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Exploring Electric Vehicle Purchase Intention among Cambodian Generation Z: Evidence from the Technology Acceptance Model

Chhayna Cheng[1] ✉
Borey Ngoeurn[2]

[1,2]*Faculty of Business Administration, BELTEI International University, Phnom Penh, Cambodia.*
(✉ Corresponding Author)

Abstract

Understanding the factors influencing electric vehicle purchase intention is essential for promoting sustainable and eco-friendly transportation in developing countries such as Cambodia. This study addresses the gap in empirical research by examining how perceived ease of use, perceived usefulness, and attitude influence electric vehicle purchase intention among Cambodian Generation Z undergraduate students using the Technology Acceptance Model (TAM). Using a quantitative correlational approach, data were collected from 245 Gen Z undergraduate students across four faculties at BELTEI International University in Cambodia through structured questionnaires and analyzed using Excel and SPSS. The results reveal that perceived ease of use, perceived usefulness, and attitude significantly and positively influence electric vehicle purchase intention. In addition, perceived ease of use significantly affects perceived usefulness and attitude, while perceived usefulness also has a positive effect on attitude. The findings further demonstrate that attitude plays a significant mediating role in the relationships between perceived ease of use, perceived usefulness, and electric vehicle purchase intention. The mediating effects of attitude are also confirmed by the Sobel test results, demonstrating a significant indirect effect of perceived ease of use (z-Test = 5.45, $p < 0.001$) and perceived usefulness (z-Test = 5.89, $p < 0.001$) on electric vehicle purchase intention through attitude. Overall, these results confirm the applicability of TAM in explaining consumer adoption behavior in the Cambodian context and highlight the importance of enhancing usability, perceived benefits, and positive attitudes to encourage electric vehicle adoption among young consumers.

Keywords: Cambodia, Electric vehicle, Generation Z (Gen Z), Technology acceptance model (TAM).

1. Introduction

In modern society, technology has increasingly transformed communities into more advanced and interconnected systems, substantially influencing various industries, particularly the automotive sector (Wolff, 2021; Rehman et al., 2024). Consequently, the automotive industry is undergoing a major transformation driven by the rapid growth of electric vehicles (EVs) and technological advancements in manufacturing processes (Yamini et al., 2025). Current trends indicate a strong and increasing global interest in EVs, as the market has grown significantly and spread across several countries (Fesli & Ozdemir, 2024). For instance, the global electric vehicle market share, including battery electric and plug-in hybrid vehicles by country in 2023, illustrates adoption levels rather than overall market contribution (Fesli & Ozdemir, 2024). Norway ranked first with 93%, followed by Sweden (60%) and China (38%), while the United Kingdom and Germany each recorded approximately 24%, and the European Union reported an average of 22% (Fesli & Ozdemir, 2024).

In contrast, EV adoption remains relatively lower in the United States (10%), India (2%), and South Africa (1%), demonstrating substantial disparities in global EV diffusion (Fesli & Ozdemir, 2024). In ASEAN, several supportive countries have promoted the adoption of battery electric vehicles, with Thailand recording the highest EV sales at 78.7% in 2023, followed by Indonesia at 8% (as of Q1 2023) (Direkudomsak, 2023). In Cambodia, EV development primarily depends on imports, while the level of EV adoption remains relatively low compared to other ASEAN countries (Chea, 2026). Nevertheless, a major milestone was achieved when more than 600 EVs were registered in 2023 (Ministry of Public Works and Transport [MPWT], 2024). Since then, EV adoption has increased rapidly, reaching 14,534 registered vehicles by February 2026, including 10,363 electric cars, 3,449 electric motorcycles, and 722 electric three-wheelers, reflecting substantial growth in EV adoption in Cambodia (MPWT, 2024).

The Royal Government thereby introduced the National Policy on the Development of Electric Vehicles (2024–2030), which aims to promote investment, enhance charging infrastructure, and ensure that Cambodia's economic development remains aligned with global trends (MPWT, 2024). Previous studies suggest that EV adoption provides numerous benefits, including technological innovation (Fesli & Ozdemir, 2024), cost efficiency, improved performance, and continuous technological advancement (Zaino et al., 2024), as well as environmental

and health benefits such as lower emissions, better air quality, and climate change mitigation (Carey, 2023; Zhu et al., 2023). These advantages have attracted increasing scholarly attention to the factors influencing consumers' EV purchase intention (Bektaş & Akyıldız Alçura, 2024; Sun & Lee, 2024). Using established theoretical frameworks, prior research has identified psychological, technological, and behavioral factors that shape consumers' adoption decisions (Bektaş & Akyıldız Alçura, 2024; Sun & Lee, 2024).

Using the Technology Acceptance Model (TAM), Bektaş and Akyıldız Alçura (2024) found that perceived usefulness (PU) and perceived ease of use (PEOU) significantly increase EV purchase intention among Turkish users. PU reflects perceived economic, technological, and environmental benefits, whereas PEOU represents the convenience and simplicity of EV operation and charging. Similarly, Sun and Lee (2024) reported that PU and PEOU positively influence EV purchase intention among Chinese and South Korean consumers by enhancing perceptions of performance, cost savings, environmental value, and ease of use. However, prior research has primarily applied the TAM to investigate electric vehicle (EV) adoption in developed countries, with limited evidence focusing on Generation Z (Gen Z) in developing countries such as Cambodia. Therefore, this study applies and extends the TAM model to examine EV purchase intention among Cambodian university Generation Z students by analyzing the relationships among perceived ease of use, perceived usefulness, attitude, and EV purchase intention. Accordingly, the research objectives of this study are as follows:

RO1: To investigate the effect of perceived ease of use on EV purchase intention among Cambodian Gen Z.

RO2: To investigate the effect of perceived usefulness on EV purchase intention among Cambodian Gen Z.

RO3: To investigate the effect of perceived ease of use on perceived usefulness toward EV purchase intention among Cambodian Gen Z.

RO4: To investigate the influence of perceived ease of use on attitude toward EV purchase intention among Cambodian Gen Z.

RO5: To investigate the effect of perceived usefulness on attitude toward EV purchase intention among Cambodian Gen Z.

RO6: To investigate the effect of attitude on EV purchase intention among Cambodian Gen Z.

RO7: To analyze the mediating role of attitude in the relationships between perceived ease of use and EV purchase intention among Cambodian Gen Z.

RO8: To analyze the mediating role of attitude in the relationships between perceived usefulness and EV purchase intention among Cambodian Gen Z.

2. Literature Review

2.1. Overview of Electric Vehicles

According to the IEA (2023), EVs accounted for about 20% of global vehicle sales in 2023, reflecting a significant increase in market share and highlighting the growing importance of electric mobility in the global transportation industry. EVs are generally defined as vehicles that convert electrical energy into motion and are categorized into Hybrid Electric Vehicles, Plug-in Hybrid Electric Vehicles, and Battery Electric Vehicles (Bektaş & Akyıldız Alçura, 2024). Among these, BEVs are fully battery-powered vehicles that operate solely on electricity (Bektaş & Akyıldız Alçura, 2024), while Ghosh (2020) further expands EVs to include electric cars, motorbikes, bicycles, and other battery-powered transport modes. EVs provide numerous benefits, including lower greenhouse gas emissions, improved air quality, government incentives, and reduced operating costs due to cheaper electricity compared to gasoline or diesel (Bektaş & Akyıldız Alçura, 2024).

