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Electric Vehicle Adoption in Jabodetabek: The Impact of Infrastructure, Cost, and Perceived Value

Adopsi Kendaraan Listrik di Jabodetabek: Dampak Infrastruktur, Biaya, dan Nilai Yang Dirasakan

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Abstract

This research investigates the primary factors affecting consumers' intention to adopt electric vehicles (EVs) in the Jabodetabek region of Indonesia. This research analyzed data from 188 participants using a quantitative method through PLS-SEM. The model integrates the Theory of Planned Behavior (TPB), the Perceived Value (PERVAL) framework, and several contextual factors. The results show that perceived quality and price value significantly affect attitudes, while charging station availability and resale value directly influence adoption intention. Interestingly, attitude, subjective norms, and perceived behavioral control were not significant predictors. The findings suggest that in emerging markets, practical and economic concerns outweigh psychological or emotional drivers. These insights offer guidance for policymakers and businesses to focus on infrastructure development and value-enhancing strategies to accelerate EV adoption.

Keywords: Charging Infrastructure, Emerging Market, Perceived Value, Theory of Planned Behavior, Vehicle Adoption.

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Abstrak

Penelitian ini menyelidiki faktor-faktor utama yang memengaruhi niat konsumen untuk mengadopsi kendaraan listrik (EV) di wilayah Jabodetabek, Indonesia. Penelitian ini menganalisis data dari 188 partisipan menggunakan metode kuantitatif melalui PLS-SEM. Model ini mengintegrasikan Theory of Planned Behavior *(TPB), kerangka kerja* Perceived Value *(PERVAL), dan beberapa faktor kontekstual. Hasil menunjukkan bahwa persepsi kualitas dan nilai harga secara signifikan memengaruhi sikap, sedangkan ketersediaan stasiun pengisian daya dan nilai jual kembali secara langsung memengaruhi niat adopsi. Menariknya, sikap, norma subjektif, dan persepsi kontrol perilaku bukanlah prediktor yang signifikan. Temuan menunjukkan bahwa di pasar negara berkembang, pertimbangan praktis dan ekonomi lebih besar daripada pendorong psikologis atau emosional. Wawasan ini memberikan panduan bagi pembuat kebijakan dan bisnis untuk fokus pada pengembangan infrastruktur dan strategi peningkatan nilai untuk mempercepat adopsi EV.*

Kata kunci: *Infrastruktur Pengisian Daya, Nilai yang Dirasakan, Pasar Berkembang, Perilaku Terencana, Adopsi Kendaraan.*

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INTRODUCTION

The pressing issue of climate change has compelled governments, industries, and individuals to minimize their ecological footprint. Worldwide, the transportation sector continues to be a major source of greenhouse gas emissions, accounting for more than 20 percent of global CO2 production (International Energy Agency, 2021). Among various mitigation strategies, the adoption of electric vehicles (EVs) has emerged as one of the most promising solutions to achieve cleaner, more sustainable mobility. Unlike internal combustion engine (ICE) vehicles, EVs offer the potential to reduce tailpipe emissions to zero, especially when powered by renewable energy sources. They additionally provide long-term economic benefits, including reduced operating expenses and decreased reliance on imported fossil fuels (International Energy Agency, 2020). However, while developed countries are making considerable progress in EV adoption, many developing countries, including Indonesia, are still facing significant obstacles in achieving similar outcomes (Clarita & Chalid, 2024; Gunawan *et al*., 2022).

Indonesia, as a country with one of the highest rates of motorization in Southeast Asia, has taken formal steps to align its national agenda with global climate commitments. As a signatory to the Paris Agreement, Indonesia has pledged to reduce its greenhouse gas emissions by up to 41 percent with international assistance, or 29 percent through its own efforts by the year 2030 (Ministry of Environment and Forestry Republic of Indonesia, 2021). Recognizing that the transportation sector is among the top contributors to CO2 emissions accounting for 21.11 percent globally as of 2023, the government has prioritized the development and promotion of electric vehicles (Statista, 2025). Presidential Decree No. 55 of 2019 mandates a national roadmap to accelerate the development of battery-based electric motor vehicles. This decree covers aspects such as domestic industrial development, charging infrastructure, fiscal incentives, and environmental protection.

