# THE IMPACT OF ELECTRIC VEHICLE ADOPTION BARRIERS ON CONSUMER DOUBT AND PURCHASE INTENTIONS IN THAILAND

**Haonan Li[1] [*], Arti Pandey[2]**
International College, Rajamangala University of Technology Krungthep, Thailand[1]
International College, Rajamangala University of Technology Krungthep[2]
*E-mail: Thailand668080100088@mail.rmutk.ac.th[1]arti.p@mail.rmutk.ac.th[2]*

**Abstract:** This study examines how obstacles in Thailand's electric vehicle market reshape consumer psychology and reduce readiness to buy by integrating the Technology Acceptance Model with the Theory of Planned Behavior into a single path where price burden, infrastructure gaps, technical uncertainty and policy opacity elevate perceived risk, recast usefulness and ease beliefs, weaken attitudes and perceived control, and thereby depress intention. A structured questionnaire in Thai, English, and Chinese produced four hundred valid responses from prospective buyers recruited through convenience sampling, the instrument underwent translation and back translation with a pilot of thirty cases, and robust reliability and validity checks supported subsequent regression tests. Results indicate that financial, technical, and charging constraints significantly increase consumer doubt, that doubt is a strong negative predictor of purchase intention, and that barriers retain a direct association with intention, revealing partial rather than complete mediation. The findings enrich adoption theory by situating doubt within a stimulus organism response sequence and offer practical guidance for finance, warranty communication, and dependable public and workplace charging that together improve perceived control and reduce anxiety.

**Keywords:** *Electric vehicles, Consumer doubt, Adoption barriers, Purchase intention, Technology Acceptance Model, Theory of Planned Behavior, Thailand*

Submitted: 2026-01-17; Revised: 2026-02-28; Accepted: 2026-03-06

## 1. Introduction

Global electrification is accelerating as EVs emerge as a central decarbonization tool, with sales surpassing ten million units in 2022 and projections exceeding forty million by 2030, which sets the global context for Thailand's transition. Thailand seeks to reposition its auto industry through the 30 @ 30 program that targets 30 percent zero-emission output by 2030 and deploys incentives and tax relief to attract manufacturing; however, market conversion remains slower than policy ambition as upfront costs, patchy charging infrastructure, and consumer doubt temper registrations(Zhang et al., 2018).

Recent research highlights the rapid advancements in EV technology, such as improvements in battery life and charging infrastructure, but also underscores that these updates are not yet fully alleviating consumer doubts and hesitation in Thailand's EV market. Despite progress, barriers such as long charging times and limited vehicle range continue to affect purchase intentions, suggesting that updates in technical development are still

insufficient to address underlying consumer concerns(Sun et al., 2020). There remains a significant gap in understanding the psychological and logistical factors that contribute to reluctance, particularly in non-urban areas.

Survey evidence indicates a wide awareness-to-action gap: a nationwide poll reports strong recognition of environmental benefits but only a small share very likely to buy within two years, underscoring demand-side hesitation. Technical and infrastructure constraints compound hesitation, as long charging times, limited range, and the concentration of chargers in Bangkok intensify range anxiety and weaken confidence among non-urban buyers. This illustrates why adoption barriers are not purely economic but also logistical and psychological in nature for non-urban households. Furthermore, there is a lack of targeted research on how these barriers specifically influence the purchasing decisions of non-urban consumers in Thailand, revealing a critical research gap in understanding the broader consumer reluctance beyond just financial constraints.

## 2. Literature *Review*
### 2.1. Theoretical Background

The Technology Acceptance Model explains EV uptake by linking intention to two cognitive beliefs, perceived usefulness and perceived ease of use, which guide whether consumers view adoption as performance enhancing and effort saving in daily travel. Clarifying these levers,(Kohpaiboon, 2024) formalized the constructs and demonstrated that they predict acceptance across settings, which makes them apt for diagnosing decisions about cost, environmental benefit, and driving performance. When charging access appears convenient and operation seems simple, perceived ease of use rises and intention strengthens; when buyers read high long term value, perceived usefulness improves. In green technology contexts, researchers extend the model with environmental attitudes, social influence, and trust so that sustainability specific motives and doubts are captured without losing parsimony, a move emphasized by(Axsen & Kurani, 2013). Using this framework in Thailand allows the study to map barriers such as charging convenience, maintenance uncertainty, and perceived complexity to beliefs, and to test which perceptions act as obstacles or enablers.