Consumer interest in EV adoption has grown significantly, particularly among Gen Z, who are more inclined toward EV adoption in today's digitally advanced society (Wulandari, 2023; Messias et al., 2025). Gen Z, defined as individuals born between 1997 and 2012, represents a major consumer segment with increasing purchasing power (Messias et al., 2025). As they enter the workforce and gain financial independence, understanding their consumption patterns has become increasingly important for researchers and marketers (Mitić & Vehapi, 2021). Prior studies have widely applied the TAM to explain Gen Z's EV purchase intention across different contexts, including the USA (Pamidimukkala et al., 2024), Romania (Catană et al., 2025), China (Wang et al., 2022), Taiwan (Tsai et al., 2025), and Indonesia (Salim, 2024; Utari & Yasa, 2024). These findings consistently show that PEOU and PU significantly and positively influence EV purchase intention, indicating that technological perceptions shape favorable adoption intentions when EVs are viewed as useful, efficient, and easy to use.

The findings reinforce the robustness of TAM in explaining technology adoption behavior, where PU and PEOU determine users' intentions toward innovative technologies (Hiew et al., 2022). In the Cambodian context, empirical studies applying TAM to EV purchase intention among Gen Z remain limited. Existing research highlights factors such as affordability, charging convenience, maintenance cost, and availability as important influences (Keo, 2023; Jung et al., 2025). However, there is still a need for a focused TAM-based investigation to in-depth understand how the TAM framework shapes EV purchase intention among Cambodian Gen Z university students. Finally, this study contributes conceptually by applying and extending the TAM to explain both the direct and indirect determinants of EV purchase intention among Cambodian Gen Z university students. Contextually, it provides empirical evidence from the Cambodian higher education setting, where research on EV adoption remains limited. Methodologically, the study employs a rigorous quantitative approach to validate the proposed structural relationships and mediating effects.

2.2. Theoretical Background of Technology Acceptance Model

This study is theoretically grounded in the Technology Acceptance Model (TAM) (Davis, 1989), which is based on two core cognitive constructs: perceived usefulness and perceived ease of use. PU refers to the extent to which an individual believes that using a system enhances performance or provides value, while PEOU reflects the degree to which a system is effortless and convenient to use (Davis, 1989; Chawla et al., 2023). These constructs are central in explaining users' attitudes toward technology adoption, where PEOU also positively influences PU, supporting the causal relationships within TAM (Lee et al., 2025; Chen et al., 2025). The TAM framework has

been widely applied across different contexts, including e-services adoption in Saudi Arabia (Mohamed & Ahmed, 2020), online shopping behavior in Taiwan (Hsieh & Liao, 2021), digital wallet usage in Vietnam (Lee & Thoo, 2022), and mobile banking adoption in Cambodia (Em et al., 2021). Hence, this study applies the TAM framework to extend and examine the direct and indirect determinants of electric vehicle purchase intention among Cambodian Gen Z university students, providing a focused understanding of how the TAM framework shapes cognitive evaluations in a developing country context.

2.3. Hypothesis Development

2.3.1. Perceived Ease of Use and Electric Vehicle Purchase Intention

Electric vehicle purchase intention (EVPI) refers to a decision-making process that includes need recognition, information search, evaluation of alternatives, purchase decision, and post-purchase evaluation, based on individuals' needs, preferences, and available information (Arviya & Ramli, 2024; Hutabarat & Nusraningrum, 2025). Jaiswal et al. (2022) found that EVPI among young consumers is influenced by PEOU, particularly when EVs are seen as simple to operate, requiring minimal effort, and supported by accessible charging infrastructure. Consistently, prior studies report that PEOU has a significant positive effect on EV purchase intention (Sun & Lee, 2024; Bektaş et al., 2024; Christianto & Lahindah, 2025). Accordingly, the following hypothesis is proposed:

H_1: Perceived ease of use has a significant positive influence on electric vehicle purchase intention.

2.3.2. Perceived Usefulness and Electric Vehicle Purchase Intention

PU, which reflects the perceived benefits of using a product, has been found to significantly and positively influence consumers' intention to purchase electric vehicles (Worasatepongsa & Prakthayanon, 2022). Similarly, Utari and Yasa (2024) identified PU as a key determinant of EV purchase intention among Indonesian consumers. When EVs are perceived to provide benefits such as environmental friendliness, lower operating costs, and cost savings, consumers are more likely to develop stronger purchase intentions (Kamal et al., 2020; Wang et al., 2022; Utari & Yasa, 2024). Overall, prior studies consistently confirm that PU plays a crucial role in shaping EV purchase intention (Belmonte et al., 2024; Kurniawan & Samryn, 2024; Tsai et al., 2025). Thus, this study postulates the following hypothesis:

H_2: Perceived usefulness has a significant positive influence on electric vehicle purchase intention.

2.3.3. Perceived Ease of Use and Perceived Usefulness

PEOU refers to an individual's belief that a technology system can be operated with minimal effort and in a simple manner (Luo et al., 2024). It includes ease of learning, clarity, and overall user-friendliness, which help build user confidence in technology (Ayanwale & Ndlovu, 2024). PU refers to the degree to which a technology is perceived as beneficial and capable of meeting user needs (Saleh, 2024). Prior studies indicate that PEOU is a key predictor of PU in EV adoption, supported by improved efficiency, easier charging, better infrastructure access, and simplified maintenance (Ayanwale & Molefi, 2024; Saleh et al., 2024). Empirical evidence consistently confirms that PEOU significantly influences PU in the context of EV purchase intention (Bektaş et al., 2024; Pamidimukkala et al., 2024; Saleh et al., 2025). Accordingly, the following hypothesis is proposed:

H_3: Perceived ease of use has a significant positive effect on perceived usefulness toward electric vehicle purchase intention.

2.3.4. Perceived Ease of Use and Attitude

PEOU indicates the extent to which an individual believes that using a technology system is effortless and easy to operate (Davis, 1989). Attitude is a key psychological factor influencing purchase intention (Macheka et al., 2024) and includes cognitive, affective, and conative components (Ding & Lee, 2024), where the cognitive component relates to beliefs, the affective component to emotions, and the conative component to behavioral intention toward EVs. PEOU is considered an important determinant of attitude, as easy-to-use technologies tend to generate more favorable evaluations (Hutabarat & Nusraningrum, 2025). Prior studies consistently confirm that PEOU positively influences attitude toward EV purchase intention (Rachmawati & Rahardi, 2023; Salim, 2024; Christianto & Lahindah, 2025). Accordingly, the following hypothesis is proposed:

H_4: Perceived ease of use has a significant positive effect on attitude toward electric vehicle purchase intention.

2.3.5. Perceived Usefulness and Attitude

PU refers to the extent to which an individual believes that using a technology delivers benefits and improves quality of life when adopting an innovation (Vafaei-Zadeh et al., 2022; Albayati, 2024). It is linked to rational evaluations of technology acceptance, including enhanced performance, efficiency, effectiveness, and satisfaction of user expectations (Kurniawan & Nugroho, 2021; Mican & Sitar-Tăut, 2023). Attitude (ATT) represents an individual's overall evaluation of a behavior, reflecting positive, neutral, or negative feelings toward adopting a technology based on perceived benefits (Rachmawati & Rahardi, 2023; Majeed et al., 2024; Palomino Rivera & Barcellos-Paula, 2024). Previous studies have consistently shown that PU positively influences consumers' attitudes toward EV purchase intention (Salim, 2024; Utari & Yasa, 2024; Catană et al., 2025). Thus, this study postulates the following hypothesis:

H_5: Perceived usefulness has a significant positive effect on attitude toward electric vehicle purchase intention.

