

Trust in the Electric Vehicle Service Ecosystem as a Determining Factor for Consumer Purchase Intent: A Systematic Literature Review

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Abstract. The global shift toward sustainable transportation has placed electric vehicles (EVs) at the forefront of efforts to reduce emissions and fossil fuel dependence. However, widespread adoption continues to be hindered by factors such as high costs, range anxiety, and underdeveloped supporting infrastructure. These challenges underline the importance of consumer trust in the broader EV ecosystem—encompassing not only the vehicle itself but also charging networks, after-sales service, and policy support—as a key determinant of purchase intention. This research presents a systematic literature review to analyze consumer trust in the electric vehicle service ecosystem as a significant predictor of purchase intention. The review methodology involves aggregating and synthesizing relevant studies from leading academic databases to identify key factors shaping such perceptions of trust. The analysis focuses on aspects of charging infrastructure, after-sales service availability, and government policy support that collectively influence consumer confidence in the functionality and sustainability of electric vehicles. The findings confirm that trust acts as a unifying construct that mediates the influence of technical, economic, and social factors on the decision to adopt EVs. The study concludes that strengthening the EV ecosystem through reliable infrastructure, transparent policies, and consistent service quality is essential to fostering consumer trust and accelerating EV adoption. This research identifies knowledge gaps and provides comprehensive insights for policymakers, automotive manufacturers, and future researchers to understand the dynamics of electric vehicle adoption.

Keywords: Purchase Intention; Electric Vehicle; Consumer trust in electric vehicle adoption.

INTRODUCTION

The global transition to sustainable transportation is accelerating, driven by climate change concerns, energy security imperatives, and technological innovation (Allam & Cheshmehzangi, 2024; Kashem et al., 2024; Kumar & Sharma, 2024). Electric vehicles (EVs) are at the forefront of this shift, offering a pathway to reduce greenhouse gas emissions, urban air pollution, and dependency on fossil fuels (Khalid et al., 2025; Ramanath, 2024; Requia et al., 2018). However, widespread adoption faces significant barriers, including high upfront costs, range anxiety, underdeveloped charging infrastructure, and consumer skepticism regarding reliability and after-sales support. These challenges form a complex ecosystem where trust in the technology, supporting infrastructure, and regulatory environment becomes a critical determinant of consumer acceptance and purchase intention. Globally, the interplay between policy incentives, technological readiness, and consumer confidence remains a pivotal yet underexplored nexus influencing EV market penetration.

The adoption of electric vehicles in Indonesia still faces challenges such as limited charging infrastructure and relatively high prices, even though electric cars are considered a solution to encourage energy conservation and reduce air pollution (Kurniawan et al., 2025). However, the growth of this industry is driven by government support, increasing environmental awareness, and technological advances (Kuswardani & Lawanda, 2025). These factors have the potential to increase consumer purchase intention toward electric vehicles,

although previous studies have shown that traditional technology acceptance models may not fully capture the social and control dimensions in the context of electric vehicle adoption (Permana, 2023).

Therefore, it is important to comprehensively understand how this ecosystem trust factor specifically influences consumer purchase intentions toward EVs in Indonesia, given the unique market dynamics and regulations (Rachmawati et al., 2023). This study analyzes factors that shape consumer perceptions, including vehicle performance considerations such as mileage, speed, acceleration, design, and comfort (Solekah et al., 2023).

Non-financial factors such as the availability of charging stations and battery charging time also influence purchasing decisions, particularly in countries with immature infrastructure (Hidayatullah & Sumarwan, 2025). The importance of government policies in providing incentives such as price subsidies and tax exemptions also significantly influences EV purchase intentions, in line with the Indonesian government's efforts to encourage the use of electric vehicles in major urban areas (Hidayatullah & Sumarwan, 2025). Moreover, environmental awareness and social image play a significant role in shaping consumer preferences for electric vehicles, particularly among the millennial generation, who are more open to technological innovation (Hidayatullah & Sumarwan, 2025).

