption behavior is possible by extending TAM with psychological and economic constructs, especially in emerging markets where socio-economic and symbolic motivations may be more prominent.

Perceived usefulness does indeed describe function and performance, but it doesn't clearly account for the symbolic and economic aspects that are crucial for a developing country like Indonesia. This makes esteem needs and cost savings constructs that can be developed from an expanded TAM. Esteem needs reflect psychological aspects that describe a person's position in the social environment. Meanwhile, cost savings considers both costs incurred and benefits received. These different constructs represent a better model because they can capture the dual considerations in deciding to adopt an EV.

Hypotheses Development

Perceived Usefulness

The level or degree of trust an individual has in a technology can help them achieve desired goals through its use (Bolodeoku et al., 2022). The perceived usefulness of a technology refers to the extent to which it benefits an individual. New technologies, such as EVs, can enhance an individual's perceived usefulness. Owning an environmentally friendly vehicle that reduces emissions can also foster a sense of pride (Kim & Heo, 2019). EVs are also more economical to operate, enabling users to reduce expenses associated with electric vehicle use (Kayambazinthu, 2023).

EVs receive government subsidies, which help reduce costs for users and enhance their perceived usefulness (Jaiswal et al., 2021). Recent research indicates that usefulness in the EV context is multifaceted, encompassing functional, economic, and symbolic benefits, despite the fact that perceived usefulness typically reflects performance-related benefits. Other research shows the opposite, that the hedonic function and price value do not show any significant effect (Alamanda, D. T., Wibowo, L. A., Munawar, S., & Nisa, A. K., 2021). The psychological satisfaction from the adoption of an EV may enhance existing perceptions of perceived utility as well as establish the connection between esteem-based motivational factors and perceived utility for example, through the demonstration of sophistication and eco-friendliness as indicators of technological sophistication and environmental responsibility. The symbolisation of consumer's perceptions of an EV also remains an important part of the economic value of an EV's perceived utility within a developing economy. Many consumers will consider the cost-

benefit analysis when evaluating their decision to adopt EVs including evaluating fuel efficiency and savings (from long-term fuel savings, long-term maintenance cost, and government incentives). These perceived economic benefits of EV will influence consumers to develop positive evaluations towards EV adoption. Therefore, distinguishing esteem needs and cost savings as separate but complementary constructs provides a clearer theoretical explanation of how psychological and economic benefits independently and jointly shape attitudes. (Wong, X. A., Wong, Y. H., Xiang, M., & Xiao, H. X., 2024).

H1: There is a positive effect of esteem needs on attitudes toward using EVs.
H2: There is a positive effect of cost savings on attitudes toward using EVs.

Perceived Ease of Use

Perceived ease of use refers to the extent to which users believe using a technology will require less effort, thereby reducing the burden or difficulty for its users. Perceived ease of use of a technology increases when user-friendliness is enhanced, such as through supporting technological infrastructure (Shetty et al., 2020). The perceived ease of use of technologies, such as EVs, increases when charging stations are easily accessible and simple to use during the battery charging process (Saleh et al., 2024). On the other hand, if infrastructure such as a charging station is limited, the perceived ease of use can negatively impact users' perceived ease of use (Higueras-Castillo et al., 2020). Perceived ease of use increases as the technology becomes easier to operate, thereby minimizing the risks for its users (Xu et al., 2020).

In the context of EVs, both supporting infrastructure and technology design may have an impact on perceived ease of use. Infrastructure represents external environmental readiness, whereas ease of operation relates to individual interaction with the vehicle, such as charging simplicity, dashboard usability, and driving experience (Ooi, K. B., Lee, V. H., Tan, G. W. H., Hew, T. S., & Hew, J. J., 2022). Theoretically, it is crucial to distinguish between these two factors because attitudes may be influenced differently by external infrastructure availability and internal operational simplicity. The adoption of mobile communication technology in developing markets will depend on many factors, including availability of existing infrastructur and the degree to which these technologies provide an easy user experience. For example, early adopters of mobile phone technology may be less concerned with the availability of infrastructure than they are with the perceived ease of operation; whereas, during mass adoption, the lack of available infrastructure could present more challenges to technology use. As a result, testing both constructs at the same time helps to clarify how important each is in influencing attitudes toward EV use.

H3: There is a positive effect of infrastructure on attitudes toward using EVs.
H4: There is a positive effect of easy operation on attitudes toward using EVs.

Attitude Toward Using

Technology attitude as a form of perceived usefulness as well as perceived ease of use predicts an individual's perception and an individual belief about the technology use. (Buhmann et al., 2024; Kai-ming Au & Enderwick, 2000). The relationship between using an electric vehicle and an individual's attitude toward it has a positive effect on their intention to use an electric vehicle. (Jaiswal et al., 2021; Morton et al., 2016). The attitude toward the use of technology contributes to the development of perceived usefulness, perceived ease of use, and attitudes toward using electric vehicles. (Huang & Qian, 2021; Mohamed et al., 2016).

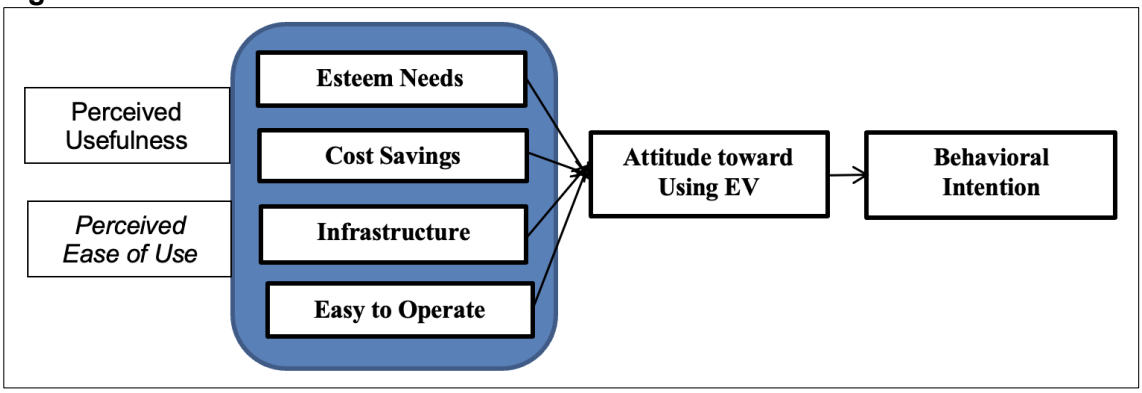
An evaluative response that incorporates cognitive beliefs, emotional responses, and general assessments is represented by an attitude toward technology use. Attitude is a key mechanism in TAM that converts perceptions into intended behavior (Wong, X. A., Wong, Y. H., Xiang, M., & Xiao, H. X., 2024). In addition to being an integral components of moral evaluation, moral values may also be expressed through attitudes related to sustainable consumption. Attitude development may therefore be more complex than merely providing a direct functional evaluation. Given the concurrent symbolic and environmental meanings associated with many products, the way an individual's attitude develops is likely dependent on the cultural and economic context in which that individual resides. Research has consistently shown that positive attitudes toward EVs are a good predictor of intention to adopt the technology; however, the strength of this relationship varies by country based on economic and cultural status. In nations with developing economies, attitudes have been shown to be especially susceptible to the economic factors associated with feasibility and social factors associated with recognition, indicating the need to investigate mediated effects within the framework of intentions to adopt EV technology.