2.3.6. Attitude and Electric Vehicle Purchase Intention

According to Davis (1989), technology adoption is reflected in individuals' behavioral intentions, which are influenced by personal factors such as attitude. ATT toward purchase refers to an individual's overall evaluation of a buying decision, expressed through positive or negative feelings toward the behavior (Majeed et al., 2024). Empirical evidence shows that ATT strongly predicts EV purchase intention, with Wang et al. (2022) identifying it as the most influential factor among Chinese consumers and Jaiswal et al. (2021) confirming its significant effect among Indian consumers. Overall, prior studies consistently indicate that ATT has a significant positive effect on

consumers' intention to purchase EVs (Ali & Naushad, 2022; Mohd Noor et al., 2025; Ng et al., 2025; Purwanto et al., 2025). Accordingly, the following hypothesis is proposed:

H_6: Attitude has a significant positive influence on electric vehicle purchase intention.

2.3.7. Mediating Role of Attitude

Attitude is a key determinant of behavioral intention in the TAM and plays an important role in explaining technology adoption (Vijayan & Oo, 2022). According to TAM, PEOU and PU influence users' attitudes, which subsequently affect their purchase intention (Davis, 1989). Thus, attitude serves as a psychological mechanism through which users' perceptions are translated into behavioral intentions (Okaviantari et al., 2023; Udiyana et al., 2025). Existing studies have consistently confirmed that attitude mediates the relationships between PEOU and purchase intention (Vijayan & Oo, 2022; Satti & Khan, 2023; Udiyana et al., 2025), as well as between PU and purchase intention (Wiprayoga et al., 2023; Satti & Khan, 2023; Turan, 2026). Therefore, the following hypotheses are proposed:

H_7: Attitude mediates the relationship between perceived ease of use and electric vehicle purchase intention among Cambodian Generation Z.

H_8: Attitude mediates the relationship between perceived usefulness and electric vehicle purchase intention among Cambodian Generation Z.

2.4. Conceptual Framework

Drawing on the TAM model and prior empirical studies, this study proposes a conceptual framework to explain EV purchase intention among Cambodian Generation Z university students. The framework includes PEOU, PU, ATT, and EV purchase intention (EVPI). Specifically, it examines the direct effects of PEOU and PU on EVPI, the effect of PEOU on PU, the effects of PEOU and PU on ATT, and the effect of ATT on EVPI. In addition, ATT is proposed to mediate the relationships between PEOU and EVPI and between PU and EVPI. The proposed conceptual framework is presented in Figure 1.

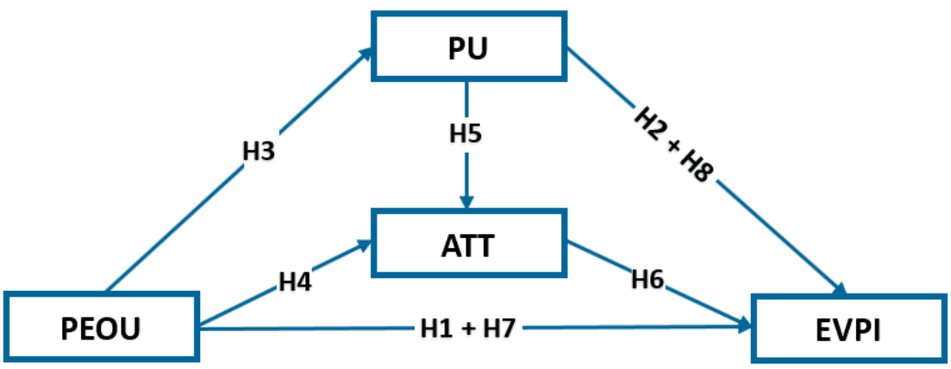

Figure 1.
Conceptual Framework.
Source: Adapted from Davis (1989).

3. Data and Methodology

3.1. Research Design

This study employed a quantitative correlational research design to investigate the associations between the identified factors and Gen Z electric vehicle purchase intention. A quantitative approach was chosen because it facilitates the systematic examination of variables, statistical analysis of relationships among constructs, and includes a relatively large sample, enhancing statistical validity and representativeness (Creswell & Creswell, 2023). A correlational design was adopted to evaluate the relationships between the five proposed predictors and EV purchase intention (Creswell & Creswell, 2023). Data were obtained from undergraduate students using survey questionnaires, as this method facilitated efficient data collection from a large sample and enabled the examination of participants' perceptions and experiences (Ranganathan & Caduff, 2023). Overall, this research design was well-suited for achieving the study objectives and examining the proposed hypotheses.

3.2. Research Design

An unknown population was considered for sample size determination in this study, with data obtained from Gen Z university students across four faculties, namely the Faculty of Business Administration, Finance and Banking, Law, and Information Technology, at BELTEI International University, including both Campus 1 and Campus 2. As recommended by Uakarn et al. (2021), the minimum sample size was determined using the Cochran formula: $n = p(1-p)\ Z^2 \div e^2$, which produced a required minimum of 139 participants. In this formula, n represents the sample size, p is the estimated population proportion ($p = 0.1$), e is the acceptable margin of sampling error ($e = 0.05$), and z is the standard normal deviate associated with the selected confidence level (Uakarn et al., 2021). For a 95% confidence level ($\alpha = 0.05$), the corresponding z-value is 1.96 (Uakarn et al., 2021). The adequacy of the sample size is critical for ensuring the reliability of multiple regression analysis, which generally requires a case-to-independent variable ratio of at least 40:1 (Austin & Steyerberg, 2015).

Given that this study utilized both simple and multiple linear regression analysis to examine the hypotheses, the final sample size should surpass the minimum requirement to strengthen the robustness and statistical power of the analysis (Hair et al., 2019). Accordingly, 245 respondents were recruited using convenience sampling (Scholtz, 2021) from four faculties at Toul Sleng (Campus 1) and Chom Chao Flyover Campus (Campus 2), BELTEI International University, Phnom Penh, Cambodia. The respondents were selected based on a minimum requirement of basic awareness of EVs (e.g., electric cars, motorbikes, or bicycles), ensuring that all participants

had sufficient familiarity with the concept to provide informed responses. Although the sample offers sufficient data for statistical analysis, its non-random nature limits representativeness. Therefore, the findings should be viewed as reflecting patterns within this particular context rather than being extended to the wider student population.

3.3. Research Instruments

As presented in Table 1, the structured questionnaire consisted of respondents' demographic characteristics and initial measurement items adopted from previous studies. The items were revised to align with the research context and objectives, thereby ensuring clarity and validity. The questionnaire was translated into Khmer and subsequently back-translated into English by two bilingual colleagues, with slight modifications made following a pilot study to improve clarity and comprehension. A bilingual (Khmer–English) version was administered for data collection. Participants' responses were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with the mean scores classified as follows: 1.00–1.79 = strongly disagree (SD), 1.81–2.59 = disagree (D), 2.60–3.39 = moderate (M), 3.40–4.19 = agree (A), and 4.20–5.00 = strongly agree (SA) (Koo & Yang, 2025).

Table 1. A summary of the construct measurement.