The Theory of Planned Behavior explains how attitudes, subjective norms, and perceived behavioral control shape intention that precedes action, offering a structured way to parse EV purchase judgments. In articulating the schema, argues that favorable evaluations of outcomes such as cost savings, environmental benefit, and technological progress raise positive attitudes, that social expectations from family or peers form perceived pressure, and that the sense of capability reflects access to money, information, and infrastructure(Champahom et al., 2025). Applying these elements to Thailand requires attention to resource constraints and practical opportunities, because consumers gauge affordability, charging access, and knowledge when considering a switch. To underscore the role of capability, show that perceived control mediates the effect of infrastructure adequacy and financial means on adoption intention, which suggests that efforts improving charger density, financing availability, and transparent information can shift intention by lifting control beliefs.

### 2.2. Consumer Behavior Theory

Consumer Behavior Theory provides a psychologically grounded perspective based on attitudes, subjective norms, and perceived behavioral control, linking beliefs to intention and behavior, particularly in green adoption contexts. The flexibility of this theory allows the study to integrate consumer doubt as perceived risk while also incorporating moral and

environmental concerns, ensuring that value-driven motives are captured within the same framework (Brinkmann & Bhatiasevi, 2023).. Using this extended lens enables the analysis to trace how risk appraisal, ethical orientation, and social expectations interact with affordability and charging access in Thailand, clarifying how external barriers are translated by psychological perceptions into purchase intentions, which vary across segments and decision situations. Evidence indicates strong predictive power for EV intentions, as South African consumers show willingness shaped by attitudes, subjective norms, and perceived control when evaluating green cars, whereas another South African study identifies attitudes and perceived control as the dominant factors when households weigh electric car choices and constraints.

### 2.3. Purchase Intention

Purchase intention refers to a consumer's likelihood of purchasing, serving as a direct predictor of actual behavior in sustainable mobility. This intention is particularly valuable in contexts like electric vehicles (EVs), where vehicle ownership involves substantial financial commitments and long-term decisions. In this context, intention integrates psychological drivers, such as attitudes, risk assessment, and environmental values, with external factors like incentives, charging infrastructure, and societal expectations. By identifying these connections, researchers can pinpoint areas of uncertainty and actionable strategies.

Evidence from thirty-one studies shows that attitudes are the dominant factor influencing purchase intention, though perceived control and environmental concerns also play important roles. This hierarchy helps stakeholders focus on the most impactful beliefs. Additionally, EV-specific variables, such as green identity, refine predictions of purchase intention. Environmental awareness and ethical responsibility enhance evaluations and increase commitment to eco-friendly choices, as noted. Consumers' recognition of green value, particularly the alignment of eco-efficiency with personal responsibility, strengthens their intention to purchase EVs. Survey data from China shows that environmental benefits elevate attitudes and willingness to buy by reinforcing the sense of responsibility, as detailed(Egbue & Long, 2012).

### 2.4. EV Adoption Barriers

High upfront prices and uncertain lifecycle costs weaken intention, as comparable electric models carry sizable premiums even after projected fuel and maintenance savings are considered. Confidence erodes when buyers factor battery replacement risk, higher insurance and registration, and volatile resale values in thin used markets, while credit frictions such as high rates, collateral hurdles, and uneven access to loans push monthly payments beyond tolerance for many households. show these financing constraints bite hardest in lower income and rural segments where local incentives and credit channels are limited, so perceived savings arrive too far in the future to offset near term cash pressure and risk averse consumers delay adoption(Brinkmann & Bhatiasevi, 2023).