H5a: There is a positive effect of attitude toward using EVs on behavioral intention.

H5b: Attitude toward using EVs positively mediates the relationship with behavioral intention.

Research Framework

Figure 4. Research Framework



RESEARCH METHOD

Research Design

Quantitative research design was employed for this study, which used a survey to collect data and measure esteem needs, cost savings, infrastructure, ease of operation, attitudes towards using EVs and behavioural intentions. A quantitative descriptive approach was used by the researcher to establish relationships between the variables.This researcher will use an explanatory research method to better understand the relationships and impacts between the variables using a statistical software programme.As a result of this research, the impact of various factors on the attitudes of Indonesian consumers and their resultant behavioural intentions to use EVs will be examined in order to provide an overview of sustainable consumption in Indonesia.

Population and Sampling

The participants in this research will be EV users in Indonesia with the intention of providing insight into their perceptions of EVs. The criteria used for purposive sampling included: must have purchased an EV, must have experience using an EV and must reside in Jakarta, must be 19 years of age or older, and must be willing to fill out a research questionnaire. The participant pool for this study will consist of 100 participants;

however, this sample size is small and serves as input for other studies which should utilize larger sample sizes.

Data Collection Procedure

Questionnaires were used to gather data for this study; the respondents had been identified prior to distribution of the questionnaire. Because this study is primarily concerned with quantitative data, primary data were provided by way of the questionnaire, and secondary data were obtained from other sources such as books, organizations, and journals.

Research Instrument

The goal of this study is to analyze the determinants of using a battery electric vehicle (BEV). The four constructs studied are esteem needs (related to social status), financial savings, available infrastructure, and ease of operation. An online questionnaire was used to collect the necessary data and was analyzed using Smart PLS from Version 2. The five-point Likert scale was used for questions related to esteem needs and for asking previous BEV owners how much money they save as a result of having an available infrastructure. The original dimensions of each construct were preserved in the final conceptual framework.

Table 1. Research Instrument

Variable	Items		Source
Esteem Needs	EN1	Electric cars is suitable for my lifestyle	Moons & De Pelsmacker (2015); White & Sintov (2017)
	EN2	would feel proud of driving an electric car	
	EN3	The electric car shows who I am	
	EN4	The electric car enhances my social status	
	EN5	Not everyone can have an electric vehicle	
Cost Savings	CS1	Driving EVs will help me spend less on fuel	He et al. (2018)
	CS2	Driving EVs will give me other government incentives	
	CS3	Driving EVs is cheaper than driving conventional car.	
	CS4	The equipment of EVs is not too expensive.	
Infrastructure	IN1	Intermediate charging stations are available within a 5-minute walk.	He, S. Y., Sun, K. K., & Luo, S. (2022)
	IN2	Charging at public stations is a hassle.	
	IN3	The number of charging stations in Indonesia is still very limited.	
	IN4	Charging stations are hard to find	
	IN5	Charging EVs can be done while parked at home	
Ease of Operation	EO1	I find EVs easier to maintain than gasoline or diesel vehicles.	Davis (1989)
	EO2	I rarely need help operating a smart electric vehicle.	
	EO3	I am able to use the features of a smart electric vehicle to meet my needs.	
	EO4	I find it easy to drive a smart electric vehicle anywhere I want.	
Attitude Toward Using EVs	AT1	For me, adopting an EV is extremely good	Ajzen (1991); Huang & Qian (2021)
	AT2	For me, adopting an EV is extremely wise	
	AT3	I am interested in EVs	

	AT4	EV is a necessity today	
Behavioral Intention	BI1	I will consider buying an electric car.	He et al. (2018); Moons & De Pelsmacker (2015)
	BI2	I expect to drive an electric car in the near future.	
	BI3	I intend to drive an electric car in the near future.	
	BI4	I will buy an electric car because good infrastructure.	
	BI5	I will buy an electric car because easy to operate.	

Data Analysis Technique

There are two sections to the presentation of the research results; the first section presents the demographic data that gives a description of the respondents' characteristics; the second section provides statistical analysis results that show how the variables were related to one another. The analysis utilized SmartPLS software as the primary means by which to analyse the data collected. The analysis of the data was split into two sections; the first being statistical tests and the second being the convergent validity of all measures used in this study. The statistical tests used were: a convergent validity test for each of the constructs, as defined by an outer loading of 0.7, or greater than 0.7, an Average Variance Extracted (AVE) greater than 0.5, and two tests of reliability, namely: Cronbach's Alpha and Composite Reliability (greater than 0.7) for all constructs. Path Coefficients, P-Values and Coefficients of Determination (R-SHO) for each of the measures were all analysed as well.

RESULTS

Demographic Results

Table 2. Demographic Results

Item		Frequency (N)	Percentage (%)
Gender	Female	56	56
	Male	44	44
Age (years old)	19 - 22	18	18
	23 - 26	28	28
	27 - 30	30	30
	31 - 34	14	14
	35 – 38	6	6
	39 – 42	2	2
	43 – 46	2	2
Income (IDR)	5.000.000 - 10.000.000	51	51
	10.000.001 - 15.000.000	28	28
	15.000.001 - 20.000.000	13	13
	20.000.001 - 25.000.000	4	4
	25.000.001 - 30.000.000	3	3
	30.000.001 - 35.000.000	0	0
	30.000.001 - 40.000.000	1	1
Education Level	Senior High School/Equivalent	3	3
	Diploma	1	1
	Bachelor's Degree	86	86
	Master's Degree	10	10
	Wuling	44	44

Electric Vehicle Brand	Build Your Dreams (BYD)	26	26
	Cherry	9	9
	Aion	3	3
	Alva	1	1
	BMW	1	1
	Hyundai	2	2
	Mg	1	1
	Mini Cooper	1	1
	Polytron	2	2
	Selis	1	1
	Tesla	2	2
	Toyota	4	4
	U-winfly	1	1
Country of Origin of EVs	China	86	86
	Jepang	4	4
	Inggris	2	2
	Indonesia	4	4
	Amerika	2	2
	Korea Selatan	2	2

Data demographic based on characteristics in Table 2 The percentage of female respondents is 56%, while the percentage of male respondents is 44%, which would imply that the majority of EV users are female; this is also supported by the distribution of the respondents' ages, where the majority (30%) of EV users fall between the ages of 27 - 30 years old. The next majority of age cohort (28%) are 23 - 26 years old and the third majority of age cohort (18%) are 19 - 22 years old. The least represented age cohorts of EV users are 31 - 34 years old (14%) and 35 - 38 years old (6%), respectively, making up 2% each of all of the respondents. Thus, the largest representational proportion of EV users are in the 23-30 age cohort, where the largest potential adoption rate is present from the majority of respondents.