Constructs	Items	Sources
Perceived Ease of Use	PEOU1–PEOU4	Sun and Lee (2024); Bektaş and Akyıldız Alçura (2024).
Perceived Usefulness	PU1–PU4	Sun and Lee (2024); Salim (2024)
Attitude	ATT1–ATT4	Buhmann et al. (2024); Handarujati (2024)
Electric Vehicle Purchase Intention	EVPI1–EVPI5	Al-Amin et al. (2016); Solekah et al. (2023); Dutta (2025); Buhmann et al (2024)

3.4. Data Collection Procedures

The data collection was conducted in two phases among Cambodian Gen Z university students from four faculties at BELTEI International University (Campus 1 and Campus 2). A pilot study involving 100 respondents was performed from May 15 to May 17, 2026, to evaluate the clarity of the questionnaire items and assess the instrument's reliability. Based on the pilot study results, minor revisions were made to improve the wording and comprehensibility of the questionnaire. Subsequently, the main survey was administered to 245 respondents from May 19 to May 27, 2026. The questionnaire was distributed via Google Forms through Telegram across both campuses. Participation was voluntary, and informed consent was obtained from all respondents before data collection. Participants were also assured that their responses would remain confidential and be used solely for academic research purposes. The collected data were analyzed using descriptive statistics, reliability analysis, correlation analysis, and multiple regression analysis to examine the relationships between the independent variables and Gen Z's electric vehicle purchase intention and to test the hypotheses.

3.5. Data Analysis Method

The data were analyzed using Microsoft Excel 2015 and the Statistical Package for the Social Sciences (SPSS 27). Microsoft Excel was used for data coding, screening, and preliminary cleaning, while SPSS was employed for statistical analysis. The analysis process involved several stages, including exploratory factor analysis (EFA), reliability testing, descriptive statistics, analysis of level of agreement, correlation analysis, automatic linear modeling, diagnostics for multicollinearity, and regression analysis. EFA was conducted using principal component analysis with varimax rotation to identify the underlying factor structure and refine the measurement scales (Groth et al., 2013). Multicollinearity diagnostics were performed to ensure the absence of high intercorrelations among the independent variables before conducting the regression analysis.

Finally, multiple regression analysis was applied to test the hypothesized relationships between the study variables. Overall, the analysis method follows three primary regression equations: (3) a multiple regression equation examining the effects of PEOU and PU on EVPI, (2) a simple linear regression equation examining the effect of PEOU on PU, (3) a multiple regression equation examining the effects of PEOU and PU on ATT, (4) a simple linear egression equation examining the effect of ATT on EVPI, (5) (5) a mediation regression equation examining the indirect effects of PEOU and PU on EVPI through ATT and structured as follows:

$$EVPI = \beta_0 + \beta_1 (PEOU) + \beta_2(PU) + \varepsilon_i \quad [1]$$

Where: Flow path

EVPI = Dependent variable — Hypothesis 1: PEOU → EVPI

β_0 = Intercept term — Hypothesis 2: PU → EVPI

$\beta 1$ = Regression coefficient (PEOU)

$\beta 2$ = Regression coefficient (PU)

PEOU = Independent variable

PU = Independent variable

εi = Error term

$$PU = \beta_0 + \beta_1(PEOU) + \varepsilon_i \quad [2]$$

Where: Flow path

PU = Dependent variable — Hypothesis 3: PEOU → PU

β_0 = Intercept term

$\beta 1$ = Regression coefficient (PEOU)

PEOU = Independent variable

εi = Error term

$$ATT = \beta_0 + \beta_1(PEOU) + \beta_2(PU) + \varepsilon_i \quad [3]$$

Where: Flow path

ATT = Dependent variable — Hypothesis 4: PEOU → ATT

β_0 = Intercept term Hypothesis 5: PU → ATT
β_1 = Regression coefficient (PEOU)
β_2 = Regression coefficient (PU)
PEOU = Independent variable
PU = Independent variable
εi = Error term

$$EVPI = \beta_0 + \beta_1(ATT) + \varepsilon_i \quad [4]$$

Where: Flow path
EVPI = Dependent variable Hypothesis 6: ATT → EVPI
β_0 = Intercept term
$\beta 1$ = Regression coefficient (ATT)
ATT = Independent variable
εi = Error term

$$EVPI = \beta 0 + \beta 1\ (PEOU) + \beta 2\ (PU) + \beta 3\ (ATT) + \varepsilon i \quad [5]$$

Where: Flow path
EVPI = Dependent variable Hypothesis 7: PEO → ATT → EVPI
$\beta 0$ = Intercept term Hypothesis 8: PU → ATT → EVPI
β_1 = Regression coefficient (PEOU)
β_2 = Regression coefficient (PU)
β_3 = Regression coefficient (ATT)
PEOU = Independent variable
PU = Independent variable
ATT = Mediating variable
ε_i = Error term

4. Results

The results of this study are highlighted in several characteristics. The analysis begins with exploratory factor analysis, followed by reliability testing to examine the internal consistency of the measurement scales. Subsequently, respondent demographics are presented to describe the sample profile. This is followed by an assessment of common method variance, along with correlation analysis and level of agreement analysis to examine the interrelationships among the study variables and the response patterns of the respondents. Automatic linear modeling is conducted to identify key predictors and assess their relative importance. Before regression analysis, collinearity diagnostics are performed to ensure the absence of multicollinearity among the independent variables. Finally, both simple linear regression and multiple linear regression analyses are conducted to test the hypothesized relationships among the study variables.

4.1. Respondent Demographics

Table 2 presents the respondent demographics of the 245 participants in the study. The sample was predominantly female and largely consisted of students aged 18–20 years. The Faculty of Law accounted for the largest proportion of respondents, followed by the Faculty of Business Administration and the Faculty of Finance and Banking, whereas the Faculty of Information Technology represented the smallest proportion. Regarding transportation, most students reported using motorcycles as their primary mode of transport, followed by bicycles, walking, and ride-hailing services, while only a small proportion used cars. Finally, the majority of respondents indicated that environmental concern was very important in their daily lives, followed by those who considered it important or moderately important, whereas only a small proportion reported rarely taking into account environmental concern.

Table 2. Demographic characteristics of the respondents.

Demographic	Description (n = 245)	Frequency	Percentage (%)
Gender	Male	70	28.6
	Female	175	71.4
	18 – 20 years old	198	80.8
Age Gap	21 – 23 years old	43	17.6
	24 – 26 years old	2	0.8
	27 – 29 years old	2	0.8
	Faculty of Business Administration	85	34.7
Faculty	Faculty of Finance and Banking	45	18.4
	Faculty of Information Technology	17	6.9
	Faculty of Law	98	40.0
	Motorcycle	215	87.8
	Car	7	2.9
Primary Mode of Transportation	Public transportation	2	0.8
	Ride-hailing services (Grab, PassApp, etc.)	5	2.0
	Bicycle	9	3.7
	Walking	7	2.9
	Very important	130	53.1
Environmental Concern	Important	81	33.1
	Neutral	25	10.2
	Not very important	5	2.0
	Never	4	1.6

4.2. Exploratory Factor Analysis

Exploratory factor analysis (EFA) was conducted in the initial stage using a separate dataset independently collected from the main sample to identify the underlying factor structure and support item refinement. Given the exploratory nature of this preliminary phase and the relatively small sample size (n = 100), the EFA results were primarily used for item screening and should not be interpreted as definitive evidence of construct validity. Item purification was guided by a dual-criterion approach incorporating both statistical evidence and theoretical justification, ensuring that item deletion decisions were not solely data-driven but also aligned with conceptual relevance.

From a theoretical perspective, item retention was grounded in established literature and the conceptual definitions of each construct, ensuring that the remaining indicators adequately represented their intended latent dimensions. In addition, several criteria were applied in this exploratory factor analysis, including factor loadings (FL) greater than 0.60 (Kline, 1994), Kaiser-Meyer-Olkin (KMO) and Bartlett's test values exceeding 0.60 (Hutcheson & Sofroniou, 1999), eigenvalues (E) above 1, and cumulative variance (Cu%) explained exceeding 60% (Hair et al., 2014). Overall, the findings demonstrate that all assessment criteria were satisfied, including FL, KMO, eigenvalues, and cumulative variance, as presented in Table 3 from highest to lowest values.

