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Electric Vehicle Adoption as a Strategy for Air Pollution Mitigation: An Integrated Environmental Behavior Study in Vietnam

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ABSTRACT

Air pollution and greenhouse gas emissions have emerged as critical environmental challenges in rapidly urbanizing countries such as Vietnam. Promoting electric vehicles (EVs) is widely regarded as a sustainable strategy to mitigate environmental degradation while improving urban air quality. This study examines the environmental and behavioral determinants of EV adoption by integrating the C-TAM-TPB, Value–Attitude–Behavior (VAB), and Stimulus–Organism–Response (SOR) frameworks. Specifically, environmental concern, consumer ethnocentrism, and financial incentive policies are conceptualized as external environmental and policy stimuli that influence individuals' cognitive responses (attitudes), which in turn shape pro-environmental intentions to adopt EVs. Data collected from 259 Vietnamese consumers were analyzed via PLS-SEM. The results reveal that environmental concern and financial incentive policies significantly affect pro-environmental attitudes, acting as a key mediating mechanism for EV purchase intention. Additionally, social influence and perceived behavioral control directly affect behavioral intentions. This study contributes to environmental research by linking behavioral mechanisms with sustainable transportation adoption, offering insights into how policy instruments and environmental awareness can accelerate the transition toward low-emission mobility systems. The findings provide practical implications for policymakers seeking to reduce urban pollution and promote sustainable consumption in emerging economies.

Keywords: *Electric vehicles, Environmental sustainability, Air pollution mitigation, Pro-environmental behavior, Sustainable transportation*

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INTRODUCTION

Air pollution has become a critical global environmental challenge, posing serious threats to ecosystems and human health (Hobbs *et al*., 2025). In response, Vietnam has actively promoted electric vehicles (EVs) as a key solution to mitigate emissions and advance sustainable development. EVs are widely recognized not only as a technological innovation for reducing greenhouse gas emissions but also as a central component of green mobility transitions (Lieven, 2015). Similar policy-driven efforts have been observed in other pollution-affected countries such as China, Malaysia, Turkey, and Pakistan, where governments employ regulatory and financial incentives to stimulate EV purchase intention (Jiang *et al*., 2025). In Vietnam, recent initiatives, including extended registration tax exemptions, further demonstrate strong governmental commitment and provide a relevant context for examining EV consumer behavior.

Despite the growing body of research on EV adoption, most prior studies have relied on either the Technology Acceptance Model (TAM; Davis, 1989) or the Theory of Planned Behavior (TPB; Ajzen, 1991), typically applying these frameworks independently. To address this limitation, Taylor and Todd (1995) proposed the combined C-TAM-TPB model, integrating key constructs such as perceived usefulness (PU), perceived ease of use (PEOU), subjective norms (SN), and perceived behavioral control (PBC). Recent studies have extended this integrated framework. For instance, Vafaei-Zadeh *et al*. (2022) incorporated additional factors such as price value, perceived risk, environmental self-image, and infrastructure barriers to explain behavioral intention. Similarly, Wang *et al*. (2024) highlighted the influence of consumer ethnocentrism (CE) on preferences for domestic EV brands, while Hu *et al*. (2023) emphasized the motivational role of financial incentives.

However, existing studies often overlook the integration of value-based and psychological process perspectives. Specifically, while environmental concern (EC) has been identified as a key driver of green consumption, the limited incorporation of the Value–Attitude–Behavior (VAB) framework and the neglect of the Stimulus–Organism–Response (SOR) model limit a comprehensive understanding of EV purchase intention (Tang *et al*., 2019). The SOR framework is particularly relevant in policy-driven contexts, as it explains how external stimuli—such as incentive policies (IP)—influence internal cognitive and emotional states, which in turn shape behavioral responses. Integrating SOR with C-TAM-TPB and VAB thus enables a more holistic explanation of consumer behavior by capturing utilitarian, normative, value-driven, and

policy-induced effects.

Accordingly, this study develops an integrative research model that combines C-TAM-TPB, VAB, and SOR to examine EV purchase intention in Vietnam. The model incorporates key determinants including PU, PEOU, SN, PBC, CE, EC, and IP, while also emphasizing the mediating role of attitude in translating these factors into behavioral intention. By doing so, the study provides a more comprehensive framework for understanding how financial incentive policies and individual perceptions jointly shape EV adoption in an emerging market.