In addition to policy measures, the government has introduced tangible incentives to encourage EV adoption, including tax exemptions, purchase subsidies, and exemptions from traffic restrictions like the "odd-even" policy in major cities (Government of Indonesia, 2019). Furthermore, Ministry of Industry Regulation No. 6 of 2022 outlines production targets aiming for 400,000 four-wheeled EVs and 6 million two- and three-wheeled EVs by 2025. Despite these ambitious goals, the reality on the ground reveals a substantial lag in adoption. According to data from GAIKINDO, electric vehicle sales in Indonesia totaled only 43,188 units in 2024, comprising a mere 4.98 percent of total vehicle sales (Al Ishaqi, 2025). This shortfall indicates that the current incentive framework may not be sufficient to overcome the perceived and real barriers to EV adoption among Indonesian consumers.

Focusing on the Jabodetabek region, which encompasses Jakarta, Bogor, Depok, Tangerang, and Bekasi is particularly pertinent for understanding EV adoption challenges in Indonesia. As the country's largest metropolitan area, Jabodetabek serves as an economic, political, and infrastructural hub, and is often seen as a barometer for urban policy implementation (Badan Pusat Statistik, 2021). The region has the highest levels of income, education, and infrastructure availability in the country, making it theoretically the most favorable area for early EV adoption. However, adoption levels continue to be notably low, indicating that consumer choices are influenced by a complex interplay of psychological, social, economic, and infrastructural factors that warrant further investigation (Veza *et al*., 2022).

Understanding the behavioral aspects of EV adoption is essential, as the transition to electric mobility is not merely a technological upgrade but also a change in lifestyle and consumption

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patterns. To examine this matter, researchers frequently employ psychological frameworks such as the Theory of Planned Behavior (TPB). Introduced by Ajzen, TPB explains that individual behavioral intention is influenced by three core components: attitude toward the behavior, subjective norms, and perceived behavioral control (Hu *et al*., 2025). In the context of EV adoption, this means consumers are likely to purchase an EV if they have a favorable evaluation of EVs, believe that people around them support EV use, and feel they have the ability and resources to do so. However, previous research has found that TPB alone cannot fully capture the complexity of consumer decision-making, particularly in emerging markets where practical barriers remain significant (Gunawan *et al*., 2022).

To supplement the behavioral insights provided by TPB, this study incorporates the Perceived Value (PERVAL) framework. Developed by Sweeney and Soutar, PERVAL suggests that consumers evaluate products by weighing perceived benefits against costs, including aspects such as quality value, emotional value, price value, and social value (Higueras-Castillo *et al*., 2019). This concept is also echoed in marketing theory, where perceived value is defined as the consumer's overall assessment of a product's utility based on what is received versus what is given (Kotler, 2016). For instance, a consumer may value an EV not only because it is environmentally friendly but also because it offers prestige or excitement. However, if the price is perceived as too high or the performance as inadequate, these perceived benefits may not be enough to drive purchasing behavior.

Additionally, this study acknowledges the critical role of external contextual variables that act as adoption barriers. In particular, four specific factors are incorporated, i.e.: availability of charging infrastructure, charging time, driving range, and perceived resale value. Each of these has been shown in prior research to significantly impact consumer willingness to adopt EVs. For example, the lack of publicly accessible charging stations is frequently cited as one of the main deterrents, especially outside urban centers. As of April 2024, Indonesia reportedly had only 1,380 public EV charging stations, far below the government's 2030 target of 31,859 units as projected by the Ministry of Energy and Mineral Resources (Wiradji, 2024).

Extended charging durations, in contrast to the rapid refueling of internal combustion engine (ICE) vehicles, exacerbate the issue. In Indonesia, charging typically takes between 30 and 120 minutes, which may be inconvenient for many prospective users (Veza *et al*., 2022). Meanwhile, limited driving range contributes to "range anxiety," particularly in areas with minimal charging coverage. Lastly, uncertainty over resale value remains a significant psychological barrier. Many consumers are wary of purchasing a vehicle with uncertain market depreciation and limited after-sales support (Clarita & Chalid, 2024).

This study employs the TPB alongside the concept of perceived value, both of which have been utilized in recent research on electric vehicle (EV) adoption. For instance, Naufal *et al*. (2024) reported that in the Jabodetabek region, attitude, perceived behavioral control, and price value significantly affect consumers' intentions to purchase EVs, whereas subjective norm was not found to be significant. A study by Saputra & Yuwono (2024) in Batam supported these findings, highlighting that financial incentives and consumer knowledge significantly affect both attitude and intention to adopt EVs. Furthermore, a factor analysis study by Saputra & Andajani (2024) revealed that perceived behavioral control, moral norms, environmental concern, and financial incentive policies have a positive influence on consumers' intention to adopt electric vehicles in Indonesia. These findings support the relevance of TPB and perceived value as a conceptual model in the Indonesian context.