Table 3. Exploratory factor analysis results.

Constructs		Factor Analysis			
		FL	KMO	E	Cu%
Perceived Ease of Use (PEOU)					
PEOU2	I find the features of electric vehicles (EVs) easy to understand.	0.843	0.789	2.534	63.349
PEOU1	I think an EV is easy to operate.	0.789			
PEOU3	I believe it is easy to learn how to charge an EV.	0.779			
PEOU4	I feel comfortable operating an EV.	0.770			
Perceived Usefulness (PU)					
PU3	EVs can reduce my transportation costs.	0.842	0.788	2.721	68.018
PU1	I think using EVs will improve my life.	0.810			
PU4	EVs are environmentally friendly.	0.799			
PU2	Using EVs is seen to enable my travel efficiency.	0.792			
Attitude (ATT)					
ATT1	I think purchasing an EV is a good concept.	0.865	0.811	2.751	68.785
ATT3	EVs can reduce my transportation costs.	0.863			
ATT2	I think buying an EV is a wise decision for the future.	0.823			
ATT4	I think EVs are over conventional gasoline vehicles.	0.762			
Electric Vehicle Purchase Intention (EVPI)					
EVPI1	I think I will own an EV in the future.	0.878	0.834	3.530	70.591
EVPI5	I am confident that if I want, I can use an EV in the future.	0.861			
EVPI3	I will consider buying an eco-friendly EV.	0.854			
EVPI4	I will buy an EV if it is of higher quality than conventional vehicles.	0.823			
EVPI2	I plan to buy an EV soon.	0.782			

4.3. Reliability Analysis

A pilot sample of at least 55 respondents is recommended to ensure reliable preliminary findings and to achieve Cronbach's alpha values (Teare, 2014). Reliability analysis was conducted using Cronbach's alpha ($\alpha > .70$) and the average inter-item correlation (AIIC) to assess the internal consistency of the measurement items (Bujang et al., 2024). In addition, an AIIC between 0.30 and 0.70 is generally considered good, indicating adequate internal consistency; values above 0.70 may suggest item redundancy (Gharaibeh et al., 2017). Thus, a pilot test involving 100 participants was conducted after EFA, and all reliability indices met the recommended thresholds, as shown in Table 4.

Table 4. Reliability analysis of measurement items.

No	Constructs	Items	α (n = 100)	Reliability Level	AIIC
1	Perceived Ease of Use	PEOU1–PEOU4	0.807	Good	0.510
2	Perceived Usefulness	PU1–PU4	0.843	Good	0.573
3	Attitude	ATT1–ATT4	0.848	Good	0.582
4	Electric Vehicle Purchase Intention	EVPI1–EVPI5	0.895	Good	0.631

Note: Cronbach's α: excellent (> 0.90); good (0.80–0.89); acceptable (0.70–0.79); questionable (0.60–0.69); poor (0.50–0.59); and unacceptable (< 0.50); AIIC: 0.30 ≤ AIIC ≤ 0.70.

2.4. Common Method Variance

Given the use of a single-source, self-reported questionnaire administered at a single point in time, Harman's single-factor test was employed to assess the potential presence of common method bias (CMB) associated with self-reported data (n = 245) (Podsakoff et al., 2003). The test was conducted using exploratory factor analysis with an unrotated solution along with principal axis factoring (Podsakoff et al., 2003). The results indicated that the first factor explained 46.211% of the total variance, which is below the recommended threshold of 50% (Podsakoff et al., 2003), suggesting that common method bias is unlikely to be a serious concern in this study.

Table 5. Total variance explained.

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.387	49.338	49.338	7.856	46.211	46.211
2	1.16	6.825	56.163			
3	0.962	5.656	61.819			
4	0.932	5.482	67.301			
5	0.663	3.902	71.203			

4.5. Descriptive Statistics

According to Table 6, the mean scores of the constructs ranged from 3.169 to 3.403, indicating a moderate to agree level of agreement. The standard deviation values (0.799–0.906) suggest moderate variability in respondents' perceptions. These findings may indicate that respondents generally hold slightly positive but not strongly polarized views toward the studied constructs, with responses clustering around the midpoint of the Likert scale.

Table 6. Results of descriptive statistics.

Constructs	Minimum	Maximum	Mean	Standard Deviation	Level of Agreement
PEOU	1.00	5.00	3.169	0.819	Moderate
PU	1.00	5.00	3.366	0.867	Moderate
ATT	1.00	5.00	3.304	0.799	Moderate
EVPI	1.00	5.00	3.403	0.906	Agree

4.6. Correlation Analysis and Reliability Analysis

According to Table 7, correlation analysis revealed that all constructs were positively and significantly correlated ($r = 0.634–0.712$, $p < 0.01$), indicating moderate to strong positive relationships among the study variables. This suggests that improvements in one construct are likely to be associated with increases in the other constructs, supporting the theoretical consistency of the proposed relationships. Finally, the Cronbach's alpha (α) values for both the pilot study ($n = 100$) and the main study ($n = 245$) satisfied the recommended criterion, demonstrating good internal consistency across all constructs.

Table 7. Correlation matrix and reliability analysis of study constructs.

Constructs	α (n = 100)	α (n = 245)	1	2	3	4
1. PEOU	0.807	0.800	1.00			
2. PU	0.843	0.816	0.682**	1.00		
3. ATT	0.848	0.824	0.634**	0.646**	1.00	
4. EVPI	0.895	0.879	0.643**	0.691**	0.712**	1.00

Note: **. Correlation is significant at the 0.01 level (2-tailed); * = p < .05; ** = p < .01; *** = p < 0.001.

4.7. Automatic Linear Modeling

Based on Figure 2, the results from automatic linear modeling indicated a significant relationship ($R^2 = 0.613$, Adjusted $R^2 = 0.608$, Std. E = 0.56712), with the predictors explaining 60.8% of the variance in EV purchase intention, demonstrating a good model fit and significant predictive accuracy.

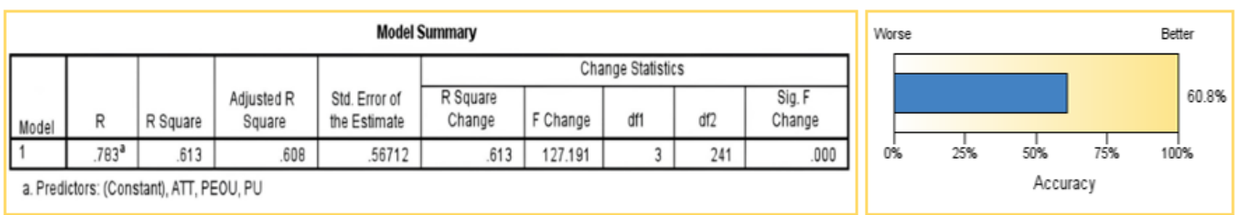

Figure 2. The result of automatic linear modeling.

4.8. Multicollinearity Diagnostics

To assess multicollinearity, the study examined several diagnostic indicators, including the Variance Inflation Factor (VIF), Condition Index (CI), and Tolerance values. A VIF value below 5 suggests that multicollinearity is not a concern (Shrestha, 2020), while a CI value below 30 indicates only weak or negligible multicollinearity (Young, 2017). In addition, Tolerance values greater than 0.30 confirm that the predictors do not exhibit problematic intercorrelations (O'Brien, 2007). Overall, the findings demonstrate that multicollinearity is not present in the model, as all predictor variables satisfy the recommended thresholds, as presented in Table 8.