Methodologically, this study adopts a quantitative approach using partial least squares structural equation modeling (PLS-SEM), which is suitable for analyzing complex models with latent constructs and exploratory theory development (Shakeel, 2022). Based on data collected from 259 respondents, the study empirically tests the proposed relationships and offers both theoretical contributions and practical implications for policymakers and marketers seeking to promote sustainable transportation.

Theorical background and hypotheses

Theorical background of C-TAM-TPB, VAB & SOR theory

In the context of increasing environmental degradation and air pollution, sustainable consumption behavior has emerged as a central topic in environmental and bioscience research. Transportation is a major contributor to greenhouse gas emissions and urban air pollution, making the transition toward cleaner mobility solutions, such as electric vehicles (EVs), essential for environmental protection and public health improvement. From an environmental standpoint, EV adoption is not only a technological shift but also a behavioral response that reflects individuals' awareness of environmental sustainability and their willingness to reduce carbon footprints. Drawing on theories of environmental behavior, environmental concern (EC) is widely recognized as a key driver of pro-environmental actions. Individuals with higher levels of environmental concern are more likely to support the adoption of green products and eco-friendly technologies. This is consistent with the Value–Attitude–Behavior (VAB) framework, which explains how environmental values shape attitudes and subsequently influence behavioral intentions. In the EV context, environmental concern enhances positive attitudes toward EVs by emphasizing their role in reducing emissions and mitigating environmental risks.

Furthermore, the Stimulus–Organism–Response (SOR) framework provides a useful framework for understanding how external environmental and policy-related factors influence individual behavior. Financial incentive policies (IP), such as tax reductions and subsidies, serve as policy instruments that encourage sustainable consumption. These policies act as external stimuli that shape individuals' internal evaluations (e.g., perceived usefulness, perceived ease of use, and attitudes), ultimately leading to behavioral responses such as EV purchase intention. This perspective is particularly relevant in emerging economies, where policy interventions play a crucial role in promoting environmentally responsible behavior.

In addition, social and contextual factors, including subjective norms (SN) and perceived behavioral control (PBC), reflect the broader socio-environmental system in which individuals operate. Social influence can encourage environmentally responsible choices by reinforcing collective norms around sustainability, while perceived behavioral control reflects the availability of infrastructure, such as charging stations, and accessible resources necessary for EV adoption. These factors are critical in translating environmental awareness into actual behavioral outcomes.

The integration of the TAM and TPB, known as the C-TAM-TPB, offers a robust theoretical foundation for understanding consumer adoption of innovative technologies, such as electric vehicles (Vafaei-Zadeh *et al*., 2022). Originally proposed by Davis (1989), TAM posits that individuals' behavioral intentions toward new technologies are primarily driven by perceived usefulness and perceived ease of use. However, TAM's limitation lies in its exclusion of social and behavioral control factors. To overcome this, Taylor and Todd (1995) extended TAM by incorporating Ajzen (1991) TPB elements SN and PB, thus enabling a more comprehensive analysis of external social influence and personal volition in adoption decisions. Despite the strength of this integration, it still lacks a value-based explanatory mechanism, which is addressed by incorporating the VAB model.

VAB complements C-TAM-TPB by linking enduring values to attitudes shaping sustainable behavioral intentions consumer contexts. Previous studies have validated the VAB model in diverse domains, including green car adoption and pro-environmental behaviors (Tamar *et al*., 2021). Therefore, the integration of C-TAM-TPB and VAB provides a more holistic framework for exploring EV purchase intention by capturing both utilitarian and value-driven motivations behind consumer decisions.

SOR explains how external stimuli shape internal states, influencing attitudes and behavioral responses, consumer decision-making (Tang *et al*., 2019). While widely applied in green consumer behavior research, the SOR framework has rarely been used to examine EV purchase intention, especially in emerging markets like Vietnam, where government incentives and environmental issues co-exist as potent triggers of behavioral change.