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The contribution of this study is its integrated framework, which merges TPB, PERVAL, and critical contextual barriers to offer a comprehensive perspective on EV adoption. This comprehensive framework allows us to identify which factors are most influential and how they interact to shape consumer behavior. Such insights are invaluable for multiple stakeholders. Policymakers can design more nuanced interventions that go beyond incentives and focus on alleviating practical constraints. For instance, targeted investments in charging infrastructure in residential and commercial zones may have a more immediate impact than broad subsidy schemes. Meanwhile, EV manufacturers and dealers can refine their value propositions by addressing consumer concerns about cost, reliability, and long-term value.

By analyzing Jabodetabek as a strategic case study, the findings from this research may offer generalizable lessons for other urban centers in Indonesia and Southeast Asia. Cities with similar demographic and infrastructural characteristics can use this model as a blueprint for crafting local EV promotion strategies. Moreover, as Indonesia continues to position itself as an EV production hub in the region, understanding domestic consumer behavior becomes essential to ensuring that supply meets demand.

This research, to the best of our awareness, is the earliest attempt to integrate TPB, the PERVAL framework, and significant contextual variables such as charging infrastructure, range, charging time, and resale value into one comprehensive model explaining EV adoption in Indonesia. Previous studies have largely examined these factors separately, producing inconsistent findings. By focusing on the Jabodetabek metropolitan area which represents the most advanced region in terms of infrastructure, income, and policy support yet still demonstrates low EV adoption, this research provides new insights into the paradox of technology diffusion in emerging markets. Therefore, this study not only extends the applicability of TPB and PERVAL but also highlights the primacy of infrastructural and economic considerations over psychological drivers in shaping EV adoption intentions.

LITERATURE REVIEW

The TPB posits that an individual's behavioral intention is shaped by three primary constructs, that is attitude, subjective norm, and perceived behavioral control (PBC). Attitude refers to the extent to which an individual holds favorable or unfavorable evaluations toward electric vehicle (EV) adoption. Studies have shown that positive environmental beliefs, perceived efficiency, and awareness of long-term cost savings tend to strengthen attitudes toward EV use (Gunawan *et al*., 2022). In Indonesia, cost sensitivity and environmental concerns are particularly influential in shaping these attitudes. Based on this, the first hypothesis is proposed:

H1: Attitude has a significant positive effect on the intention to adopt electric vehicles.

Subjective norm refers to the perceived social pressure to engage or refrain from a behavior. In Indonesia's collectivist cultural context, family, friends, and community can exert significant influence on individual behavior. However, the degree of this influence varies across contexts. Saputra & Andajani (2024) found mixed results regarding the significance of subjective norm on EV adoption in Indonesia. This leads to the second hypothesis:

H2: Subjective norm has a significant positive effect on the intention to adopt electric vehicles.

Perceived behavioral control captures a person's perception of their ability to perform the behavior, taking into account internal factors such as knowledge and confidence, as well as external

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factors such as cost and charging infrastructure. Gunawan *et al*. (2022) emphasize that PBC can significantly shape adoption intention, especially when perceived barriers are minimized. In Indonesia, where the charging infrastructure remains under development, perceived behavioral control (PBC) could act as a significant predictor of electric vehicle (EV) adoption behavior.

H3: Perceived behavioral control has a significant positive effect on the intention to adopt electric vehicles.

This study also adopts a perceived value framework as proposed by Higueras-Castillo *et al*. (2019), which includes four value dimensions, that is quality, price, emotional, and social. Quality value refers to consumers' evaluations of the reliability and performance of EVs, such as battery durability and driving capability. Price value represents the perceived benefit relative to financial cost. Emotional value captures the affective benefits such as enjoyment, pride, or novelty. Social value reflects perceived prestige and approval associated with using an environmentally friendly vehicle. According to Nosi *et al*. (2017), these value dimensions contribute differently to attitude formation depending on market maturity, with functional and price-related values typically being dominant in emerging economies.

H4: Perceived quality value has a significant positive effect on attitude toward electric vehicles.
H5: Perceived price value has a significant positive effect on attitude toward electric vehicles.
H6: Perceived emotional value has a significant positive effect on attitude toward electric vehicles.
H7: Perceived social value has a significant positive effect on attitude toward electric vehicles.