The monthly income distribution of respondents shows that the largest number of respondents (51%) fall within the monthly income category of IDR 5,000,000 to IDR 10,000,000. Subsequently, 28% of respondents reported an income between IDR 10,000,001 and IDR 15,000,000, while 13% reported an income between IDR 15,000,001 and IDR 20,000,000. Collectively, the largest number (51%) of EV owners or drivers have monthly household incomes of between IDR 5,000,000 - IDR 10,000,000. As a result, the majority of potential purchasers of EVs are also in the lower and middle-class income ranges, which is likely to play a significant role in their decision to buy or lease an EV.

In terms of education level, shows that respondents have at least completed undergraduate education. The majority of respondents (86) hold a bachelor's degree (S1), 10% have completed a Master's degree (S2), 3% graduated from senior high school or its equivalent, and 1% hold a Diploma (D3). This indicated that respondents with a Bachelor/s degree are more likely to use EVs. In terms of the electric vehicle brand used, 44% of respondents chose Wuling, followed by 26% who preferred Build Your Dreams (BYD), and 9% who selected Chery. This indicates that Wuling is the most widely used electric vehicle brand among respondents. Out of 100 respondents, 92% reported using electric cars, 6% used electric motorcycles, and the remaining 2% used both types of vehicles.

Demographic data based on the country of origin of EVs show that a total of 86% of respondents use EVs originating from China, followed by 4% from Japan and 4% from Indonesia, while 2% of respondents each use EVs from the United Kingdom, the United States, and South Korea. This indicated that electric vehicle products from China are more favored by the respondents.

Validity Test

Validity testing is necessary to determine whether the questionnaire used to measure the research variables is valid. The variables in this study include esteem needs, cost savings, infrastructure, easy to operate, attitude toward using EV, and behavioral intention. A valid questionnaire indicates that the research variables can be accurately measured, whereas an invalid questionnaire suggests difficulties in measuring these variables. Validity testing consists of evaluating the measurement model.

Convergent Validity

The indicator limit is said to be valid if all indicators and latent variables have a minimum value of 0.7 or higher as a requirement.

Table 3. Outer Loading Results

	EN (X1)	CS (X2)	IN (X3)	EO (X4)	AT (Z)	BI (Y)
EN1	0.836					
EN2	0.814					
EN3	0.771					
EN4	0.790					
EN5	0.739					
CS1		0.806				
CS2		0.741				
CS3		0.798				
CS4		0.738				
IN1			0.709			
IN2			0.811			
IN3			0.761			
IN4			0.839			
IN5			0.712			
EO1				0.770		
EO2				0.709		
EO3				0.796		
EO4				0.835		
EO5				0.847		
AT1					0.845	
AT2					0.785	
AT3					0.791	
AT4					0.820	
BI1						0.847
BI2						0.840
BI3						0.858
BI4						0.787
BI5						0.819

Note: Esteem Needs (EN), Cost Savings (CS), Infrastructure (IN), Easy to Operate (EO), Attitude Toward Using EV (AT), Behavioral Intention (BI)

Table 3 As for each of the six factors: esteem needs, cost savings, infrastructure, ease-of-use, attitude towards using an EV, and behavioral intention, the loadings for the external factors were above 0.7, indicating that each of the questionnaire items (28 total questionnaires for 100 respondents) is valid for continued analysis with respect to their AVE scores (AVE > 0.5).

Table 4. AVE Score Results

	AVE Score
Esteem Needs (X1)	0.625
Cost Savings (X2)	0.595
Infrastructure (X3)	0.590
Easy to Operate (X4)	0.628
Attitude Toward Using EV (Z)	0.657
Behavioral Intention (Y)	0.690

Table 4 the average variance extracted (AVE) values for these variables in the current research fulfill the necessary minimum acceptable value of greater than .5. The AVEs found for the esteem, cost savings, infrastructure, ease of operation, attitude toward using electric vehicles (EV), and behavioral intention variables are .625, .595, .590, .628, .657, and .690 respectively. Thus, as all six of these variables exceed the threshold set for AVE, they can all be viewed as valid indicators of their underlying concepts.

Discriminant Validity

The square root of the AVE value assesses how each construct's indicators relate to the constructs themselves and how various constructs relate to one another by evaluating the discriminant validity of a model. In terms of construct-to-construct correlation, a model's discriminant validity is considered to be strong if there is an established square root of the AVE for each construct that exceeds its correlation with any of the other constructs in a given model. Discriminant validity is assessed by examining the construct cross-load values and determining the model's square root AVE.

Table 5. Fornell-Larcker Criterion Discriminant Validity

	AT (Z)	BI (Y)	CS (X2)	EO (X4)	EN (X1)	IN (X3)
AT (Z)	0.811					
BI (Y)	0.760	0.830				
CS (X2)	0.692	0.693	0.771			
EO (X4)	0.690	0.740	0.651	0.793		
EN (X1)	0.674	0.603	0.708	0.616	0.791	
IN (X3)	0.337	0.445	0.413	0.337	0.187	0.768

Note: Esteem Needs (EN), Cost Savings (CS), Infrastructure (IN), Easy to Operate (EO), Attitude Toward Using EV (AT), Behavioral Intention (BI)

Table 5 shows that each construct's AVE calculated coefficients were correlated with their own variable more than with other variables based on the square root of the AVE value. For example, the attitude toward using EV was greater than the correlations to the other variables, including behavioral intentions (.760), cost savings (.692), easy to operate (.690), esteem needs (.674), and infrastructure (.337). This observation holds true for the other variables as well (i.e., the square root AVE was greater than the inter-variable correlations). Therefore, the constructs included in the study of esteem needs, cost savings, infrastructure, ease of operation, attitude toward using EV, and behavioral intention possess measurement validity since the AVE square root value is greater than the correlation between them. Thus, the variables of interest have demonstrated high levels of discriminant validity as well as meeting all criteria for discriminant validity.

Moreover, measuring discriminant validity can also be conducted using cross-loading values associated with each indicator and construct.