Consumers' perceptions of vehicle efficiency, particularly in terms of mileage and reliability, significantly influence their purchasing behavior, with safety and battery life being prioritized (Solekah et al., 2023). Thus, there are three main factors that influence purchasing decisions in general: safety (including fuel economy, airbags, electronic stability control systems, anti-lock braking systems, and insurance prices), sportiness (including engine power, speed, and additional features), and comfort (including Bluetooth/infotainment, leather seats, design, and air conditioning) (Febransyah, 2021). In addition, evaluations of functionality, emotional aspects, cost of ownership, and brand identity shape consumer preferences for electric vehicles, indicating that purchasing decisions involve complex and diverse dimensions (Febransyah, 2021).

The influence of these factors varies across consumer segments and geographic locations, underscoring the importance of personalized marketing strategies and targeted infrastructure development (Hidayatullah & Sumarwan, 2025).

Previous research has extensively examined various determinants of EV adoption. Studies such as those by Hidayatullah and Sumarwan (2025) have applied the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) in the Indonesian context, identifying factors like performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, habit, perceived behavioral control, and attitude as significant predictors. Similarly, Solekah et al. (2023) utilized the Theory of Planned Behavior (TPB) to demonstrate that attitude, subjective norms, knowledge, and vehicle performance significantly influence green purchase intention for EVs. Internationally, research by Ivanova (2023) conducted a systematic review confirming that charging time and driving range are persistent concerns affecting purchase intentions, while Bhalla et al. (2018) highlighted the role of environmental awareness and economic perceptions in consumer decision-making. Moreover, studies in other Asian markets, such as China and Thailand, have emphasized the critical impact of government policies, subsidies, and charging accessibility on adoption rates (Suvittawat & Suvittawat, 2025; Ye et al., 2021).

However, a notable gap remains in synthesizing how trust in the entire EV service ecosystem—integrating perceptions of charging infrastructure reliability, after-sales service quality, battery sustainability, and policy stability—functions as a unifying determinant of purchase intention. While prior studies have examined individual factors, there is limited consolidated understanding of how ecosystem trust mediates or moderates the relationship between known predictors and the final purchase decision. This study aims to analyze the factors influencing consumer perceptions and purchasing behavior toward electric vehicles, exploring the opportunities and challenges associated with EV adoption (Pereira & Bhat, 2024). The primary focus is on trust in the electric vehicle ecosystem as a key variable influencing consumer purchase intention, which includes charging infrastructure, energy sources, and smart applications (Permana, 2023). The study also examines the extent to which government incentive policies and environmental awareness encourage EV adoption in Indonesia, a potential market but still experiencing low EV adoption rates (Permana, 2023). Nevertheless, Indonesia has responded with various policies to support the adoption of electric vehicles, which are seen as a future environmentally friendly transportation solution (Astuti & Susanto, 2024).

MATERIALS AND METHOD

This research adopted a systematic literature review (SLR) approach to identify, evaluate, and synthesize relevant empirical evidence from previous studies on the determinants of consumer purchase intention towards electric vehicles (Bhalla et al., 2018). This methodology aims to provide a comprehensive overview of the existing research landscape and identify knowledge gaps that need to be addressed to better understand the dynamics of the EV market in Indonesia (Hidayatullah & Sumarwan, 2025). This process involves four main stages, namely:

1. Identification of literature.
2. Screening journals relevant to the topic.
3. Eligibility of journals and publishers.
4. Inclusion, designed to ensure the objectivity and relevance of the synthesis results.

The identification stage involves a systematic search of major academic databases using keywords relevant to EVs and consumer purchase intention. Strict inclusion and exclusion criteria will be applied to select the most relevant and high-quality studies. Next, a screening process will be conducted to screen articles based on title and abstract, followed by a full-text eligibility evaluation to determine the study's final relevance to the primary research question (Suvittawat & Suvittawat, 2025). Figure 1 illustrates the inclusion stage. Studies meeting the criteria will be analyzed in depth to extract relevant data regarding variables influencing EV purchase intention, geographic and demographic context, and the theoretical framework used (Hidayatullah & Sumarwan, 2025).