This study addresses key gaps in the current literature by examining the psychological and logistical factors that contribute to consumer reluctance towards electric vehicle (EV) adoption in Thailand, especially in non-urban areas. While prior research has focused on advancements in EV technology, such as improved battery life and charging infrastructure, it often overlooks the underlying consumer doubts that hinder purchase intentions. This study highlights the continued significance of barriers like long charging times and limited vehicle range, which persist despite technological improvements. By exploring these gaps, the research offers valuable insights into the consumer decision-making process, particularly the role of

psychological factors, and contributes to a deeper understanding of the challenges in EV adoption in Thailand's transitioning market.

### 2.5. Consumer Doubt

Consumer evaluation of electric vehicles is filtered through five risk dimensions that structure doubt about money, performance, social standing, time, and technology, where financial risk covers purchase outlay, use costs, and uncertain resale, and performance risk spans battery fade, real world range, and stability in difficult driving conditions grounded in classical risk typology theory. Concerns also include the chance of social disapproval if vehicles underperform and the expectation of time loss from charging or detours, while technological risk involves software faults and safety reliability such as thermal events, with interviews on early markets illustrating how these worries accumulate to depress confidence during evaluation and trial.

Information gaps magnify every risk dimension because most buyers cannot fully assess battery chemistry, charger standards, or lifespan costs, so asymmetric knowledge tilts judgments toward caution even when official guides exist, a mechanism specified in studies of perceived risk and adoption intention for new energy cars. Negative media frames that focus on rare safety incidents or charger failures intensify concern about reliability and personal safety, and repeated exposure anchors availability bias that elevates perceived frequency, which means that a few dramatic stories can outweigh balanced statistics during choice and produce hesitation in otherwise interested segments.

*Relationship between EV Adoption Barriers and Consumer Doubt*

Consumer hesitation toward EVs arises from interacting economic, infrastructure, psychological, and policy frictions that cloud perceived benefits and inflate hassle expectations, because adoption is filtered through judgments of relative advantage and complexity. High upfront premiums, uncertain battery depreciation, and doubts about residual value weaken trust in total ownership benefits. Sparse and unreliable charging deepens risk by forcing costly home upgrades and stoking range anxiety, yet confidence improves where accessible facilities are visible and dependable. Volatile subsidies and evolving recycling rules add uncertainty that household's price into decisions, so doubts compound across domains and convert tentative interest into delayed purchase despite environmental goodwill(Berckmans et al., 2017).
Thus, based on the above analysis, this research proposes the Hypothesis 1 (H1) as below:
H1: EV adoption barriers have a positive influence on consumer doubt.

*Relationship between Consumer Doubt and Purchase Intention*

Consumer hesitation toward EVs arises when perceived risk and uncertain practicality overshadow expected benefits, since worries about performance, charging reliability, and resale value degrade attitudes and dampen intention, a pattern.Within the Theory of Planned Behavior, anxiety about total cost, battery durability, network coverage, and operating routines undermines both favorable evaluations and perceived behavioral control, which suppresses purchase plans and triggers a deferment dynamic(Featherman et al., 2021).
Thus, based on the above analysis, this research proposes the Hypothesis 2 (H2) as below:
H2: Consumer doubt has a negative influence on purchase intention.

*The Mediating Role of Consumer Doubt between EV Adoption Barriers and Purchase Intention*

Perceived risk operates as the bridge through which external obstacles shape purchase intention, since barriers alter internal evaluations that guide choice, a mediation logic set out in consumer behavior scholarship and echoed by stimulus organism response findings showing that experience can recalibrate risk. In the electric vehicle context, high upfront cost, sparse charging, and policy ambiguity raise concern that erodes attitudes and perceived control and in turn delays commitment, while superior driving experience reduces fear and strengthens adoption by lowering that mediating risk(Ahmad et al., 2024).