Table 6. Cross Loading Results

	EN (X1)	CS (X2)	IN (X3)	EO (X4)	AT (Z)	BI (Y)
EN1	0.836	0.637	0.197	0.591	0.669	0.536
EN2	0.814	0.614	0.193	0.536	0.559	0.515
EN3	0.771	0.487	0.102	0.492	0.466	0.450
EN4	0.790	0.576	0.143	0.431	0.500	0.501
EN5	0.739	0.444	0.073	0.336	0.413	0.347
CS1	0.555	0.806	0.263	0.523	0.589	0.574
CS2	0.568	0.741	0.291	0.402	0.453	0.442
CS3	0.532	0.798	0.401	0.538	0.576	0.563
CS4	0.539	0.738	0.320	0.535	0.501	0.547
IN1	0.074	0.161	0.709	0.135	0.169	0.246
IN2	0.069	0.278	0.811	0.238	0.245	0.358
IN3	0.052	0.208	0.761	0.156	0.218	0.270
IN4	0.036	0.179	0.839	0.145	0.181	0.269
IN5	0.331	0.542	0.712	0.441	0.364	0.444
EO1	0.561	0.510	0.326	0.770	0.500	0.587
EO2	0.382	0.416	0.205	0.709	0.413	0.435
EO3	0.524	0.560	0.265	0.796	0.594	0.582
EO4	0.501	0.540	0.248	0.835	0.622	0.680
EO5	0.465	0.537	0.292	0.847	0.570	0.616
AT1	0.669	0.686	0.242	0.577	0.845	0.588
AT2	0.506	0.544	0.329	0.573	0.785	0.625
AT3	0.477	0.456	0.159	0.536	0.791	0.593
AT4	0.524	0.545	0.353	0.551	0.820	0.658
BI1	0.472	0.574	0.333	0.578	0.636	0.847
BI2	0.547	0.495	0.339	0.654	0.667	0.840
BI3	0.418	0.559	0.373	0.619	0.646	0.858
BI4	0.575	0.625	0.380	0.582	0.606	0.787
BI5	0.493	0.638	0.428	0.641	0.597	0.819

Note: Esteem Needs (EN), Cost Savings (CS), Infrastructure (IN), Easy to Operate (EO), Attitude Toward Using EV (AT), Behavioral Intention (BI)

The cross-loading values in Table 6 demonstrate that each item in the tables has a greater loading relationship with their respective constructs than with any other where item EN1 had an association of 0.772 with esteem needs. The correlations of EN1 with other constructs were lower and included: 0.637 with cost savings; 0.197 with infrastructure; 0.591 with easy to operate; and 0.669 with behavioral intention. Similarly, item EN1 has a strong relationship to its intended variable.

Other constructs' items have the same pattern where they have high cross-loadings with their own construct as compared to their cross-loadings with other constructs, resulting in scores greater than 0.7. Therefore, it can be assumed that discriminant validity has been reached. High loading scores among indicators representing latent constructs are indicative of those indicators being more strongly related to the latent variable to which they correspond than to any other latent construct.

Reliability Test

Reliability assessment attempts to determine how accurately and consistently an instrument measures a construct. It provides proof of the stability and dependability of the question items used in a questionnaire. The more stable and consistent the responses collected from respondents, the more reliable the questionnaire is treated. In the analysis of PLS-SEM, reliability can be assessed on constructs with reflective indicators in two ways. These ways are by using Composite Reliability or Cronbach's Alpha. If composite reliability and Cronbach's alpha exceed 0.7 threshold, then a construct is considered to be reliable.

Table 7. Reliability Test

	CA	CR
Attitude Toward Using EV (Z)	0.826	0.885
Behavioral Intention (Y)	0.887	0.917
Cost Savings (X2)	0.774	0.854
Easy to Operate (X4)	0.852	0.894
Esteem Needs (X1)	0.851	0.893
Infrastructure (X3)	0.833	0.878

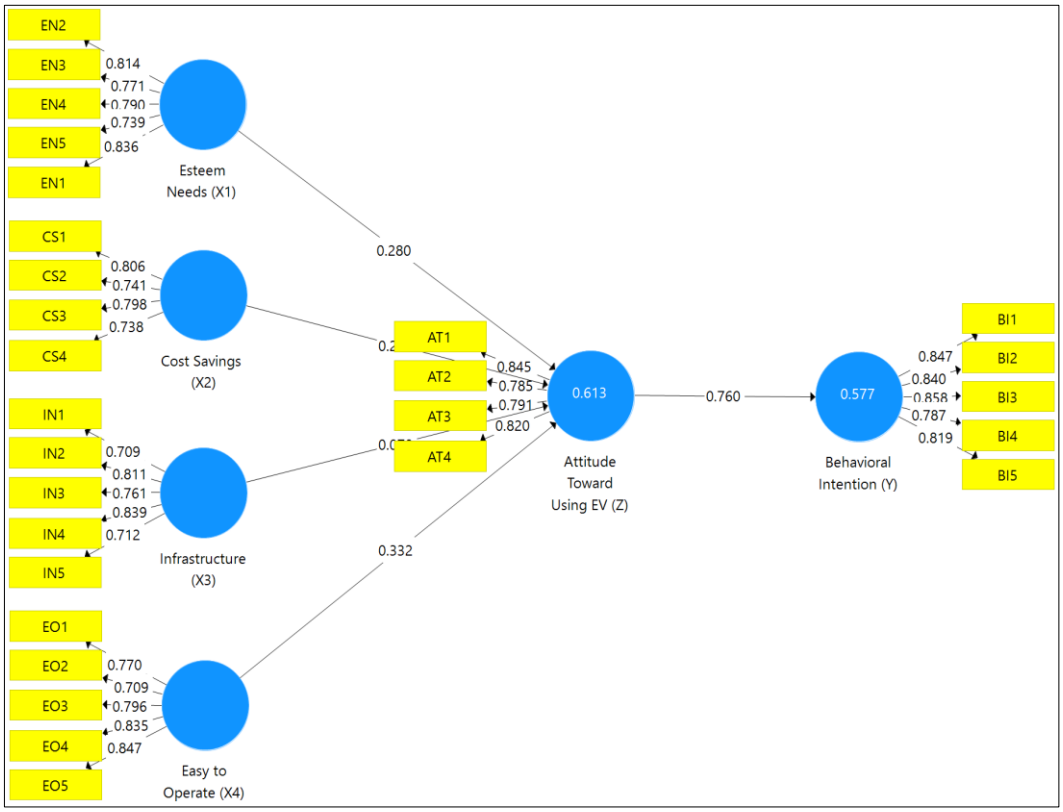
Table 7 The results reveal that all four variable's Cronbach's Alpha values and Composite Reliability values met the acceptable threshold (i.e., both exceed 0.70) and exhibit strong reliability based on their means. The behavioral intention construct has the largest Cronbach's alpha of 0.887 and Composite Reliability of 0.917 while cost savings has the smallest Cronbach's alpha of 0.740 and Composite Reliability of 0.854. Therefore, all of the questionnaire items have demonstrated a high degree of stability and consistency thus providing evidence of sufficient reliability for all six constructs included in this study.

Path Coefficient

In this section, the testing of the hypotheses proposed in the study (H1, H2, H3, H4, H5, H6, H7, H8, and H9) is described. An additional diagram representing the hypothesized relationships in the study is provided.