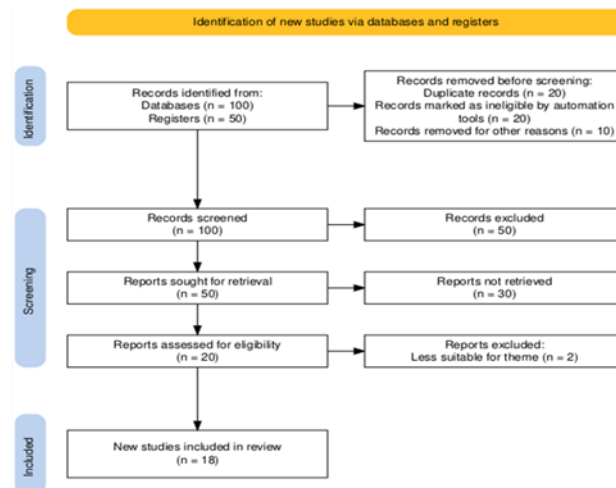


Figure 1. Prism Literature Review

Source: Adapted from Page et al. (2021) The PRISMA 2020 statement: An updated guideline for reporting systematic reviews

The collected data will be qualitatively synthesized to identify recurring themes, inconsistencies, and underexplored research areas, providing a foundation for developing a new conceptual framework regarding EV ecosystem trust and consumer purchase intention (Bhalla et al., 2018). This approach will also facilitate the identification of potential moderators and mediators in the relationship between ecosystem factors and purchase intention, and allow for comparison of findings across geographic and socioeconomic contexts. This method ensures that conclusions drawn are not based solely on a superficial review, but on a thorough and critical analysis of the available literature (Ivanova, 2023).

RESULTS AND DISCUSSION

Table 1 below presents 18 journals that have been selected and chosen as references for discussing SLR in this journal. Table 1 displays several research methods such as using TPB, TAM, UAT, and SEM (Putri, 2024). Furthermore, the research also discusses customer motivations for purchasing EV vehicles, customer behavior in choosing and using EV vehicles, from vehicle comfort to accessories provided by EV vehicles (Ivanova, 2023). The literature review also discusses several studies on EV purchase intention, such as in China, Malaysia, and Thailand. These studies also underscore the importance of theoretical frameworks such as the Unified Theory of Acceptance and Use of Technology and the Theory of Planned Behavior in understanding EV purchase intention (Hidayatullah & Sumarwan, 2025) (Putri, 2024).

Table 1. Literature Review (Source: Google Scholar).

No	Author/Year	Model	Variable	Results	Future Research
1	Hidayatullah, M. I., Sumarwan, U., & Suhendi. (2025)	Unified Theory of Acceptance and Use of Technology 2 (UTAUT2).	This study examined nine variables influencing EV adoption: performance expectancy, effort expectancy, social influence,	Habits and hedonic motivations significantly influence consumers' behavioral intentions to adopt EVs.	Further investigation into infrastructure readiness or consumer behavior in rural areas is needed due to sample limitations.

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No	Author/Year	Model	Variable	Results	Future Research
			facilitating conditions, hedonic motivation, price value, habit, perceived behavioral control, and attitude toward the behavior.		
2	Suvittawat, A.; Suvittawat, N.; Khampirat, B. (2025)	- Technology Acceptance Model (TAM) - Struktural (Structural Equation Modeling - SEM)	This study investigated variables such as convenience, accessibility, and perception of technology. Cost of ownership was also a significant variable influencing usage behavior..	Convenience and accessibility (CA) positively and significantly influence technology perception and performance (TP) (path coefficient = 0.342, $p < 0.001$).	Expand EV adoption studies across different geographic regions, including rural areas and countries with varying infrastructure maturity, to increase generalizability.
3	Shalu and Anupriya Pandey (2023) Shalu (2025) Anupriya Pandey (2025)	Struktural (Structural Equation Modeling - SEM)	This study investigated variables such as convenience, accessibility, and perception of technology. Cost of ownership was also a significant variable influencing usage behavior.	Attitude is the strongest predictor of EV adoption intention ($\beta = 0.436$).	Investigate the actual adoption behavior of EV users and gain first-hand knowledge from them.
4	Jay P. Trivedi* and Kaushal Kishore 2020	Model fit indices include CMIN/DF, TLI, CFI, RMSEA, and SRMR.	Model fit indices include CMIN/DF, TLI, CFI, RMSEA, and SRMR.	Convenience, online reviews, and accessibility are the top three factors that influence consumer brand attitudes, which then lead to brand love and purchase intention.	Expanding data collection beyond India's metro markets to include both rural and urban areas for a broader understanding of the car's success.
5	Fei Ye, Wanlin Kang, Lixu Li *, Zhiqiang Wang *13 Maret 2021 .	Fuzzy-set qualitative comparative analysis (FSQCA) is used for empirical results.	Psychological attributes include attitudes, subjective norms, and perceived behavioral control. Policy attributes include purchase subsidies, license plate controls, and	The configuration for high EV purchase intention always includes at least one psychological attribute.	Focus on configurations that lead to high actual EV purchases, addressing the gap between intention and behavior.