Thus, based on the above analysis, this research proposes the Hypothesis 3 (H3), as below:

H3: Consumer doubt mediates the relationship between EV adoption barriers and purchase intention.
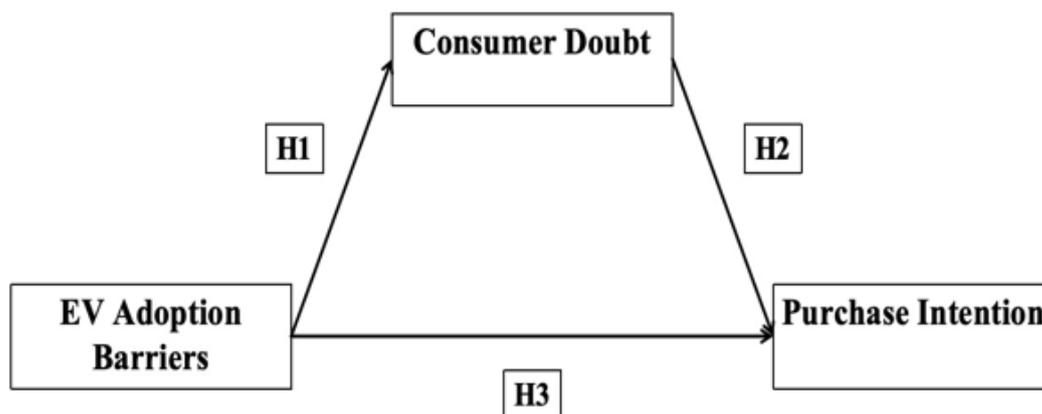


**Figure 1**. Conceptual Framework

## 3. Research Method

This study adopts a quantitative research approach, using a structured questionnaire to measure Thai consumers' perceptions and purchase intentions toward electric vehicles, focusing on quantifiable variables and statistical inference. Data sources include both primary and secondary materials, with the former collected through questionnaires distributed via Wenjuanxing.com in Thai, English, and Chinese. Convenience sampling was used to broaden coverage, though this method may limit the generalizability of the results, and this limitation should be acknowledged more explicitly. A five-point Likert scale was applied, and the instrument was translated and back-translated following best practices, with a pilot test of 30 respondents conducted to refine semantics and flow(Hu et al., 2023). The population is defined as potential EV consumers, and the sample size was calculated using the Yamane (1973) formula with a 5% margin of error, yielding 400 participants to ensure validity. The questionnaire consists of three sections: demographic background and usage experience, core constructs, and policy expectations; constructs cover adoption barriers (economic, infrastructure, psychological, technical), consumer doubts, and purchase intention, with items adapted from prior EV literature and refined through expert review. Data analysis is performed using SPSS, with descriptive statistics to present profiles and constructs, and inferential techniques including independent sample t-tests and multiple regression to test hypothesized relationships among independent, mediating, and dependent variables, ensuring quality control and generalizability of the results.

**Table 1. Descriptive Statistical Analysis of Samples**

| Particular | Variables | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Male | 202 | 50.5 |
| | Female | 198 | 49.5 |
| | Other / Prefer not to say | 0 | 0 |
| Age | 25–35 | 171 | 42.8 |
| | 36–45 | 84 | 21.0 |
| | 46–55 | 76 | 19.0 |
| | 56–65 | 69 | 17.2 |
| Monthly Household Income | Less than 20,000 | 78 | 19.5 |
| | 20,001–40,000 | 137 | 34.3 |
| | 40,001–60,000 | 96 | 24.0 |
| | 60,001–80,000 | 65 | 16.3 |
| | Over 80,000 | 24 | 5.9 |
| Current Employment Status | Employed full-time | 74 | 18.5 |
| | Employed part-time or freelance | 112 | 28.0 |
| | Unemployed | 46 | 11.5 |
| | Student | 98 | 24.5 |
| | Retired or Other | 70 | 17.5 |
| Highest Level of Education Completed | Less than high school | 61 | 15.3 |
| | High school graduate | 109 | 27.3 |
| | Vocational/technical certificate | 159 | 39.8 |
| | Bachelor's degree | 51 | 12.6 |
| | Postgraduate degree and above | 20 | 5 |
| Residence Area | Bangkok metropolitan area | 131 | 32.8 |
| | Other urban area | 102 | 25.5 |
| | Suburban area | 82 | 20.5 |
| | Rural area | 85 | 21.2 |