Beyond these psychological and perceptual constructs, this study incorporates several contextual variables drawn from recent EV literature. These include charging station availability, charging time, driving range, and resale value. Charging station availability remains one of the most critical infrastructure-related concerns, as it directly impacts users' sense of convenience and security (Clarita & Chalid, 2024). Charging time, on the other hand, can be a deterrent when recharging takes significantly longer than conventional refueling (Veza *et al*., 2022). Driving range relates to consumers' trust in the vehicle's capability to complete trips without interruption (Kim *et al*., 2018). Lastly, the uncertain resale value of EVs in a relatively immature secondary market may diminish purchase motivation (Moeletsi, 2021).

H8: Charging station availability has a significant positive effect on the intention to adopt electric vehicles.
H9: Charging time has a significant negative effect on the intention to adopt electric vehicles.
H10: Driving range has a significant positive effect on the intention to adopt electric vehicles.
H11: Resale value has a significant positive effect on the intention to adopt electric vehicles.

METHOD

This research utilized a quantitative method with a cross-sectional survey design to investigate the factors affecting the intention to adopt electric vehicles (EVs) in the Jabodetabek region (Jakarta, Bogor, Depok, Tangerang, and Bekasi). The study targeted private vehicle owners who are aware of or have contemplated purchasing an EV.

The population consisted of private vehicle users residing in urban areas of Jabodetabek. A purposive sampling technique was used to select respondents who met specific criteria (Campbell *et al*., 2020), namely those with prior exposure to or interest in EVs. A total of 200 questionnaires were distributed, and 188 valid responses were retained for further analysis.

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Primary data were collected using a structured online questionnaire measured on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Measurement items were adapted from prior studies, including constructs from TPB (Gunawan *et al*., 2022) and PERVAL framework (Walsh *et al*., 2014). Contextual variables such as charging station availability, charging time, driving range, and resale value were adapted from Veza *et al*. (2022) and Clarita & Chalid (2024).

Content validity was ensured through expert review involving academics and industry practitioners (Koller *et al*., 2017). A pilot test was conducted with 30 respondents to assess item clarity and internal consistency. All constructs demonstrated satisfactory reliability with Cronbach's alpha values exceeding 0.70 (Murugesan *et al*., 2022). Convergent validity was assessed using Average Variance Extracted (AVE), and discriminant validity was confirmed using the Fornell-Larcker criterion (Cheung *et al*., 2024).

Following the guidelines from Hair *et al*. (2017), data analysis was performed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0 software. The analysis followed a two-step process, that is assessment of the measurement model to evaluate reliability and validity, followed by the structural model assessment to test hypothesized relationships using bootstrapping with 5,000 subsamples.

RESULTS

The analysis was conducted using PLS-SEM with SmartPLS 4.0, based on 188 valid responses from private vehicle users in Jabodetabek. The respondents were diverse in terms of age, education, and income, ensuring a robust representation of perspectives regarding electric vehicle (EV) adoption. Most respondents resided in Jakarta (45.21 percent) and Tangerang (31.91 percent), were male (59.04 percent), and primarily aged between 35–44 years (36.70 percent). In terms of monthly income, the majority earned between IDR15–30 million (29.79 percent), and most worked as professionals (61.17 percent). Additionally, 82.98 percent of respondents owned a car, with 54.79 percent owning conventional vehicles and 9.04 percent owning EVs.

The measurement model was assessed to confirm the reliability and validity of the constructs. All constructs demonstrated high internal consistency, with Cronbach's alpha values between 0.781 and 0.902, and composite reliability exceeding 0.70 (Murugesan *et al*., 2022). Convergent validity was established, with the AVE for all constructs surpassing the 0.50 threshold. Discriminant validity was also established through the Fornell-Larcker criterion, with each construct's square root of AVE exceeding its correlations with other constructs (Cheung *et al*., 2024).

The structural model exhibited moderate explanatory capability, with a coefficient of determination (R^2) of 0.523 for behavioral intention, suggesting that the model accounts for 52.3 percent of the variance in EV adoption intention. Predictive relevance was also supported, with a Q^2 value of 0.318 (Mondego & Gide, 2024).