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No	Author/Year	Model	Variable	Results	Future Research
			preferential use.		
6	Fei Ye, Wanlin Kang, Lixu Li *, Zhiqiang Wang * 2020.	Van Westendorp price sensitivity model (PSM)	Eight concepts were tested: awareness of consequences, responsibility writing, and more. This study explored the factors influencing urban household purchase intentions.	Under the context of subsidies, cost factors do not significantly affect urban households' purchase intentions for pure electric vehicles in China.	Analyze purchase intent using multi-source data, including car sales websites, trip logs, and geographic information, to increase objectivity.
7	Zulfiqar Ali Lashari, Joonho Ko, and Junseok Jang (2021)	Two models were used: regression tree and logistic regression.	The dependent variable indicates willingness to purchase an EV. Explanatory variables include socio-demographic characteristics, attitudes, and travel time.	Environmental and economic perceptions of EV use are the strongest predictors of EV purchase.	Conduct longitudinal observations of behavioral changes to establish a more causal relationship between user perceptions and EV purchase intentions.
8	Authors: Jian Chen, Zhenshuo Zhang, Chenyu Zhao, Shuai Zhang, Wenfei Guo, Cunhao Lu, Xiaoguang Sun Publication Year: 2024	The analysis model of influencing factors (Kruskal-Wallis analysis model (H model)).	The analysis model uses the ANOVA and Kruskal-Wallis algorithms for influencing factors.	The main factors influencing customer purchases vary across EV brands, but customer evaluation of the vehicle experience has a greater influence overall.	Future research could extend the current model to apply to the sale of different products, such as housing or electronic products.
9	Solekah, Ratnasari, Hirmawan (2023)	TBP	This study identifies the variables that influence green purchase intentions for electric vehicles.	Attitude, Subjective Norm, Knowledge, and Vehicle Performance significantly influence Green Purchase Intention for Electric Vehicles (GPIEV).	Further research should consider barriers to widespread EV adoption, such as limited charging infrastructure, driving range, and the availability of affordable EV models.
10	Ade Febransyah, 2021	Multi-criteria decision model based on analytical network process (ANP)	Key variables include functionality, emotion, cost of ownership, and car identity.	Affluent and highly educated early adopters show moderate preferences towards BEV purchases.	Expanding the research to a larger target customer group with similar job-to-be-done (JTBD) and ability

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No	Author/Year	Model	Variable	Results	Future Research
		approach	These criteria influence purchase intention among target customers.		to purchase an affordable BEV in Indonesia.
11	Riri Ramadhani Putri, 2024	This paper highlights models such as TPB, UTAUT, and NAM for EV adoption.	F The main focus is on consumers' electric vehicle purchase intentions.	Research identifies a significant increase in publications regarding electric vehicle adoption intentions over the past six years.	Reduce bias from self-reported data and use systematic sampling for a more diverse and representative sample.
12	Jay P. Trivedi*, and Kaushal Kishore. 2020	Confirmatory factor analysis was conducted using maximum likelihood estimation. Model fit indices included CMIN/DF, TLI, CFI, RMSEA, and SRMR.	Car attributes influence consumer attitudes toward electric car brands. Accessibility influences consumer attitudes toward electric car brands.	Convenience, online reviews, and accessibility are the top three factors that influence consumer brand attitudes, which then lead to brand love and purchase intention.	Expand data collection beyond India's metro markets to include both rural and urban areas for a broader understanding. Conduct a longitudinal survey with consumers who have tested and subsequently purchased electric cars. k.
13	Yan Song*, Gumporn Supasettaysa, Thanaphon Ratchatakulpat, 2025	The research used structural equation modeling (SEM).		Marketing communications positively influence consumer perceived value ($\beta = .918$, CR = 10.522, $p < .001$). Consumer perceived value significantly influences purchase intention ($\beta = .569$, CR = 2.791, $p = .005$).	Expand the sample scope to include wider regions, age groups, income levels, and types of employment to increase generalizability.
14	Author: Adisak Suvittawat Year: 2024	TAM	Consumer characteristics include social, demographic, psychological, and personal variables.	Consumer characteristics (CC) have a significant and positive relationship with supply chain agility (SCA) ($\beta = 0.21$, $p < 0.05$).	Combining variables related to economic, geographic, and technological advancements to better understand the structural equations that influence EV purchasing decisions.
15	Nagarajan	TAM	This study	Personal	Future research