## 4. Result and Discussion

### 4.1. Result

This study collected and validated 400 offline questionnaires from Thai residents, with a balanced gender distribution (male 50.5%, female 49.5%), an age group primarily concentrated between 25–35 years (42.8%), and a majority reporting monthly household incomes below 40,000 THB (53.8%). The employment structure included a large proportion of part-time workers and students, while educational attainment was dominated by vocational/technical certificates and high school graduates. Respondents' residences covered the Bangkok metropolitan area, other urban centers, suburban districts, and rural areas. A small-scale pilot test was conducted prior to the official survey to verify scale consistency. The formal questionnaire was distributed and collected offline, and descriptive statistics were applied to present demographic characteristics and completion details, thereby providing empirical evidence for identifying the practical barriers faced by Thai consumers in adopting electric vehicles. Details are shown in Table 1.

In processing primary data, a two-step procedure of measurement and structural models was used, beginning with reliability and validity checks. Cronbach's alpha indicated strong internal consistency: financial, technical, infrastructure, and policy dimensions were all ≥0.833 in the full sample, peaking at 0.912; consumer doubt was 0.799 and purchase intention 0.825, both acceptable. Correlations and AVE suggested good convergent validity across latent variables, enabling subsequent path and hypothesis tests.

**Measurement model**

Measurement quality was assessed via t-values, standardized loadings (SLF), composite reliability (CR), and average variance extracted (AVE). All items showed t-values above 1.96, most loadings≥0.50, CR met criteria, and AVE was generally >0.50, confirming dependable validity. Global fit indices were favorable; RMSEA=0.079 indicated acceptable overall fit. The measurement structure stably captured consumer perceptions related to EV constructs, supporting the transition to structural analyses.

**Structural model and hypothesis testing**

The structural model supports all hypotheses with data. H1: EV adoption barriers significantly raise consumer doubt (Table 2): financial $\beta=0.421$ (t=3.931, p=0.001), technical $\beta=0.389$ (t=3.851, p=0.001), infrastructure $\beta=0.365$ (t=3.380, p=0.001). H2: consumer doubt negatively predicts purchase intention (Table 3), $\beta=-0.567$ (t=13.208, p=0.001). H3: mediation is confirmed (Table 4): barriers predict doubt ($\beta=0.391$, t=8.173, p=0.001), and doubt predicts intention ($\beta=-0.567$, p=0.001); the direct path from barriers to intention remains significant, $\beta=0.317$ (t=3.704, p=0.000), indicating a significant partial mediation rather than full mediation.

**Table 2 Regression of EV Adoption Barriers → Consumer Doubt (H1)**

| Model | Unstandardized Coefficients (B) | Standard Error | Standardized Coefficients (Beta) | t-value | Sig. |
|---|---|---|---|---|---|
| Constant | 1.024 | 0.212 | | 4.83 | 0.001 |
| Financial Barriers | 0.342 | 0.087 | 0.421 | 3.931 | 0.001 |
| Technical Concerns | 0.285 | 0.074 | 0.389 | 3.851 | 0.001 |
| Infrastructure Barriers | 0.267 | 0.079 | 0.365 | 3.38 | 0.001 |

Noted: N=400;  *Significant Level at 0.05, p<0.05,  **Significant Level at 0.1, p<0.1*

**Table 3 Regression of Consumer Doubt → Purchase Intention (H2)**

| Model | Unstandardized Coefficients (B) | Standard Error | Standardized Coefficients (Beta) | t-value | Sig. |
|---|---|---|---|---|---|
| Constant | 0.875 | 0.145 | | 6.034 | 0.001 |
| Consumer Doubt | 0.634 | 0.048 | -0.567 | 13.208 | 0.001 |

Noted: N=400;  *Significant Level at 0.05, p<0.05,  **Significant Level at 0.1, p<0.1*