Figure 5. Research Model

International Journal of Applied Business & International Management (IJABIM)
Vol. 11 No. 1, pp. 224-241, April, 2026
E-ISSN: 2621-2862 P-ISSN: 2614-7432
https://www.ejournal.aibpmjournals.com/index.php/IJABIM



Based on Figure 5, Hypothesis testing is a necessary step in order to empirically verify the hypotheses. The statistical test will determine whether there is a statistically significant effect of each of the variables based upon the bootstrapping/parameter coefficient/T-statistics methods. The outcome of hypothesis testing will establish the relationships between the variables as defined within the hypotheses. There are two criteria used to affirm that the hypotheses are accepted or rejected. The p-value must be statistically less than 0.05 and the T-statistic must be greater than 1.96 to create an accepted hypothesis. The opposite would have to be true for a rejected hypothesis in that the p-value must be statistically greater than 0.05 and/or the T-statistic must be less than 1.96; meaning there is no significant relationship established.

Hypotheses Testing

Table 8. Path Significance Tests

Hypothesis		OS	T-Statistics	P-Values	Conclusion
H1	EN (X1) -> AT(Z)	0.280	2.108	0.035	Accepted
H2	CS (X2) -> AT(Z)	0.248	2.181	0.029	Accepted
H3	IN (X3) -> AT (Z)	0.070	0.915	0.360	Rejected
H4	EO (X4) -> AT (Z)	0.332	2.424	0.015	Accepted
H5	AT (Z) -> BI (Y)	0.760	10.805	0.000	Accepted
H6	EN (X1) -> AT EV (Z) -> BI (Y)	0.213	2.277	0.023	Accepted
H7	CS (X2) -> AT(Z) -> BI (Y)	0.189	2.047	0.041	Accepted
H8	IN (X3) -> AT (Z) -> BI (Y)	0.053	0.902	0.367	Rejected
H9	EO (X4) -> AT (Z) -> BI (Y)	0.252	2.143	0.032	Accepted

According to Table 8, Esteem needs affect one's willingness to use electric vehicles. The original score for how esteem needs impact users' willingness is 0.280 (signifying a positive effect). The T-statistic obtained is 2.108, which is greater than the threshold T-

statistic of 1.96 (meaning it is greater than 0). Additionally, the p-value obtained for esteem needs is .035 (< 0.05), which means that esteem needs have a significant (positive) effect on EV users' willingness to purchase an electric vehicle; therefore, H1 is accepted.

The score for how cost savings affect users' willingness to purchase an EV is 0.248. The T-statistic obtained is greater than the threshold at 2.181 (greater than 1.96), and the p-value obtained for cost savings is 0.029 (which is less than 0.05), indicating a significant (positive) relationship; thus, H2 is accepted. Lastly, the infrastructure score with respect to users' willingness to purchase an EV is 0.070, indicating a positive effect. However, the T-statistic obtained (0.915) is less than the threshold T-statistic of 1.96 (negative effect), and the infrastructure p-value obtained is 0.360 (meaning no significant effect on users' willingness to purchase an EV). Therefore, H3 is rejected.

The easy to operate attribute describes a positive relationship with EVs of 0.332 and being above the t-value threshold of > 1.96 at a t-statistic of 2.424 have a statistical significance of a p-value of .015 supporting hypothesis 4 being accepted. An attitude towards EVs of 0.760 indicates a positive relationship and the t-statistic of 10.805 > 1.96 and p-value of .000 demonstrates that the attitude towards using EVs supports the hypothesis 5 being accepted.

The indirect effect of esteem needs on the behavioral intention through attitude toward using EVs is 0.213 which indicates a positive relationship, with a t-statistic of 2.277 > 1.96 having a p-value of .023 this indicates that the esteem needs mediates the behavioral intention variable within the attitude towards using EVs therefore supporting hypothesis 6. The indirect effect of cost savings on the behavioral intention through attitude toward using EVs is 0.189 indicating a positive relationship, with a t-statistic of 2.047 > 1.96 having a p-value of .041, indicating that the cost savings on the behavioral intention through attitude towards EVs is statistically significant and therefore supports hypothesis 7.

There was no evidence of a connection between infrastructure and behavioral intention through attitude toward using EVs, and thus H8 was rejected. However, the relationship between easy operation and behavioral intention through attitude toward using EVs was demonstrated to be statistically significant, with the T-stat of 2.143 and P < 0.032, leading to the acceptance of H9. This indicates that the decision for Indonesia to adopt EVs will, in part, stem from internal, as opposed to external, influences and therefore, psychological and economic influences should be considered.

R-Square

The next step of the analysis uses the the R-Squared test. The R-Squared test computes the R-Squared value for the latent variables in order to assess how well the model fits the data. The R-Squared score will support the degree of substantive effect that each of the exogenous latent variables has upon the endogenous latent variables. The statistic of R-Squared will indicate to what degree the variance of the dependent variables can be accounted for by the independent variables. The results from the R-Squared test will statistically determine if the model in this study has a strong (R-Squared value >= 0.75), moderate (R-Squared value between 0.26 - 0.74), or weak (R-Squared value <= 0.25) goodness of fit.

Table 9. R-Square

	R-Square
Attitude Toward Using EV (Z)	0.613

Behavioral Intention (Y)	0.577

According to Table 9's R-Squared results, there is a significant relationship between esteem needs, cost savings, infrastructure and ease of use, and the attitude toward using EV (0.613), while the remaining 38.7% of variance in this variable is due to factors not included in this study. In addition, the collective effect of esteem needs, cost savings, infrastructure, ease of use, and attitude toward using EV on behavioral intentions can be measured as 0.577, with the other 42.3% of variance also explained by exterior variables. The correlations defined above can be described as moderate.

DISCUSSION

Results show that esteem needs significantly influence people's attitudes towards EVs. Those who view owning an EV as a status symbol, prestige or personal success will likely have a more positive attitude toward using EVs. In psychology, esteem needs relate to wanting to be recognized and respected and accomplish something; with EVs providing modernity, environmental benefits and new technologies, they can fulfill these needs and therefore encourage a positive attitude toward EV usage. The statistical data support the significance of this association, leading to acceptance of the first hypothesis of this study. The results of this study also show that marketing strategies highlighting the innovative and prestigious image of EVs will likely result in an increase in the positive attitude of people toward using EVs. Evidence from this study supports a positive relationship between esteem needs, social image and symbolic value, and attitudes toward EV adoption. Additionally, the motivation to adopt EVs is also affected by esteem needs forming a powerful motivation for those living in developing markets, such as Indonesia, as recognition of social status is very important.

There is also a positive and significant effect on individual attitudes towards the adoption of electric vehicles (EVs) from cost savings, as shown by statistical analysis supporting the acceptance of the second hypothesis. This means that when consumers perceive clear economic benefits to adopting EVs (e.g., reduced fuel costs, lower maintenance costs and possible government incentives), they will have more favourable views about using EVs. Financial considerations are frequently a major factor in technology adoption, therefore when consumers believe that EVs will result in long-term economic savings, their attitude will be more positive. Thus, it is not only necessary to communicate the environmental advantages of EVs but also to promote the financial practicality of purchasing an EV, to assist government and manufacturers to better support adoption intention by providing subsidy programs, tax credits or transparent cost comparisons that illustrate long-term savings. This research showed consistently that economic considerations play a significant role in adopting EVs, and therefore extend this research, as economic factors will be key in people's decision-making process for obtaining EVs in developing nations.