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No	Author/Year	Model	Variable	Results	Future Research
	Shanmugavel. Martina Micheal, 2022		examines relative product innovation, superiority, and price advantage variables.	innovativeness significantly influenced perceived e-vehicle usefulness ($\beta = 0.351$; $P < 0.001$). Relative product innovativeness, relative product advantage, relative price advantage, and relative promotional effort all significantly influenced perceived e-vehicle usefulness.	could expand the sample beyond a single auto show event in India to include all cities, towns, and villages to investigate people at multiple levels, addressing potential residence bias.
16	Sun-Jung Month, 2022	TPB	Environmental trends influence attitudes towards EV purchases.	The three determinants of the Theory of Planned Behavior (TPB) (attitude, subjective norm, and perceived behavioral control) significantly influence the intention to purchase an Electric Vehicle (EV) at the 1% significance level.	t Future studies should verify the moderating effect of collectivism on EV purchases in highly collectivistic societies, such as Korea, through international comparative studies that control for cultural variables.
17	Rizq Atika Maso and Tengku Ezni Balqiah, 2022	This study uses the C-TAM-TPB model for consumer intention analysis.	This study identifies factors that influence consumers' intention to adopt electric vehicles.	Perceived usefulness does not directly influence electric vehicle purchase intention. Perceived usefulness and perceived ease of use positively influence attitudes.	Include incentive factors (monetary such as tax discounts, non-monetary such as freedom from odd-even regulations) to analyze their impact on purchase intention.
18	Gulnaz Ivanova and Antonio Carrizo Moreira, 2023	The summary model represents the impact of key antecedents on EV purchase intention. The theory of planned behavior is frequently	Charging time negatively impacts EV purchase intentions. Driving range is a significant concern for consumers.	This study analyzed 63 articles published between 1994 and 2021, with 84% published in the last five years and 32% in 2021 alone. China leads in the number of articles by corresponding authors (~32%) and	Address the mixed effects of age, gender, and education level to determine whether the results are context-based or part of a new green trend. Investigate the relationship

No	Author/Year	Model	Variable	Results	Future Research
		applied in research.		studies conducted (~40%).	between income and geographic location, and analyze how incentives for low-income households impact perceived EV value and economic benefits.

Source: Processed by the author from Google Scholar (2020-2025)

CONCLUSION

This systematic literature review examines consumer purchase intention toward electric vehicles (EVs) based on 18 selected journal articles from 100 screened sources spanning 2020–2025, identifying key influencing factors such as technical characteristics, costs, individual attitudes, and social influences, alongside heightened knowledge of EVs and environmental awareness that significantly drive adoption. The government plays a crucial role through incentive policies, subsidies, and adequate charging infrastructure. For future research, studies should explore the interplay between income levels, geographic location, and tailored incentives (e.g., monetary tax discounts or non-monetary exemptions from odd-even traffic rules) for low-income households to assess their impact on perceived EV value and economic benefits, while conducting international comparative analyses in highly collectivistic societies like Korea to verify the moderating effect of collectivism on EV purchases, controlling for cultural variables.