Table 8. Result of collinearity diagnostics.

Model	VIF (< 5)	Tolerance (> 0.30)	CI (< 30)	Interpretation
PEOU	2.124	0.471	10.479	No multicollinearity
PU	2.180	0.459	13.611	No multicollinearity
ATT	1.950	0.513	14.143	No multicollinearity

4.9. Multiple Linear Regression

According to Table 8, the regression analysis indicated that PEOU had a positive and significant effect on the EVPI ($B = 0.356$, $\beta = 0.322$, $t = 5.359$, $p < 0.001$). Similarly, PU also had a positive and significant effect on the EVPI ($B = 0.492$, $\beta = 0.471$, $t = 7.838$, $p < 0.001$). The results suggest that respondents who perceived electric

vehicles as more useful and easier to use were more likely to report higher levels of the outcome variable, with PU showing a stronger influence than PEOU. The model explained 52.9% of the variance in the dependent variable (R^2 = 0.532, Adjusted R^2 = 0.529), indicating a substantial explanatory power of the model. Furthermore, the overall model was statistically significant (F = 137.756, p < 0.001), confirming that PEOU and PU jointly predict the EVPI effectively. In addition, the DW statistic of 1.787 indicated no evidence of autocorrelation in the residuals. Therefore, the proposed hypotheses were supported.

Table 8. Regression results on electric vehicle purchase intention.

Predictor	Unstandardized Coefficients		Standardized Coefficients	*t-value*	*p-value*	95% CI for B	
	B	**SE**	**β**			**LB**	**UB**
Constant	0.616	0.173	—	3.559	<0.001	0.275	0.957
PEOU	0.356	0.067	0.322	5.359	<0.001	0.225	0.487
PU	0.492	0.063	0.471	7.838	<0.001	0.369	0.616
Model Statistics							
R	R^2	Adj. R^2	F Change	df1	df2	*p*	DW
0.730[a]	0.532	0.529	137.756	2	242	<0.001	1.787

Note: B = unstandardized coefficient; SE = standard error; β = standardized coefficient; CI = confidence interval; T = Tolerance; VIF = variance inflation factor; CI = Condition Index; R^2 = R Square; Adj. R^2 = Adjusted R^2; DW = Durbin-Watson [1.50–2.50] (Hair et al. 2019); t-value ≥ 1.96 (Hair et al. 2019); LB = Lower Bound; UB = Upper Bound.
a. Predictors: (Constant), PU, PEOU; b. Dependent Variable: EVPI.

4.10. Simple Linear Regression

According to Table 9, the regression analysis indicated that PEOU had a positive and significant effect on PU (B = 0.722, β = 0.682, t = 14.529, p < 0.001). The positive coefficient indicates that respondents who perceived EVs as easier to use were more likely to perceive them as useful. The model explained 46.3% of the variance in PU (R^2 = 0.465, Adjusted R^2 = 0.463), suggesting that PEOU is a strong predictor of PU. Furthermore, the Durbin–Watson statistic of 2.008 indicated no evidence of autocorrelation. Therefore, H1 was supported.

Table 9. Regression results on perceived usefulness.

Predictor	Unstandardized Coefficients		Standardized Coefficients	*t-value*	*p-value*	95% CI for B	
	B	**SE**	**β**			LB	UB
Constant	1.079	0.163	—	6.635	<0.001	0.759	1.399
PEOU	0.722	0.050	0.682	14.529	<0.001	0.624	0.820
Model Statistics							
R	R^2	Adj. R^2	F Change	df1	df2	*p*	DW
0.682[a]	0.465	0.463	211.089	1	243	<0.001	2.008

Note: a. Predictors: (Constant), PEOU; b. Dependent Variable: PU.

4.11. Multiple Linear Regression

Table 10 presents the results of the multiple regression analysis examining the effects of PEOU and PU on attitude toward EV adoption. The results indicate that both PEOU and PU positively and significantly influenced attitude. Specifically, PEOU had a significant positive effect on attitude (B = 0.353, β = 0.362, t = 5.749, p < 0.001, 95% CI [0.232, 0.474]), suggesting that respondents who perceived EVs as easier to use were more likely to develop a favorable attitude toward them. Similarly, PU exerted a significant positive effect on attitude (B = 0.368, β = 0.399, t = 6.347, p < 0.001, 95% CI [0.254, 0.483]), indicating that greater perceived usefulness was associated with a more positive attitude toward EV adoption. The overall regression model was statistically significant (F (2, 242) = 115.003, p < 0.001) and explained 48.3% of the variance in attitude (R^2 = 0.487, Adjusted R^2 = 0.483). In addition, the DW statistic of 1.982 indicated no evidence of autocorrelation in the residuals. Therefore, H2 and H3 were supported.

Table 10. Regression results on attitude.

Predictor	Unstandardized Coefficients		Standardized Coefficients	*t-value*	*p-value*	95% CI for B	
	B	**SE**	**β**			LB	UB
Constant	0.945	0.160	—	5.910	<0.001	.630	1.260
PEOU	0.353	0.061	0.362	5.749	<0.001	.232	.474
PU	0.368	0.058	0.399	6.347	<0.001	.254	.483
Model Statistics							
R	R^2	Adj. R^2	F Change	df1	df2	*p*	DW
0.698	0.487	0.483	115.003	2	242	<0.001	1.982

Note: a. Predictors: (Constant), PU, PEOU; b. Dependent Variable: ATT

4.12. Simple Linear Regression

According to the regression analysis in Table 11, ATT had a positive and significant effect on electric vehicle purchase intention (EVPI) (B = 0.807, β = 0.712, t = 15.789, p < 0.001). The model explained 50.4% of the variance in EVPI (R^2 = 0.506), and the overall regression model was statistically significant (F (1, 243) = 249.281, p < 0.001). The DW statistic was 1.937, indicating no evidence of autocorrelation in the residuals. These findings support the hypothesis that attitude positively influences electric vehicle purchase intention.

Table 11. Regression results on electric vehicle purchase intention.

Predictor	Unstandardized Coefficients		Standardized Coefficients	*t-value*	*p-value*	95% CI for B	
	B	SE	β			LB	UB
Constant	0.738	0.174	—	4.251	<0.001	0.396	1.080
ATT	0.807	0.051	0.712	15.789	<0.001	0.706	0.907
Model Statistics							
R	R^2	Adj. R^2	F Change	df1	df2	*p*	DW
0.712[a]	0.506	0.504	249.281	1	243	<0.001	1.937

Note: a. Predictors: (Constant), ATT; b. Dependent Variable: EVPI.

4.13. Mediating Effect

To assess the mediating role of ATT in the relationships between PEOU, PU, and EVPI, the Sobel test was conducted. The indirect effect is deemed significant when the Z-value exceeds 1.96 at $p < 0.05$, 2.58 at $p < 0.01$, and 3.29 at $p < 0.001$ (Sobel, 1982). The mediation analysis was performed using the unstandardized regression coefficients and standard errors obtained from the regression analyses. The first mediation analysis examined the indirect effect of PEOU on EVPI through ATT. The results showed that PEOU had a significant influence on ATT (B = 0.353, SE = 0.061, $p < 0.001$), and ATT significantly predicted EVPI (B = 0.807, SE = 0.051, $p < 0.001$). The Sobel test confirmed a significant indirect effect ($Z = 5.40$, $p < 0.001$), indicating that ATT mediates the relationship between PEOU and EVPI.