**Table 4. Regression of Consumer Doubt as a Mediator Between EV Adoption Barriers and Purchase Intention (H3)**

| Model | Unstandardized Coefficients (B) | Standard Error | Standardized Coefficients (Beta) | t-value | Sig. |
|---|---|---|---|---|---|
| Constant | 0.875 | 0.145 | | 6.034 | 0.001 |
| EV Adoption Barriers | 0.426 | 0.052 | 0.391 | 8.173 | 0.001 |
| Consumer Doubt | 0.634 | 0.048 | -0.567 | 13.208 | 0.001 |
| Purchase Intention | 0.211 | 0.057 | 0.317 | 3.704 | 0.000 |

Noted: N=400;  *Significant Level at 0.05, p<0.05,  **Significant Level at 0.1, p<0.1*

### 4.2. Discussions

The evidence in Figure 2 indicates that perceived impediments to EV adoption significantly elevate consumer doubts (H1), with the path from EV adoption barriers to doubt showing $\beta=0.391$ ($R^2=0.144$, ***$p<0.001$), a pattern consistent with diffusion theory, which suggests that greater complexity and weaker relative advantage increase hesitation and aligns with findings that economic and infrastructure frictions compound uncertainty (Steinhilber et al., 2013). The link from doubt to purchase intention (H2) is strongly negative at $\beta=-0.567$ ($R^2=0.305$, ***$p<0.001$), reinforcing risk-centric explanations that increased perceived risk suppresses adoption willingness(Yeğin & Ikram, 2022), and consistent with research showing that concerns about performance, charging, and resale value reduce purchase intent(Hu et al., 2023). The model further reveals a direct path from barriers to intention (H3) with $\beta=0.317$ ($R^2=0.033$, ***$p<0.001$), while the doubt pathway remains significant, indicating statistically significant partial mediation: external obstacles shape internal risk perceptions and exert a residual, non-psychological influence on choice through affordability, access, and policy clarity (Techa-Erawan et al., 2024). This mediated mechanism fits S-O-R and TPB reasoning, where environmental constraints alter cognition before influencing behavior, and echoes EV research that shows risk channels transmit the effects of price and charging conditions(Melin et al., 2021), as well as findings that improved driving experiences reduce perceived risk and elevate intention indirectly (Tsai et al., 2024). Taken together, the coefficients imply that progress will come from a dual approach: dampening salient frictions to reduce doubt along the H1→H2 chain, while addressing the residual direct path with transparent TCO, robust charging coverage, and stable, clear incentives.
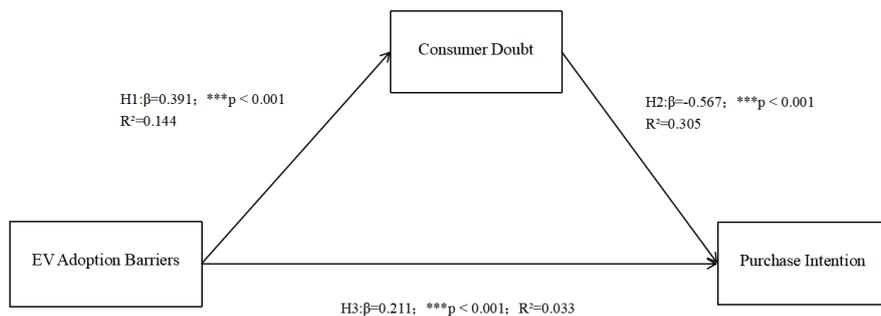


**Figure 2.** Result of the structural model

**Theoretical Contribution**

The study advances adoption theory by fusing the parsimonious logic of the Technology Acceptance Model with the motivational architecture of the Theory of Planned Behavior into a single pathway in which external barriers depress perceived usefulness and ease of use while simultaneously eroding attitudes, norms, and perceived control, and it positions consumer doubt as the core risk construct that transmits these effects to intention(Khurana et al., 2020). By embedding doubt within a stimulus organism response sequence, the framework clarifies how financial, technical, infrastructure, and policy obstacles operate as stimuli that heighten perceived risk and thus reshape EV beliefs in ways consistent with prior green-technology evidence(Berckmans et al., 2017). The model also integrates EV specific extensions to TPB by accommodating environmental values and ethics alongside canonical TPB drivers, which aligns with cumulative meta-analytic findings that attitudes and perceived control dominate intention formation while norms play a secondary role. Situated in Thailand, the work contributes contextual specificity to a literature still concentrated in high income markets by mapping barrier categories to testable links in the TAM–TPB chain and by specifying doubt as the mediating psychological lever that connects structure to choose.