SOR, C-TAM-TPB, and VAB explain EV intentions via attitudes (Jaiswal *et al*., 2021). In the EV context, PU refers to functional benefits such as cost savings, lower emissions, and improved driving efficiency. Empirical evidence supports a positive relationship between PU and consumer attitude. For instance, Vafaei-Zadeh *et al*. (2022) showed that Malaysian consumers who found EVs useful were more likely to develop favourable attitudes. When perceived utility aligns with values like environmental sustainability and economic efficiency, the likelihood of a positive attitude increases. Perceived usefulness not only reflects functional benefits but also environmental utility, such as emission reduction and energy efficiency. When individuals recognize EVs as effective solutions to environmental problems, they are more likely to develop positive attitudes.

H1: *Perceived usefulness has a positive effect on attitude towards EV.*

Perceived ease of use (PE) refers to users' subjective perception of how easy and understandable a particular technology is (Sharma, 2019). This cognitive judgment significantly contributes to users' attitudes and adoption intentions since technologies perceived to require little physical and mental effort will be adopted more (Wu *et al*., 2019). In the context of

electric vehicles, PE plays a vital role, as customers will tend to adopt new products that are simple to use and simple to learn (Wang *et al*., 2020). PE was further found to enhance the indirect effect on behavioral intention through attitude formation, as it had a positive effect on perceived usefulness. In environmental contexts, simplifying access to sustainable solutions increases the likelihood of pro-environmental behavior.

H2: *Perceived ease of use has a positive effect on attitude toward EV.*

Environmental concern is a core construct in environmental and bioscience research, reflecting individuals' awareness of ecological issues such as pollution and climate change. Consumer ethnocentrism (CE), conceptualized as a belief in the appropriateness and morality of purchasing domestic over foreign products , encompasses cognitive, normative, and affective evaluations that reinforce group identity and national loyalty (Bizumic, 2019). Ethnocentrism encourages domestic EV preference, strengthening attitudes via moral patriotism (Tomić Maksan *et al*., 2019). Despite variations in CE's effect across product categories and consumer evaluations , existing evidence supports its positive role in shaping attitudes toward EV, particularly in developing economies where local consumption is linked with national development goals.

H3: *Consumer ethnocentrism has a positive effect on attitude towards EV.*

Environmental concern strongly drives electric vehicle adoption through ecological benefits (Peters & Dütschke, 2014). Moreover, pro-environmental attitudes, including sensitivity to climate change and energy conservation, are strongly associated with favorable perceptions and purchase intentions toward EV . Attitude has also been identified as a key mediating factor between environmental concern and behavioral intention.

H4: *Environmental concern positively affects the consumer's attitude towards EV.*

Subjective norms reflect social pressure and collective environmental awareness. In environmental contexts, pro-environmental behaviors are often socially reinforced, meaning individuals are more likely to adopt EVs when such behavior is perceived as socially desirable and environmentally responsible. Subjective norms reflect social pressure from significant others influencing behavior (Han *et al*., 2020; Shalender & Sharma, 2021). Subjective norms reflect perceived social expectations encouraging electric vehicle adoption (Asadi *et al*., 2021). Subjective norms, together with attitudes and perceived control, combine to constitute the intention to buy (Shakeel, 2022). Subsequently, the phrase subjective norms refers to the extent to which social and relational processes inspire a consumer to recognize EV as a viable purchase option (Sun *et al*., 2022); further, when people feel that their significant others support their purchase of an EV, the probability of their intention to buy such a vehicle is likely to increase.

H5. *Subjective norm has a positive effect on EV purchase intention.*

Perceived behavioral control is closely linked to environmental infrastructure, such as charging stations and energy systems. Perceived behavioral control (PB) reflects an individual's perception of the ease or difficulty in performing a specific behavior, influenced by available resources, time, and prior experiences (Ajzen & Fishbein, 2005). Higher perceived behavioral control significantly strengthens electric vehicle adoption intentions (Xu *et al*., 2020). Furthermore, the interplay between TPB and value-based frameworks suggests that internalized personal norms, influenced by subjective norms, can also reinforce perceived control by aligning individual values with behavioral goals (Dong & Ge, 2022).