The second mediation analysis tested the indirect effect of PU on EVPI through ATT. PU significantly affected ATT (B = 0.368, SE = 0.058, $p < 0.001$), and ATT significantly influenced EVPI (B = 0.807, SE = 0.051, $p < 0.001$). The Sobel test also exhibits a significant indirect effect ($Z = 5.79$, $p < 0.001$), confirming that ATT mediates the relationship between PU and EVPI. Overall, the results demonstrate that attitude significantly mediates the effects of both perceived ease of use and perceived usefulness on electric vehicle purchase intention among Cambodian Gen Z, as shown in Table 12.

Table 12. The results of the mediating effect by Sobel's Test.

Mediation Path	SC* (a x b)	Sobel's Test					Results	
		a	SE_a	b	SE_b	z-Test**	p-value	
PEOU → ATT → EVPI	0.285	0.353	0.061	0.807	0.051	5.45	< 0.001	Significant
PU → ATT → EVPI	0.297	0.368	0.058	0.807	0.051	5.92	< 0.001	Significant

Note: * SC = Standardized Coefficient for mediating effect; Sobel test critical values: $|Z| \geq 1.96$ ($p < .05$), $|Z| \geq 2.58$ ($p < .01$), and $|Z| \geq 3.29$ ($p < .001$); ** z-test = $\frac{ab}{\sqrt{b^2SE_a^2+a^2SE_b^2}}$;

4.14. Hypothesis Testing

Table 13 presents the results of the hypothesis testing for the direct effects among the study constructs. The findings indicate that all proposed relationships (H1–H6) are statistically significant, as all p-values are below 0.001. Specifically, PEOU, PU, and ATT were found to have significant positive effects on EVPI, while PEOU also significantly influenced PU and ATT, and PU significantly influenced ATT.

Table 13. Results of hypothesis testing (Direct Effects).

Constructs	Hypothesis	Path Relationships	β	t-value	p-value	Results
PEOU	H1	PEOU → EVPI	0.322	5.359	< 0.001	Supported
PU	H2	PU → EVPI	0.471	7.838	< 0.001	Supported
PEOU	H3	PEOU → PU	0.682	14.529	< 0.001	Supported
PEOU	H4	PEOU → ATT	0.362	5.749	< 0.001	Supported
PU	H5	PU → ATT	0.399	6.347	< 0.001	Supported
ATT	H6	ATT → EVPI	0.712	15.789	< 0.001	Supported

Additionally, Table 14 presents the results of the hypothesis testing for the indirect effects of PEOU and PU on EVPI through ATT. The findings indicate that both mediation pathways are statistically significant, as indicated by Sobel Z-values greater than 1.96 and p-values below 0.001. Specifically, ATT significantly mediates the relationships between PEOU and EVPI, as well as between PU and EVPI, supporting H7 and H8.

Table 14. Results of hypothesis testing (Indirect Effects).

Hypothesis	Mediation Path	Indirect Effect (a × b)	Sobel Z	p-value	Results
H7	PEOU → ATT → EVPI	0.285	5.45	< 0.001	Supported
H8	PU → ATT → EVPI	0.297	5.89	< 0.001	Supported

5. Discussion

5.1. Discussion of Direct Effects

The results of the proposed conceptual model on electric vehicle purchase intention are based on the TAM. It illustrates the direct effects of PEOU, PU, and ATT on EVPI, as well as the relationships among the core TAM constructs. This model provides a focused understanding of how TAM variables directly shape cognitive evaluations and behavioral intentions among Cambodian Gen Z university students in a developing country context, as presented in Figure 2.

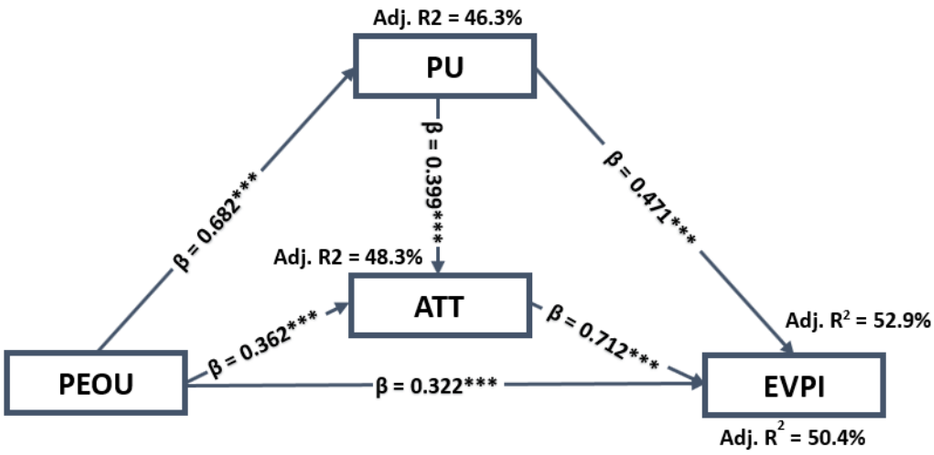

Figure 2. Results of direct effects.

5.2. Perceived Ease of Use and Electric Vehicle Purchase Intention

The finding indicates that perceived ease of use positively influences electric vehicle purchase intention among Cambodian Gen Z undergraduate students. This result is consistent with previous studies (Jaiswal et al., 2022; Sun & Lee, 2024; Bektaş et al., 2024; Christianto & Lahindah, 2025), which reported that consumers are more likely to intend to purchase electric vehicles when they perceive them as easy to learn, operate, and use. In the Cambodian context, where electric vehicle adoption is still emerging, ease of use may minimize uncertainty and encourage young consumers to consider electric vehicles as a practical transportation option.

5.3. Perceived Usefulness and Electric Vehicle Purchase Intention

The results highlight that perceived usefulness significantly influences electric vehicle purchase intention among Cambodian Gen Z undergraduate students. This result is consistent with prior studies (Worasatepongsa & Prakthayanon, 2022; Kamal et al., 2020; Wang et al., 2022; Utari & Yasa, 2024; Belmonte et al., 2024; Kurniawan & Samryn, 2024; Tsai et al., 2025), which found that consumers tend to purchase electric vehicles when they perceive them as beneficial, cost-effective, and environmentally friendly. In the Cambodian context, these perceived advantages may strengthen young consumers' intention to adopt electric vehicles.

5.4. Perceived Ease of Use and Perceived Usefulness

The findings demonstrate that perceived ease of use positively influences perceived usefulness among Cambodian Gen Z undergraduate students. This result aligns with prior studies (Ayanwale & Molefi, 2024; Saleh et al., 2024; Bektaş et al., 2024; Pamidimukkala et al., 2024; Saleh et al., 2025), which reported that individuals are more likely to recognize the benefits of electric vehicles when they perceive them as easy to understand, operate, and manage. This may be because technologies that require seamless effort to use enable consumers to experience their functional and economic benefits more readily. In the Cambodian context, enhancing the user-friendliness of electric vehicles may foster consumers' perceptions of their practical value and promote wider adoption.

5.5. Perceived Ease of Use and Attitude

The findings indicate that perceived ease of use positively influences attitude toward electric vehicle purchase intention among Cambodian Gen Z undergraduate students. This result aligns with existing studies (Rachmawati & Rahardi, 2023; Salim, 2024; Hutabarat & Nusraningrum, 2025; Christianto & Lahindah, 2025), which showed that consumers tend to develop a more positive attitude when electric vehicles are perceived as easy to use and seamless functions. This may suggest that technologies are simple to learn and operate, reduce uncertainty, and increase users' confidence. In the Cambodian context, improving the ease of using electric vehicles may enhance more favorable attitudes and encourage future adoption.