Table 1 displays the structural path coefficients and significance levels for each hypothesized relationship. A hypothesis is considered supported or significant if $p < 0.05$, whereas it is not supported or deemed insignificant if $p > 0.05$ (Di Leo & Sardanelli, 2020). Perceived quality value ($\beta = 0.623$, $p < 0.001$) and perceived price value ($\beta = 0.274$, $p < 0.001$) were found to significantly influence attitudes toward EVs. In contrast, perceived emotional value ($\beta = 0.114$, $p = 0.072$) and social value ($\beta = 0.014$, $p = 0.864$) did not show significant effects on attitudes.

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Table 1. Structural model – Path Coefficient and p-values

Variable	Path Coefficient	t-statistic	p-Value	Result
Attitude → Intention	0.087	1.358	0.174	No Significant
Subjective Norm → Intention	-0.048	0.546	0.585	No Significant
PBC → Intention	0.146	1.943	0.052	No Significant
Quality Value → Attitude	0.623	8.119	0.000	Significant
Emotional Value → Attitude	0.114	1.796	0.072	Not Significant
Price Value → Attitude	0.274	4.111	0.000	Significant
Social Value → Attitude	0.014	0.172	0.864	Not Significant
Charging Station → Intention	0.424	6.838	0.000	Significant
Charging Time → Intention	0.079	0.864	0.387	Not Significant
Driving Range → Intention	-0.100	1.375	0.169	Not Significant
Resale Value → Intention	0.258	4.222	0.000	Significant

Source: Primary data (processed), 2025.

Additionally, both the availability of charging stations ($\beta = 0.424$, $p < 0.001$) and perceived resale value ($\beta = 0.258$, $p < 0.001$) had a significant impact on behavioral intention. However, other contextual variables, including charging time ($\beta = 0.079$, $p = 0.387$) and driving range ($\beta = -0.100$, $p = 0.169$), were not statistically significant. Surprisingly, traditional constructs from the Theory of Planned Behavior attitude ($\beta = 0.087$, $p = 0.174$), subjective norms ($\beta = -0.048$, $p = 0.585$), and perceived behavioral control ($\beta = 0.146$, $p = 0.052$) did not significantly predict behavioral intention.

Effect size analysis revealed that charging station availability had a medium-to-large effect ($f^2 = 0.278$) on intention, while resale value had a small-to-medium effect ($f^2 = 0.089$). In terms of attitude formation, quality value ($f^2 = 0.104$) and price value ($f^2 = 0.097$) also demonstrated moderate effect sizes.

These findings underscore the importance of infrastructure and perceived long-term value in shaping consumer behavior, suggesting that practical considerations may override internal motivations in the context of EV adoption in Indonesia.

Discussion

The findings of this research offer valuable insights into the patterns of electric vehicle (EV) adoption in Indonesia, especially in the urban area of Jabodetabek. By integrating the Theory of Planned Behavior (TPB), the Perceived Value (PERVAL) framework, and key contextual factors, this study provides a thorough examination of elements shaping consumer intention. The findings deviate from conventional expectations based on TPB theory and highlight the crucial role of contextual and pragmatic considerations in emerging markets. Similar patterns were also observed in Nigeria, where facilitating conditions such as infrastructure and government support strongly influenced adoption intentions (Ajao *et al*., 2024), and in China, where contextual factors improved the explanatory power of behavioral models (Hu *et al*., 2025).

The insignificance of the core TPB constructs: attitude, subjective norms, and perceived behavioral control on behavioral intention challenges the assumption that psychological readiness is always decisive. While studies in advanced economies such as Korea (Kim *et al*., 2018) and Europe (Higueras-Castillo *et al*., 2019) reported strong effects of these constructs, findings in emerging markets paint a different picture. For example, Moeletsi (2021) in South Africa and Saputra &

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Andajani (2024) in Indonesia found that economic and infrastructural barriers often overshadow internal motivations. Broader reviews also confirm that insufficient charging infrastructure and limited grid stability remain major barriers across developing regions such as India, Vietnam, and Bangladesh *(Lazuardy et al*., 2024).

Although attitudes were shaped by perceived quality and price value, they did not translate into stronger adoption intentions. This attitude, intention gap has also been observed in other developing markets such as Malaysia (Veza *et al*., 2022) and Batam, Indonesia (Saputra & Yuwono, 2024). By contrast, Naufal *et al*. (2024) found a significant effect of attitude in Jabodetabek, showing that contextual differences across samples can produce inconsistent findings. Outside Southeast Asia, Bansal *et al*. (2021) showed that Indian consumers are willing to pay a premium for enhancements in charging time, driving range, or operational costs, suggesting that economic and functional values serve as key motivators. Such variations highlight the need for further investigation into how consumer perceptions shift under different contextual pressures.