H6. *Perceived behavioral control positively affects EV purchase intention.*

Attitude (AT), defined as an individual's latent disposition to respond with favour or disfavour toward a particular object or behaviour, plays a central role in shaping behavioural intentions. Within the Theory of Planned Behavior (Ajzen, 1991), attitude refers to one's overall evaluation of a behaviour and is widely recognized as a key predictor of intention. In the context of EV, a favourable attitude reflects consumers' positive assessments of EV's environmental benefits, ease of use, and value. Empirical studies consistently confirm the significant and positive link between attitude and EV adoption intention (Yang *et al*., 2020). For example, those who perceive EVs as environmentally beneficial and cost-effective are more likely to purchase them, while negative attitudes hinder intention. Similar patterns are found in other areas like renewable energy (Proudlove *et al*., 2020), cybersecurity (Alanazi *et al*., 2022), and energy-saving behaviours (Xie *et al*., 2021), supporting the robustness of the attitude-intention relationship.

H7: *Attitude towards EV positively affects EV purchase intention*.

Electric vehicles, as innovative transportation technologies, are often priced significantly higher than traditional fuel vehicles, largely due to research, development, and manufacturing cost pressures (Lin & Wu, 2018). This cost disparity has been consistently identified as a critical barrier to EV market diffusion. Financial incentives reduce EV ownership costs and significantly increase purchase intentions across diverse national contexts (Zhuge *et al*., 2020).

H8: *Financial incentive policy positively affects EV purchase intentions*.

Based on the above arguments, **Figure 1** presents the proposed research model.

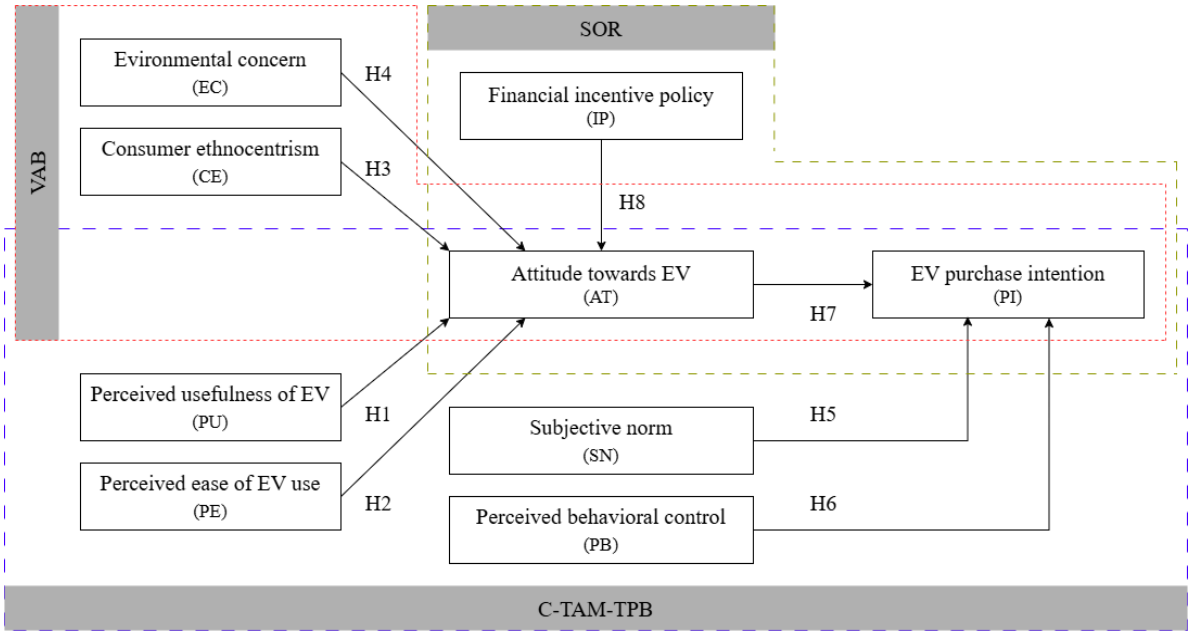

Figure 1. Proposed research model

MATERIALS AND METHODS

Sampling and data collection

A convenience sampling method was employed for data collection. Following Hair (2011), the recommended minimum sample size is five times the number of observed variables; thus, with 29 items, at least 145 responses were required. This study analyzed 259 valid responses out of 294 collected (88% valid rate), with a high response rate (20%) achieved through prior contact with participants. The online survey was conducted in Vietnam via Google Forms from May 15 to May 30, 2025. Respondents were screened with the question "*Have you ever purchased an electric vehicle*?", and only those who had never purchased one continued. To minimize common method bias (Kock *et al*., 2021), multiple procedural remedies were applied, including the use of reverse-coded items as suggested by Weijters and Baumgartner (2012).