**Practitioner implication**

Findings translate into an action agenda that lifts purchase intention by cutting doubt at its source and by strengthening perceived control, implying that cost relief through low interest green finance and predictable incentives should accompany transparent battery warranties and clear residual value information to mitigate financial risk perception. Accelerated rollout of reliable public and workplace charging, paired with basic home charging support, addresses range and convenience concerns that commonly suppress confidence in everyday use. Communication that amplifies perceived green value and evokes anticipated pride while reducing regret can shift attitudes in favor of EVs and complement infrastructure remedies, yielding intention gains consistent with evidence on environmental value and affect in mobility choices(Techa-Erawan et al., 2024). Policy and marketing should therefore target the specific barrier doubt intention chain identified in the model, prioritizing affordability and technical reliability while maintaining incentive stability, because these levers most efficiently convert hesitant interest into credible purchase plans in the Thai market(Yeğin & Ikram, 2022).

**Research limitation**

Although this study adhered to scientific principles in data collection and analysis, several limitations may affect the generalizability of its findings. The sample was primarily obtained through the Wenjuanxing online survey platform, which tended to attract respondents from urban areas with relatively higher levels of education, potentially underrepresenting individuals living in remote regions with limited exposure to electric vehicles and weaker transportation infrastructure. As a result, the findings may be skewed toward groups with better access to information(Li et al., 2016). Despite the inclusion of multidimensional variables to ensure comprehensiveness, the study's exploration of consumer psychological mechanisms relied heavily on quantitative data, lacking in-depth interviews and behavioral observations that could reveal the dynamic psychological shifts consumers undergo in real-world purchase scenarios(Zhang et al., 2013). Moreover, although the mediating path appeared theoretically plausible, the regression results did not reach statistical significance, suggesting that the explanatory power and robustness of the inference require further validation through larger samples and the inclusion of more control variables. Future research should broaden the

geographic and structural diversity of samples, adopt mixed-method approaches, and incorporate longitudinal tracking to address the methodological and scope-related constraints of this study, thereby enabling a more comprehensive and in-depth understanding of Thai consumers' real perceptions and behavioral logic regarding electric vehicle adoption.

## 5. Conclusion

Using a Thai sample of four hundred respondents, the study shows that financial technical infrastructure and policy barriers elevate consumer doubt, that elevated doubt suppresses purchase intention, and that a direct path from barriers to intention implies partial mediation rather than a fully mediated link. Interpreting the pattern with the Technology Acceptance Model and the Theory of Planned Behavior shows barriers erode perceived usefulness ease of use attitudes and control, a mechanism consistent with evidence that perceived risk reduces adoption willingness and that infrastructure and financing shape capability and readiness(Melin et al., 2021). The pattern accords with reviews that underline the centrality of attitude and control and with findings that better driving experiences lower perceived risk and lift intention indirectly(Yeğin & Ikram, 2022). Practice should target risk relief and capability building through green finance, predictable incentives, battery assurances, and public charging, while research widens coverage and tracks behavior over time.

## References

Ahmad, S., Chaveeesuk, S., & Chaiyasoonthorn, W. (2024). The adoption of electric vehicle in Thailand with the moderating role of charging infrastructure: an extension of a UTAUT. *International Journal of Sustainable Energy*, *43*(1). https://doi.org/10.1080/14786451.2024.2387908

Axsen, J., & Kurani, K. S. (2013). Hybrid, plug-in hybrid, or electric—What do car buyers want? *Energy Policy*, *61*, 532–543. https://doi.org/10.1016/j.enpol.2013.05.122

Berckmans, G., Messagie, M., Smekens, J., Omar, N., Vanhaverbeke, L., & Mierlo, J. Van. (2017). Cost projection of state of the art lithium-ion batteries for electric vehicles up to 2030. *Energies*, *10*(9). https://doi.org/10.3390/en10091314