The findings related to the influence of infrastructure on EV usage indicate that it has somewhat of an influence but likely will not lead to significant changes in attitude and therefore the third hypothesis is not confirmed mathematically. Respondents may not have placed much importance on the availability of infrastructure as a contributing factor to their attitude or the conditions of the infrastructure in the context studied may have been fairly similar from one location to another, limiting the ability for the explanatory potential of the data. Additionally, respondents may have been anticipating improved infrastructure in the future which reduces the immediate impact it has on their impressions of EV's. While the results did not generate a statistically significant result,

infrastructure is an important factor in the real world and future research may examine its effect on the adoption of EV's in different geographic or policy contexts.

Moreover, the ease of operating the EVs positively influences attitudes toward using EVs and an analysis of the statistical evidence provides support for this hypothesis, thereby confirming the fourth hypothesis has been accepted. The implications of this finding indicate that when people view the EVs as being easy to operate, simple to recharge, and innovative in their use, there is an increased chance of developing an overall positive attitude towards the EVs. The ease of operation reduces the perceptions of complexity and the uncertainty that typically act as barriers to the acceptance of new technologies. As consumers believe that they can use the EVs without extensive procedures or special expertise, their confidence will improve, resulting in even greater positive evaluations of EVs. This finding provides support for the many theories of technology acceptance that cite the perceived ease of use as a primary determinant in forming attitudes toward, and the actual adoption of, new technology.

The results show that there is considerable confidence that having a positive attitude towards driving and owning an electric vehicle (EV) will lead to more of a heightened intention to drive and use an EV than those who do not have a positive attitude towards it; therefore, having a positive attitude and being positively supported will increase the likelihood of using an EV. This supports hypothesis five and suggests that an attitude is an important factor in predicting "if" people will purchase and drive an EV. In other words, having a positive attitude towards the concept of driving and owning an EV can be considered a central psychological factor converting "what" you perceive and "how" you will evaluate it into "what" you will do with the perceived benefits, either now or in the future. When an individual evaluates the electric vehicle market as being "good" (for whatever reason, such as to appease their needs, to save money, and/or to have greater ease of access), they are much more likely to "consider" purchasing or driving an EV. This reiterates the theoretical model describing that the individual's attitude towards driving and owning an EV is a direct indicator of their likelihood to adopt that technology.

In regard to indirect effect, esteem has a very strong influence on behavioral intention through the attitude toward using EV’s, in that attitude acts as a mediator in this relationship. Therefore, the sixth hypothesis is supported. That is, esteem or desire for esteem and status does not directly create behavioral intention, rather it creates intention by firstly influencing how the individual evaluates EV’s. The strength of the mediation effect emphasizes the significant influence of the attitudes as an intermediary mechanism between motivational factors and behavioral outcomes.

Cost savings as well, also exert an indirect effect on behavioral intention through the attitude, thus supporting the seventh hypothesis. In this instance, the economic aspect mainly shapes behavioral intention, again through the establishment of a more favorable attitude towards EV’s, rather than having a direct effect. Therefore, individuals that know there are cost savings associated with the purchase of an EV have a more favorable evaluation of EV’s than those individuals without that knowledge, thus reinforcing their intention to purchase an EV. This again is evidence that rational cost/benefit evaluations may be internalised through an attitudinal process prior to leading to intention.

Despite being statistically relevant, infrastructure does not exert a noticeable impact on behavioral intentions through the formation of attitudes; hence the eighth hypothesis was rejected. The results suggest that, under the conditions set forth by this research, infrastructure was not a determining factor in the development of either attitudes or behavioral intentions from a psychological perspective. Although infrastructure may still

have components that are relevant to practical use, its statistical insignificance suggests that the formation of behavioral outcomes will be influenced by other less visible perceptual and/or motivational factors.

Conversely, ease of operation has a statistically significant indirect effect on behavioral intentions through attitudes and therefore supports the ninth hypothesis (showing that attitudes mediate the relationship between operational ease and/or behavioral intention). This indicates that ease of operation is extremely important to increase consumers' propensity to adopt electric vehicles. When consumers perceive electric vehicles to be easy to operate, they develop positive attitudes towards them; thus increasing their intent to use them. Furthermore, the mediated relationship between operational ease and consumers' intent to adopt electric vehicles suggests that reducing perceived operational complexity is beneficial for both improving attitudes and increasing future commitments to use electric vehicles.

According to the R-square analysis conducted, the variables considered in the study on attitude and intention towards electric vehicle (EV) use and related behaviour, esteem need, cost saving, infrastructure, and ease of use, had moderate influences on attitude towards EV use. The remaining variance was attributed to factors that are not part of the model; therefore, while the variables in the model are important for helping us understand attitude, there may be other significant factors influencing attitude such as environmental concern, social influence, government policy, technological trust, or personal value. This is very similar in that the original variables and attitude, both have moderate effects on intention to engage in behaviour; thus, while the model explains a large part of the variance on intention, there may also be other variables not included in the present study that also influence intention. Our results lend themselves to future research where the model could be expanded upon with other psychological, social, and environmental variables to further develop a complete understanding of EV adoption behaviour.

The conclusions of this research indicate that the central role that attitudes play in mediating the impact of both motivation and practical factors on behavior intention has been proven by empirical support from this study's findings. The intrinsic motivations, for example self-esteem needs, and the practical reasons to evaluate EV's such as saving money, and ease of use, are important in forming a positive evaluation of EV's, and thus influencing an intention to purchase EV's. The limited role of the infrastructure in this model suggests that in the current context, psychological perceptions may play a greater role in influencing adoption intentions than structural considerations.

CONCLUSION

As electric vehicles (EVs) become more widely used, it is important to analyze how various factors affect the perceptions and behaviors associated with EV use. This is highlighted by the results of Hypothesis 1, which indicate that esteem needs positively and significantly influence attitudes towards the use of EVs. In particular, those who place value on prestige are likely to feel positively about EVs. In addition to esteem needs, financial factors play a significant role in influencing attitudes towards EV use, as demonstrated by the results of Hypothesis 2. Specifically, people are motivated to feel positively about EVs because they provide financial savings over time compared with conventional vehicles, which creates a favorable opinion about EVs and an intention to adopt them in the future.

The results of Hypothesis 3 indicate that infrastructure has little impact on people's attitudes about using electric vehicles (EVs). Although charging stations, as well as auxiliary support systems, matter to drivers of EVs, they are not the primary factors

influencing their willingness to purchase or use an electric vehicle. This may be due to the fact that many of the participants taking part in this study are considered 'early adopters' of EVs. Many of the individuals respond positively to purchasing an EV for the simple reason that it represents their personal values and economic advantage over time, regardless of whether there is adequate infrastructure in place for charging stations. According to Hypothesis 4, ease of operation has both a significant and positive effect on attitudes toward using electric vehicles. This indicates that the more an individual finds an electric vehicle easy to operate, the more positively they are likely to perceive the EV adoption process.