The survey followed the principles of "back-translation" because it was originally constructed in English (Brislin, 1980). The scales were adapted and translated into English by two separate business English students, and then the collected results were back-translated into English (Csep *et al*., 2024; Jin *et al*., 2024; Osluf *et al*., 2024; Rypel *et al*., 2024; Clark & Foster, 2025; Joungtrakul & Smith, 2025; Kebe *et al*., 2025; Musa *et al*., 2025; Njoroge & Odhiambo, 2025; Raza *et al*., 2025; Anh *et al*., 2026).

Table 1. Demographic analysis of the subjects (N=259).

Items	Category	Frequency	Percentage
Gender	Male	134	51.7%
	Female	125	48.3%
Driving experience	Experience	182	70.3%
	Without experience	77	29.7%
Education level	Below high school	41	15.8%
	High school	121	46.7%
	University/College	70	27.0%
	Postgraduate	27	10.5%
Priority of EV brand	Domestic EV brand	155	59.8%
	Foreign EV brands	104	40.2%
Income per month	Below 7 million VND	43	16.6%
	7-12 million VND	108	41.7%
	12-17 million VND	76	29.3%
	Over 17 million VND	32	12.4%

The sample (N=259) shows balanced gender distribution, strong driving experience, high educational attainment, preference for domestic EV brands, and middle-income dominance, providing a robust basis for empirical analysis overall analyses **(Table 1)**.

Measurement and analysis

The study uses a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale is completely inherited from previous studies; some terms are adjusted to suit the context

(eg, CE items used by Wang *et al*. (2024) to survey Chinese people will be adjusted). PLS-SEM was chosen due to its suitability for analyzing models with high complexity and multiple latent constructs (Hair *et al*., 2017). Unlike covariance-based approaches, PLS relies on a component-based algorithm that is well-suited for predictive analysis and theory development, particularly in contexts involving intricate structural relationships (Sarstedt *et al*., 2016). Given the multidimensional nature of this study with constructs such as PU, PE, SN, PB, EC, CE, IP, AT, and PI, PLS-SEM was deemed appropriate. Following the two-step analytical strategy recommended by Anderson and Gerbing (1988), the analysis was conducted in two stages: assessment of the measurement model followed by the structural model evaluation.

Measurement model evaluation

The study conducted tests for reliability, convergent validity, and discriminant validity. Firstly, Cronbach's alpha (α) > 0.6 is considered acceptable in exploratory research, indicating that the reliability of the scales is ensured (Hair *et al*., 2022). Besides, all measurement scales have an AVE > 0.5, thus meeting the criteria for convergent validity (Hair *et al*., 2022), and composite reliability (CR) > 0.5 is considered to meet the minimum requirements (Hair *et al*., 2014). Discriminant validity is established when a construct's AVE square root exceeds its correlations with other constructs, indicating theoretical distinctiveness (Fornell & Larcker, 1981). The results show that all α > 0.6, AVE ranges from 0.570 to 0.719, and CR > 0.8 **(Table 2)**.

RESULTS AND DISCUSSION

Table 2. Scale evaluation.

Variables	Items	Loadings	Cronbach's Alpha	CR	AVE
Subjective norm	SN1	0.727	0.762	0.841	0.570
	SN2	0.820			
	SN3	0.688			
	SN4	0.779			
Financial incentive policy	IP2	0.788	0.839	0.892	0.674
	IP3	0.861			
	IP4	0.810			
	IP2	0.788			
Perceived usefulness	PU1	0.742	0.691	0.830	0.619
	PU2	0.800			
	PU3	0.817			
Perceived ease of EV use	PE1	0.831	0.805	0.885	0.719
	PE2	0.856			
	PE3	0.857			
Perceived behavioral control	PB1	0.828	0.751	0.857	0.666
	PB2	0.840			
	PB3	0.778			
Consumer ethnocentrism	CE1	0.781	0.691	0.829	0.618
	CE2	0.764			
	CE3	0.811			
Environment concern	EC1	0.811	0.758	0.861	0.674
	EC2	0.820			
	EC3	0.830			
Attitude toward EV	AT1	0.864	0.783	0.874	0.698
	AT2	0.852			
	AT3	0.788			
EV purchase intention	PI1	0.786	0.721	0.843	0.642
	PI2	0.794			
	PI3	0.822			

Table 3 presents the assessment of discriminant validity. According to, discriminant validity is considered inadequate when the correlation between factors falls below 0.5. Furthermore, the square root of the AVE for each construct exceeds the corresponding inter-construct correlations, confirming the validity of the measurement model (Chin *et al*., 1997). These findings indicate that the theoretical model is appropriate for subsequent analysis.