REFERENCES

- Allam, Z., & Cheshmehzangi, A. (2024). Technological innovation and sustainable transitions. In *Sustainable futures and Green New Deals* (pp. 55–79). Springer.
- Astuti, R. D., & Susanto, A. A. (2024). Challenges of electric vehicle adoption in Indonesia: Revealing the hidden factors affecting purchase intention. *Jurnal Studi Bisnis*, 28(2), 149–171. <https://doi.org/10.20885/jsb.vol28.iss2.art2>
- Bhalla, P., Ali, I. S., Arabia, S., Nazneen, A., & Arabia, S. (2018). A study of consumer perception and purchase intention of electric vehicles. *Journal of Management Research*, 149(4), 362–368.
- Febransyah, A. (2021). *Predicting purchase intention towards battery electric vehicles: A case of Indonesian market*.
- Hidayatullah, M. I., & Sumarwan, U. (2025). A comprehensive analysis of the factors influencing electric vehicle purchase intentions in Indonesia: A study based on the UTAUT 2 model. *Journal of Business and Management Studies*, 11(3), 818–832.
- Ivanova, G. (2023). Antecedents of electric vehicle purchase intention from the consumer's perspective: A systematic literature review, 1, 1–27.
- Kashem, M. A., Shamsuddoha, M., & Nasir, T. (2024). Sustainable transportation solutions for intelligent mobility: A focus on renewable energy and technological advancements for electric vehicles (EVs) and flying cars. *Future Transportation*, 4(3), 874–890.
- Khalid, A., Haider, S., Hussain, Z., & Abbas, S. (2025). The role of electric vehicles in environmental transformation: Goal towards a pollution-free climate. *Clean Energy and Sustainability*, 3(4), 10018.
- Kumar, M., & Sharma, S. (2024). Renewable energy and sustainable transportation. In *Role of*

science and technology for sustainable future: Volume 1—Sustainable development: A primary goal (pp. 375–414). Springer.

- Kurniawan, I., Hutauruk, L., Putra, Y. W., & Atas, S. (2025). The future of electric cars in Indonesia: Exploring factors influencing the purchase intention through the modified theory of. *Journal of Sustainable Transportation Studies*, 5(2), 3089–3101.
- Kuswardani, S., & Lawanda, I. I. (2025). Impact analysis of China's electric vehicle. *International Review of Humanities Studies*, 10(1).
<https://doi.org/10.7454/irhs.v10i1.1360>
- Maso, R. A., & Balqiah, T. E. (2022). Analyzing factors affecting purchase intention of electric vehicle in Indonesia: Moderation role of personal innovativeness on those factors. *ASEAN Marketing Journal*, 1(1), 350–361.
- Pereira, C. S., & Bhat, K. S. (2024). A systematic review of consumer perception and purchasing behavior of electric vehicles. *Journal of Sustainable Mobility*, 9(3), 11–33.
- Permana, R. (2023). Analisis faktor-faktor yang mempengaruhi konsumen terhadap purchase intention kendaraan listrik di Indonesia. *Jurnal Manajemen dan Bisnis*, 6, 217–232.
- Putri, R. R. (2024). Analysis of factors affecting the intention to purchase electric vehicles: A systematic literature review (SLR). *Jurnal Riset Manajemen*, 19(2), 96–107.
- Rachmawati, I., Amani, R., & Rahardi, M. (2023). Analysis of electric vehicle purchase intentions in Indonesia using the extension C-TAM-TPB model. *International Journal of Current Science Research and Review*, 6(12), 8065–8078.
<https://doi.org/10.47191/ijcsrr/V6-i12-61>
- Ramanath, A. (2024). Sustainability and environmental impacts of electric vehicles. In *Handbook of power electronics in autonomous and electric vehicles* (pp. 337–351). Elsevier.
- Requia, W. J., Mohamed, M., Higgins, C. D., Arain, A., & Ferguson, M. (2018). How clean are electric vehicles? Evidence-based review of the effects of electric mobility on air pollutants, greenhouse gas emissions and human health. *Atmospheric Environment*, 185, 64–77.
- Solekah, N. A., Ratnasari, K., Hirmawan, A. P., Maulana, N., & Ibrahim, M. (2023). Prediction of green purchase intention for electric vehicles: A theory of planned behavior. *Minds: Management and Innovation Studies*, 10(2), 297–320.
<https://doi.org/10.24252/minds.v10i2.40772>
- Suvittawat, A., & Suvittawat, N. (2025). Examining the influence of technological perception, cost, and accessibility on electric vehicle consumer behavior in Thailand, 1, 1–28.



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