The effect of attitude on behavioral intentions to adopt electric vehicles (EV) was analyzed in hypothesis 5, where it was found that positive attitudes towards using EVs greatly influence intention to purchase EVs. The next hypothesis (6) went on to demonstrate that esteem needs also significantly affect behavioral intentions to adopt EVs, and that those individuals who perceive that adopting EVs brings about additional social status will form positive attitudes toward EVs and increase their intention to adopt them; hence, there is a mediating effect of attitude between esteem-based motivations and behavioral outcomes in relation to adoption of EVs.

Respondents who perceive cost savings from EVs also tend to develop favorable attitudes toward EVs and therefore are more likely to have a strong intention for adoption, consistent with hypothesis 7 that states that cost savings from EV use positively influence behavioral intention through attitudes toward EV usage. Conversely, in hypothesis 8, infrastructure was not found to have a significant affect on behavioral intention through an individual’s attitude towards using EVs. Respondents appear to perceive infrastructure as a concern once they decide to adopt EVs rather than when they make their decision to adopt EVs.

The results of Hypothesis 9 confirm that usability is an important factor in the adoption process. Ease of operation has a significant positive influence on behavioral intention to adopt an electric vehicle (EV) through attitude toward the use of EV. Hence, when respondents perceive the EV as easy and convenient to use, they will form positive attitudes toward the use of EVs that will contribute to a greater willingness to adopt an EV.

As a practical implication for EV manufacturers and marketers, they should not only focus on promoting environmental benefits use of EVs but should also develop strategies to meet consumers' esteem-based needs. Promotional efforts should highlight EVs' prestige and innovative features, as well as their association with a modern lifestyle. Long-term cost savings (e.g., reduced fuel and maintenance costs) could further strengthen positive attitudes toward EVs if manufacturers and marketers provide clear and transparent communication about these aspects. Finally, enhancing the use of easy-to-use and operate features could improve consumer confidence in EV technology. Among influencing the perception of consumers, these types of strategies may have a more direct impact than simply expanding the infrastructure.

Evidence from this study indicate that public campaigns to promote electric vehicle (EV) uptake should attempt to pair incentives for financial benefit with stories about the EV as being both progressive and socially desirable. The longer-term will require more infrastructure, however, financial incentives, subsidies, and awareness-raising campaigns that highlight both symbolic and financial benefits will better support early-stage EV adoption than infrastructure considerations. There are also opportunities for

policy intervention to support government action toward EV adoption by creating balance between economic viability and psychological attractiveness.

Despite its implications, this study has a number of limitations. First, the results obtained through purposeful sampling may not generalize to other populations due to the relatively small sample. The second study limitation is due to its cross-sectional design; the cross-sectional approach does not take into account changes in attitudes toward EVs that may occur as infrastructure or policy environments change, because the study is designed to measure perceptions at one point in time. Lastly, several other factors that may have been helpful (e.g., environmental concern, social influence, perceived risk, and trust in government) to study participants were not included in the model, which is confined to specific psychological, economic, and operational variables.

A more thorough understanding for EV adoption behaviour can be achieved through broadening additional variables included in future studies by adding more variables related to institutional factors or sociocultural factors. During longitudinal studies, an examination of how attitudes and intentions will vary as the infrastructure continues to develop and the marketplace matures. Motivational drivers for EVs may also differ depending on the contextual level of the geographical area through the use of comparative studies among ASEAN nations. The use of income based segmentation or generational differences could also provide insight into promotion strategies focused on EVs.

Ultimately, in order to achieve the goal of increasing EV adoption in Indonesia, an understanding of the consumer psychology, economic and attitudinal factors along with the technological readiness of consumers will be critical. Together these elements provide a greater framework for understanding the potential adoption of sustainable mobility within emerging markets.

LIMITATION

The small sample size used in this study may have altered the outcome of the study findings. Therefore, additional studies will need to be conducted with significantly larger samples and with different variables than those used in this study. Additionally, longitudinal studies and cross-country comparisons may also provide some insight into the factors that influence EV adoption.

ACKNOWLEDGMENT

We express our appreciation to all the respondents who took part in this research, the colleagues that helped improve it, and the Faculty of Social and Political Sciences at Universitas Diponegoro for providing funding. We would like to convey our deepest appreciation to the Dean and staff for their support during the entire research process and for completing this paper.

DECLARATION OF CONFLICTING INTERESTS

The authors declare that there is no conflict of interest between us, the authors, and the publisher of this article, during the research and publication process.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211. https://doi.org/10.1016/0749-5978(91)90020-T

Alamanda, D. T., Wibowo, L. A., Munawar, S., & Nisa, A. K. (2021). The interest of technology adoption in e-commerce mobile apps using modified unified theory of acceptance and use of technology 2 in Indonesia. International Journal of Applied Business and International Management, 6(3), 35-45. https://doi.org/10.32535/ijabim.v6i3.1327

Albitar, K., Al-Shaer, H., & Liu, Y. S. (2023). Corporate commitment to climate change: The effect of eco-innovation and climate governance. *Research Policy*, *52*(2), 104697. https://doi.org/10.1016/j.respol.2022.104697

Astuti, R. D., & Susanto, A. A. (2024). Challenges of electric vehicle adoption in Indonesia: Revealing the hidden factors affecting purchase intention. *Jurnal Siasat Bisnis*, 28(2), 149–171. https://doi.org/10.20885/jsb.vol28.iss2.art2

Bolodeoku, P. B., Igbinoba, E., Salau, P. O., Chukwudi, C. K., & Idia, S. E. (2022). Perceived usefulness of technology and multiple salient outcomes: The improbable case of oil and gas workers. *Heliyon*, *8*(4). https://doi.org/10.1016/j.heliyon.2022.e09322

Buhmann, K. M., Rialp-Criado, J., & Rialp-Criado, A. (2024). Predicting consumer intention to adopt battery electric vehicles: Extending the theory of planned behavior. *Sustainability*, *16*(3), 1284. https://doi.org/10.3390/su16031284

Chan, S., Weitz, N., Persson, A., & Trimmer, C. (2018). SDG 12. Sustainable consumption and production - A review of research needs. *Technical Annex to the Formas Report Forskning För Agenda 2030: Översikt Av Forskningsbehov Och Vägar Framåt. Stockholm Environment Insitute, Stockholm*, 1–25. https://www.un.org/sustainabledevelopment/sustainable-consumption-production/

CNBC Indonesia. (2023). Number of motorcycle-using households (AISI Survey). https://www.cnbcindonesia.com/research/20240915124228-128-571982/indonesia-tak-no-1-ini-deretan-negara-pengguna-motor-terbanyak

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319-340. https://doi.org/10.2307/249008

Effendi, A. A., Lew, T. Y., Ooi, W. N., P'ng, S. S., Poh, M. S., Balqis, P. H., …, & Kee, D. M. H. (2025). Consumer attitude and intention toward AI-based smart ordering and delivery systems in the fast-food industry. International Journal of Applied Business & International Management, 10(3), 464-480.