Table 3. Discriminant validity - Fornel-Lacker criterion.

	AT	CE	EC	IP	PB	PE	PI	PU	SN
AT	0.835								
CE	0.723	0.786							

EC	0.688	0.648	0.821						
IP	0.751	0.652	0.678	0.821					
PB	0.253	0.388	0.361	0.339	0.816				
PE	0.708	0.591	0.586	0.655	0.234	0.848			
PI	0.318	0.332	0.394	0.451	0.340	0.247	0.801		
PU	0.597	0.505	0.509	0.515	0.231	0.550	0.202	0.787	
SN	0.107	0.193	0.257	0.155	0.412	0.075	0.326	0.166	0.755

Structural model evaluation

Table 4. Variables relationship testing.

Relationship	β-value	Std. DEV	f2	p-value	Supported
AT → PI	0.247	0.063	0.0727	0.000	Yes
CE → AT	0.255	0.056	0.1097	0.000	Yes
EC → AT	0.136	0.051	0.0299	0.007	Yes
IP → AT	0.278	0.064	0.1126	0.000	Yes
PB → PI	0.186	0.066	0.0346	0.005	Yes
PE → AT	0.223	0.052	0.0859	0.000	Yes
PU → AT	0.133	0.045	0.0399	0.004	Yes
SN → PI	0.223	0.069	0.0524	0.001	Yes

The R^2 values indicate that the model explains 72.4% of the variance in attitude and 21.4% of the variance in purchase intention, suggesting a substantial explanatory power for internal beliefs but only a weak to moderate influence on behavioral outcomes. Regarding effect size (f^2), financial incentive policy (f^2 = 0.112), consumer ethnocentrism (f^2 = 0.109), and perceived ease of use (f^2 = 0.085) showed notable impacts on attitude, whereas attitude (f^2 = 0.072) and perceived behavioral control (f^2 = 0.034) had small effects on purchase intention. According to Cohen (2013) guidelines, these results reflect small to moderate effect sizes **(Table 4)**.

All hypotheses are supported; attitude strongly predicts purchase intention (β = 0.247), while incentives most strongly shape attitude (β = 0.278), with attitude mediating effects of key antecedents through statistically significant indirect pathways effects **(Table 5)**.

Table 5. Test results of the mediating effect.

Relationship	Std. DEV	β-value	p-value
CE → AT → PI	0.021	0.063	0.003
EC → AT → PI	0.017	0.034	0.043
IP → AT → PI	0.025	0.069	0.007
PE → AT → PI	0.019	0.055	0.003
PU → AT → PI	0.013	0.033	0.014

Common method bias

Before performing the data analysis, we determined the potential for common method bias (CMB) to exist, which happens when both the independent and dependent variables are collected through the same survey instrument and response format (Kock *et al*., 2021). In order to solve this problem, we applied Harman's single-factor test, which is commonly used. We tested all the measurement items through an exploratory factor analysis. As Podsakoff *et al*. (2003) have declared, if a factor explains over 50% of the total variance, then it is a sign of potential CMB. In our research, the maximum variance explained by a factor was just 33.642%, so CMB is unlikely to be a significant issue in this research.

Environmental pollution has become a critical issue in many major cities due to rapid population growth and rising emissions, resulting in deteriorating air quality and adverse impacts on human health and ecosystems. This underscores the urgent need for green mobility solutions as alternatives to internal combustion engine (ICE) vehicles, with electric vehicles (EVs) emerging as a key option in long-term sustainable development strategies (Veza *et al*., 2023). However, despite strong policy support and promotion efforts, EVs still account for a relatively small share of the transportation market compared with conventional vehicles (Zhou *et al*., 2015). This gap highlights the importance of examining the determinants of public intention to adopt EVs, particularly in developing countries such as Vietnam, where governments are actively implementing policies—especially financial incentives—to promote environmentally responsible consumption.