5.6. Perceived Usefulness and Attitude

The results show that perceived usefulness has a significant positive effect on attitude toward electric vehicle purchase intention among Cambodian Gen Z undergraduate students. This finding aligns with prior research (Salim, 2024; Utari & Yasa, 2024; Catană et al., 2025), which suggests that individuals are more likely to form a positive attitude when they recognize clear benefits from using electric vehicles. These perceived advantages, such as better efficiency, lower operating costs, and improved environmental impact, shape more favorable evaluations of the technology. In Cambodia, when young consumers clearly see these benefits, their attitudes toward electric vehicles become more positive, which in turn supports greater adoption.

5.7. Attitude and Electric Vehicle Purchase Intention

The findings indicate that attitude has a significant positive effect on electric vehicle purchase intention among Cambodian Gen Z undergraduate students. This result is consistent with previous studies (Ali & Naushad, 2022; Wang et al., 2022; Jaiswal et al., 2021; Mohd Noor et al., 2025; Ng et al., 2025; Purwanto et al., 2025), which exhibited that individuals with more favorable attitudes are more likely to develop stronger intentions to purchase electric vehicles. This may be because positive evaluations of EVs increase willingness to adopt and reduce hesitation in decision-making. In the Cambodian context, a more positive attitude toward electric vehicles is likely to transform directly into stronger purchase intention.

5.1. Discussion of Mediating Effects

The following figures present the results of the proposed conceptual model on electric vehicle purchase intention based on the TAM. It illustrates the mediating role of ATT in the relationships between PEOU, PU, and EVPI. Specifically, PEOU and PU influence EVPI indirectly through ATT, highlighting attitude as a key psychological mechanism through which TAM constructs shape behavioral intention among Cambodian Generation Z undergraduate students in a developing country context. In the figures, solid arrows represent the direct relationships among the constructs, whereas the dashed arrow represents the indirect (mediated) effect through ATT.

5.2. Mediating Effect of ATT on PEOU and EVPI

Figure 3 shows that attitude significantly mediates the relationship between perceived ease of use (PEOU) and electric vehicle purchase intention (EVPI), with an indirect effect of 0.285, Sobel Z = 5.45, and $p < 0.001$, supporting H7. This finding is consistent with the TAM, which indicates that ease of use shapes behavioral intention through attitude formation (Davis, 1989). It also aligns with previous studies (Vijayan & Oo, 2022; Satti & Khan, 2023; Udiyana et al., 2025), suggesting that when electric vehicles are perceived as easy to use, they enhance more positive attitudes, which in turn enhance purchase intention among Cambodian Gen Z undergraduate students.

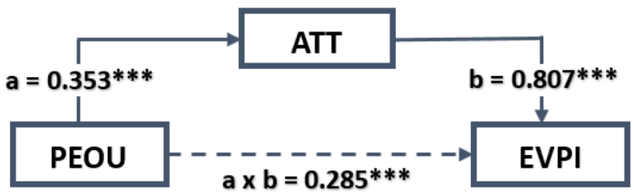

Figure 3. Mediating effect of ATT between PEOU and EVPI.

5.3. Mediating Effect of ATT on PU and EVPI

Figure 4 demonstrates that attitude significantly mediates the relationship between PU and EVPI, with an indirect effect of 0.297, Sobel Z = 5.89, and $p < 0.001$, supporting H8. This result is also in line with the TAM (Davis, 1989) and prior empirical studies (Wiprayoga et al., 2023; Satti & Khan, 2023; Turan, 2026), indicating that perceived usefulness influences purchase intention through attitude formation. In this context, when students perceive electric vehicles as beneficial and valuable, they develop more favorable attitudes, which subsequently strengthen their intention to adopt electric vehicles.

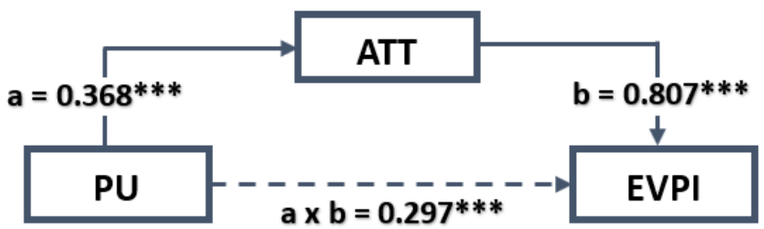

Figure 4. Mediating effect of ATT between PEOU and EVPI.

6. Conclusion

6.1. Conclusion

This study investigated the determinants of electric vehicle purchase intention among Cambodian Gen Z undergraduate students using the Technology Acceptance Model. The findings revealed that perceived ease of use, perceived usefulness, and attitude significantly influence electric vehicle purchase intention. In addition, perceived ease of use positively affected both perceived usefulness and attitude, while perceived usefulness also had a significant positive effect on attitude, confirming the applicability of TAM in explaining electric vehicle purchase intention in the Cambodian context. The mediation analysis further demonstrated that attitude significantly mediates the relationships between perceived ease of use and electric vehicle purchase intention, as well as between perceived usefulness and electric vehicle purchase. These findings suggest that users' perceptions of ease of use and usefulness enhance positive attitudes toward electric vehicles, which in turn strengthen their purchase intention. Overall, the study highlights the important roles of technological perceptions and attitudes in promoting electric vehicle adoption among Cambodian Gen Z consumers.

6.2. Implications of the Study

The empirical findings provide several substantial implications for both theoretical and practical perspectives. Theoretically, this study extends the application of the Technology Acceptance Model by confirming the direct effects of PEOU, PU, and ATT on EVPI, while also validating the mediating role of ATT. The findings provide empirical evidence that attitude serves as an important psychological mechanism through which technological perceptions influence purchase intention, thereby strengthening the explanatory power of TAM in the context of sustainable technology adoption. Practically, the findings suggest that policymakers and EV marketers should focus on improving consumers' perceptions of EV usefulness and ease of use. Promoting the economic, environmental, and practical benefits of EVs, together with providing user-friendly technologies and sufficient information, can foster more positive attitudes and increase purchase intention among Cambodian Gen Z consumers.

6.3. Limitations and Future Research

The study offers new insights into strategies for supporting electric vehicle purchase intention among Gen Z by applying and extending TAM, contributing conceptually, contextually, and methodologically within the Cambodian setting. However, several limitations should be acknowledged. First, the sample was collected from a single private university in Cambodia using convenience sampling, which may limit the generalizability of the findings. Second, although Harman's single-factor test was used to assess common method bias, it may not fully detect common method variance. Third, the literature reviewed was limited to publications from 2020 to 2026, which may have excluded relevant earlier studies. Fourth, the study relied solely on multiple regression analysis, limiting the simultaneous assessment of measurement and structural relationships.

Finally, this study employed only a quantitative approach, which may not fully capture consumers' underlying perceptions of EV purchase intention. Future research should employ larger and more diverse samples to improve generalizability and adopt more robust methods for assessing common method bias. Future research is also encouraged to include a broader range of literature, apply advanced analytical techniques such as structural equation modeling, and use mixed-method or qualitative approaches to gain deeper insights. Furthermore, future studies may extend the Technology Acceptance Model by incorporating additional variables, such as environmental concern, government support, perceived risk, or charging infrastructure, to better explain electric vehicle purchase intention.

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