The PERVAL dimensions provided additional insight into attitude formation. Both quality and price value significantly influenced attitudes toward EVs, underscoring the pragmatic orientation of Indonesian consumers. Nosi *et al*. (2017) argued that in less mature markets, functional and price-related values dominate decision-making. Conversely, emotional and social value were not significant, indicating that EVs in Indonesia have not yet attained the symbolic status they hold in developed countries. A similar conclusion was reached in ASEAN comparative research, where symbolic consumption remained secondary to affordability and convenience in countries such as Myanmar, Cambodia, and the Philippines (Lin *et al*., 2025).

Among the contextual variables, charging station availability emerged as the strongest determinant of adoption intention. This highlights the decisive role of infrastructure readiness in technology adoption. Comparable findings have been reported in Indonesia (Clarita & Chalid, 2024), Malaysia (Veza *et al*., 2022), and South Africa (Moeletsi, 2021), all of which underline that without adequate infrastructure, adoption remains constrained. The ASEAN region faces similar issues, as identified in multi-country studies, which show that uneven infrastructure rollout and urban, rural divides remain primary obstacles to scaling EV adoption (Lazuardy *et al*., 2024).

Resale value was another significant predictor of adoption intention. Concerns over depreciation and the absence of a mature second-hand EV market are consistent with earlier findings in Indonesia (Clarita & Chalid, 2024) and South Africa (Moeletsi, 2021). Kim *et al*. (2018) also noted that Korean consumers considered resale value an important determinant of adoption. More recently, Lazuardy *et al*. (2024) confirmed that Indonesian consumers remain cautious due to uncertainties in after-sales service and long-term market valuation, suggesting that resale-related barriers are deeply rooted in emerging economies.

Interestingly, charging time and driving range did not significantly affect behavioral intention. One possible explanation is that urban consumers in Jabodetabek, who typically use vehicles for shorter commuting distances, may not perceive these factors as major obstacles. This is consistent with findings from Batam (Saputra & Yuwono, 2024), where incentives and consumer awareness were stronger drivers than technical specifications. Naufal *et al*. (2024) also highlighted that limited direct exposure to EVs reduces the salience of charging-related barriers. Similarly, Bansal *et al*. (2021) observed that although Indian consumers appreciate technical advancements, their adoption decisions are frequently limited by financial and infrastructural factors.

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Overall, this study confirms that EV adoption in Indonesia is shaped more by infrastructural and economic factors than by psychological predispositions. This conclusion is consistent with studies in Indonesia (Gunawan *et al*., 2022; Saputra & Andajani, 2024), Malaysia (Veza *et al*., 2022), and South Africa (Moeletsi, 2021). Theoretically, these results extend TPB by integrating value-based and contextual constructs, as also suggested by Higueras-Castillo *et al*. (2019) and Hu *et al*. (2025). Practically, the findings highlight the importance of infrastructure development, the establishment of a second-hand EV market, and the communication of long-term economic benefits. In line with Huang *et al*. (2021), innovative business models such as EV leasing or car sharing could also play a crucial role in reducing adoption barriers by lowering upfront costs and mitigating resale risks. Such strategies, together with policy support, are likely to prove more effective than relying solely on environmental awareness campaigns.

CONCLUSION

This study investigated the factors influencing the intention to adopt electric vehicles (EVs) in the Jabodetabek region by integrating the Theory of Planned Behavior (TPB), Perceived Value (PERVAL), and contextual variables into a single analytical model. The findings show that psychological factors, including attitude, subjective norms, and perceived behavioral control, do not have a significant effect on adoption intention in this contex. Instead, practical and value-based considerations play a dominant role. The availability of charging stations emerged as the most significant predictor of adoption intention, highlighting the importance of infrastructure readiness. Perceived resale value also had a notable impact, reflecting consumer concern about long-term investment returns and market risk. Additionally, perceived quality and price value significantly shaped consumer attitudes, indicating a pragmatic orientation among potential adopters who prioritize functional benefits and cost efficiency.

Despite its contributions, this research has limitations. The study is geographically limited to the Jabodetabek area, which may not fully represent other regions in Indonesia with different demographic or infrastructural characteristics. Furthermore, the cross-sectional design measures behavioral intention at only one point in time, without capturing changes over time. Future studies should consider larger geographic areas, longitudinal designs, and additional variables such as environmental concern, policy trust, or brand perception to improve the model's robustness and generalizability.

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