EY-Parthenon. (2024). ASEAN-6 EV market overview. https://www.ey.com/en_id/insights/strategy/how-to-seize-opportunities-across-southeast-asias-ev-value-chain#:~:text=Thanks%20to%20favorable%20government%20policies,39%25%20between%202021%20and%202035.

Guo, W., & Kim, E. (2023). Categorizing Chinese consumers' behavior to identify factors related to sustainable clothing consumption. *Sustainability*, *15*(7), 6126. https://doi.org/10.3390/su15076126

Haider, M., Shannon, R., & Moschis, G. P. (2022). Sustainable consumption research and the role of marketing: A review of the literature (1976–2021). *Sustainability*, *14*(7), 3999. https://doi.org/10.3390/su14073999

Hakam, D. F., & Jumayla, S. (2024). Electric vehicle adoption in Indonesia: Lesson learned from developed and developing countries. *Sustainable Futures*, *8*, 100348. https://doi.org/10.1016/j.sftr.2024.100348

He, S. Y., Sun, K. K., & Luo, S. (2022). Factors affecting electric vehicle adoption intention. *Journal of Transport and land use*, *15*(1), 779-801.

He, X., Zhan, W., & Hu, Y. (2018). Consumer purchase intention of electric vehicles in China: The roles of perception and personality. *Journal of Cleaner Production*, *204*, 1060-1069. https://doi.org/10.1016/j.jclepro.2018.08.260

Higueras-Castillo, E., Kalinic, Z., Marinkovic, V., & Liébana-Cabanillas, F. J. (2020). A mixed analysis of perceptions of electric and hybrid vehicles. *Energy Policy*, *136*, 111076. https://doi.org/10.1016/j.enpol.2019.111076

Huang, Y., & Qian, L. (2021). Consumer adoption of electric vehicles in alternative business models. *Energy Policy*, *155*, 112338. https://doi.org/10.1016/j.enpol.2021.112338

Huu, D. N., & Ngoc, V. N. (2021). Analysis study of current transportation status in Vietnam's urban traffic and the transition to electric two-wheelers mobility. *Sustainability*, *13*(10), 5577. https://doi.org/10.3390/su13105577

International Energy Agency (IEA). (2024). *Global EV Outlook 2024: Moving towards increased affordability*. IEA. https://www.iea.org/reports/global-ev-outlook-2024

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

Kai-ming Au, A., & Enderwick, P. (2000). A cognitive model on attitude towards technology adoption. *Journal of Managerial Psychology*, *15*(4), 266-282. https://doi.org/10.1108/02683940010330957

Kayambazinthu, M. S. (2023). Demystifying customer perception of electric vehicle adoption in South Africa using the technology acceptance model. *Проблемы экономики*, (4 (58)), 32-40. https://doi.org/10.32983/2222-0712-2023-4-32-40

Kim, E., & Heo, E. (2019). Key drivers behind the adoption of electric vehicle in Korea: An analysis of the revealed preferences. *Sustainability*, *11*(23), 6854. https://doi.org/10.3390/su11236854

Mohamed, M., Higgins, C., Ferguson, M., & Kanaroglou, P. (2016). Identifying and characterizing potential electric vehicle adopters in Canada: A two-stage modelling approach. *Transport Policy*, *52*, 100-112. https://doi.org/10.1016/j.tranpol.2016.07.006

Moons, I., & De Pelsmacker, P. (2015). An extended decomposed theory of planned behaviour to predict the usage intention of the electric car: A multi-group comparison. *Sustainability*, *7*(5), 6212-6245. https://doi.org/10.3390/su7056212

Morton, C., Anable, J., & Nelson, J. D. (2016). Exploring consumer preferences towards electric vehicles: The influence of consumer innovativeness. *Research in Transportation Business & Management*, *18*, 18-28. https://doi.org/10.1016/j.rtbm.2016.01.007

Ooi, K. B., Lee, V. H., Tan, G. W. H., Hew, T. S., & Hew, J. J. (2022). Case study of successful utilization of digital technology in business. International Journal of Applied Business & International Management.

Pirmana, V., Alisjahbana, A. S., Yusuf, A. A., Hoekstra, R., & Tukker, A. (2023). Economic and environmental impact of electric vehicles production in Indonesia. *Clean Technologies and Environmental Policy*, *25*(6), 1871-1885. https://doi.org/10.1007/s10098-023-02475-6

Saleh, H. N., Maupa, H., & Sadat, A. M. (2024). Examining the factors influencing the intention to buy an electric vehicle. *International Journal of Application on Economics and Business*, *2*(2), 3574-3585. https://doi.org/10.24912/ijaeb.v2i2.3574-3585

Shetty, D. K., Shetty, S., Raj Rodrigues, L., Naik, N., Maddodi, C. B., Malarout, N., & Sooriyaperakasam, N. (2020). Barriers to widespread adoption of plug-in electric vehicles in emerging Asian markets: An analysis of consumer behavioral attitudes and perceptions. *Cogent Engineering*, *7*(1), 1796198. https://doi.org/10.1080/23311916.2020.1796198

Vargas-Merino, J. A., Rios-Lama, C. A., & Panez-Bendezu, M. H. (2023). Sustainable consumption: conceptualization and characterization of the complexity of "being"

a sustainable consumer—A systematic review of the scientific literature. *Sustainability*, *15*(10), 8401. https://doi.org/10.3390/su15108401

White, L. V., & Sintov, N. D. (2017). You are what you drive: Environmentalist and social innovator symbolism drives electric vehicle adoption intentions. *Transportation Research Part A: Policy and Practice*, *99*, 94-113. https://doi.org/10.1016/j.tra.2017.03.008

Wong, X. A., Wong, Y. H., Xiang, M., & Xiao, H. X. (2024). Factors influencing customers' online shopping behaviour: A study of an e-commerce in Malaysia. International Journal of Tourism & Hospitality in Asia Pacific, 7(1), 39-55.

Xu, G., Wang, S., Li, J., & Zhao, D. (2020). Moving towards sustainable purchase behavior: examining the determinants of consumers' intentions to adopt electric vehicles. *Environmental Science and Pollution Research*, *27*(18), 22535-22546. https://doi.org/10.1007/s11356-020-08835-9

Yang, C., Tu, J. C., & Jiang, Q. (2020). The influential factors of consumers' sustainable consumption: A case on electric vehicles in China. *Sustainability*, *12*(8), 3496. https://doi.org/10.3390/SU12083496

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International Journal of Applied Business & International Management (IJABIM)
Vol. 11 No. 1, pp. 224-241, April, 2026
E-ISSN: 2621-2862 P-ISSN: 2614-7432
https://www.ejournal.aibpmjournals.com/index.php/IJABIM