Prior studies identified determinants, yet rarely integrated theories, limiting holistic models examining multiple drivers simultaneously (e.g., Vafaei-Zadeh *et al*. (2022) expanded observations outside of C-TAM-TPB). The study integrates VAB and SOR, confirming attitude as a key mediator linking PU, PE, CE, environmental concern (EC), and incentives to EV purchase intention, aligning with C-TAM-TPB foundations and prior evidence.

From an environmental and bioscience perspective, the findings provide important insights into how policy and psychological factors interact to influence sustainable behavior. In terms of impact, the factor IP has the strongest effect on AT (β = 0.278), affirming the importance of financial support policies from the

government. This reinforces previous findings by Hu *et al*. (2023), while also indicating that the transmission effectiveness of policies to consumer behavior is evident when mediated by awareness and emotions.

CE significantly strengthens attitudes toward EVs (β = 0.255), enabling domestic brand promotion, while EC exerts a weaker effect (β = 0.136), insufficient behavior without supporting financial policies.

In terms of direct impact, subjective norm (SN) and perceived behavioral control (PB) both significantly influence purchase intention (PI). This result is consistent with Ajzen (1991) Theory of Planned Behavior (TPB), which emphasizes that behavior is shaped not only by personal beliefs but also by social pressure and the perception of one's ability to act. In the context of consumers who lack experience with electric vehicles (EVs), establishing social models and ensuring supportive factors (such as charging stations, costs, and after-sales service) can strongly promote behavior.

Importantly, these findings emphasize the linkage between human behavior, environmental policy, and ecological outcomes. The study demonstrates that promoting EV adoption is not only a technological or economic issue but also a behavioral and environmental one, where policy interventions, social dynamics, and individual values collectively contribute to reducing emissions and improving environmental quality. Thus, this research provides interdisciplinary insights into how sustainable consumption behavior can be effectively fostered to support environmental protection and long-term ecological balance.

Theoretical contributions

This study contributes to advancing interdisciplinary understanding of pro-environmental behavior in the context of sustainable transportation. Specifically, it develops an integrated framework combining C-TAM-TPB, VAB, and SOR to explain electric vehicle (EV) purchase intention as a form of environmentally responsible behavior. By incorporating financial incentive policies as external environmental stimuli within the SOR framework, the study extends existing environmental behavior theories to more effectively capture the role of institutional interventions in shaping sustainable consumption. Furthermore, the study empirically confirms the mediating role of attitude as a key psychological mechanism linking environmental concern, policy stimuli, and behavioral intention, thereby enriching the environmental research discourse on how human behavioral responses contribute to environmental sustainability and emission reduction.

Practical contributions

This study offers evidence-based implications for promoting eco-friendly mobility solutions. The findings highlight financial incentives as a critical lever in encouraging the adoption of low-emission technologies such as EVs, thereby supporting efforts to mitigate air pollution and environmental degradation. In addition, the roles of environmental concern, consumer ethnocentrism, and social influence suggest that policies should integrate environmental education, public awareness campaigns, and locally tailored strategies to foster sustainable consumption patterns. These insights are particularly relevant for policymakers and stakeholders in emerging economies seeking to design effective interventions that align human behavior with environmental protection and long-term ecological sustainability.

CONCLUSION

This study examines electric vehicle adoption as a pro-environmental behavior contributing to pollution mitigation and sustainable transportation development in Vietnam. By integrating behavioral and environmental frameworks, the findings confirm that attitude serves as a key mechanism through which environmental concern and policy incentives influence behavioral intention.

The results emphasize that achieving environmental sustainability requires not only technological innovation but also effective policy design and behavioral change strategies. Financial incentives, environmental awareness, and social influence collectively play essential roles in accelerating the transition toward low-emission mobility systems.

Despite limitations related to sample size and cross-sectional design, this study provides valuable insights for environmental management and policy development in emerging economies. Future research should explore longitudinal and cross-country analyses to better understand the long-term environmental impacts of EV adoption.

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ETHICS STATEMENT: This study complies with ethical standards and does not involve human or animal experimentation requiring approval.

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