Brinkmann, D., & Bhatiasevi, V. (2023). Purchase Intention for Electric Vehicles Among Young Adults in Thailand. *Vision: The Journal of Business Perspective*, *27*(1), 110–118. https://doi.org/10.1177/09722629211001981

Champahom, T., Wisutwattanasak, P., Chonsalasin, D., Se, C., Jomnonkwao, S., & Ratanavaraha, V. (2025). Comparing Electric Vehicle Adoption Intentions Across Vehicle Types in Thailand: An Extended UTAUT2 Model with Government Participation. *Transport Policy*, *163*, 408–435. https://doi.org/10.1016/j.tranpol.2025.01.033

Egbue, O., & Long, S. (2012). Barriers to widespread adoption of electric vehicles: An analysis of consumer attitudes and perceptions. *Energy Policy*, *48*, 717–729. https://doi.org/10.1016/j.enpol.2012.06.009

Featherman, M., Jia, S. (Jasper), Califf, C. B., & Hajli, N. (2021). The impact of new technologies on consumers beliefs: Reducing the perceived risks of electric vehicle adoption. *Technological Forecasting and Social Change*, *169*, 120847. https://doi.org/10.1016/j.techfore.2021.120847

Hu, X., Wang, S., Zhou, R., Tong, Y., & Xu, L. (2023). Unpacking the effects of information overload on the purchase intention of electric vehicles. *Journal of Consumer Behaviour*, *22*(2), 468–482. https://doi.org/10.1002/cb.2098

Khurana, A., Kumar, V. V. R., & Sidhpuria, M. (2020). A Study on the Adoption of Electric Vehicles in India: The Mediating Role of Attitude. *Vision: The Journal of Business Perspective*, *24*(1), 23–34. https://doi.org/10.1177/0972262919875548

Kohpaiboon, A. (2024). Policies to Promote EV Uptakes in Thailand. *Southeast Asian Economies*, *41*(3), 221–244. https://doi.org/10.1355/ae41-3c

Li, W., Long, R., & Chen, H. (2016). Consumers' evaluation of national new energy vehicle policy in China: An analysis based on a four paradigm model. *Energy Policy*, *99*, 33–41. https://doi.org/10.1016/j.enpol.2016.09.050

Melin, H. E., Rajaeifar, M. A., Ku, A. Y., Kendall, A., Harper, G., & Heidrich, O. (2021). Global implications of the EU battery regulation. *Science*, *373*(6553), 384–387. https://doi.org/10.1126/science.abh1416

Sun, P., Bisschop, R., Niu, H., & Huang, X. (2020). Correction to: A Review of Battery Fires in Electric Vehicles. *Fire Technology*, *56*(4), 1411–1411. https://doi.org/10.1007/s10694-020-00958-2

Techa-Erawan, T., Ratisukpimol, W., & Bunditsakulchai, P. (2024). The Analysis of Consumer Preference on EV Adoption Barriers and Policy Stimulations in Thailand. *International Journal of Energy Economics and Policy*, *14*(4), 160–168. https://doi.org/10.32479/ijeep.15987

Yeğin, T., & Ikram, M. (2022). Analysis of Consumers' Electric Vehicle Purchase Intentions: An Expansion of the Theory of Planned Behavior. *Sustainability*, *14*(19), 12091. https://doi.org/10.3390/su141912091

Zhang, X., Bai, X., & Shang, J. (2018). Is subsidized electric vehicles adoption sustainable: Consumers' perceptions and motivation toward incentive policies, environmental benefits, and risks. *Journal of Cleaner Production*, *192*, 71–79. https://doi.org/10.1016/j.jclepro.2018.04.252

Zhang, X., Wang, K., Hao, Y., Fan, J.-L., & Wei, Y.-M. (2013). The impact of government policy on preference for NEVs: The evidence from China. *Energy Policy*, *61*, 382–393. https://doi.org/10.1016/j.enpol.2013.06.114