BILINGUAL PUBLISHING GROUP

Journal of Environmental & Earth Sciences

https://journals.bilpubgroup.com/index.php/jees

ARTICLE

Promoting Green Choices: Vietnamese Students' Intentions to Use Electric Taxi Services and Sustainability Factors

Dan Thi Thanh Nguyen *, ***Ngoc Thi Kim Pham***

School of Economics and Management, Hanoi University of Science and Technology, Hanoi 11615, Vietnam

ABSTRACT

Sustainable development has become a critical global priority, and green transportation solutions, such as electric taxis, play a vital role in achieving this goal. This study examines the factors influencing students' intentions to adopt electric taxi services in Hanoi, Vietnam, as a step toward sustainable urban mobility. We surveyed 573 students and analyzed key determinants using reliability tests, exploratory factor analysis (EFA), and linear regression. The results indicate that four factors significantly influence adoption intentions: Perceived Usefulness and Sustainability, Price, Brand Awareness, and Service Quality. Among these, Perceived Usefulness and Sustainability had the strongest positive impact, while Service Quality exerted the weakest influence. Notably, Habit and Ease of Use & Transaction Convenience were found to be statistically insignificant in the final model. These findings provide practical implications for businesses and policymakers aiming to use electric taxi adoption. To enhance appeal, stakeholders should emphasize environmental benefits, competitive pricing, and brand recognition while improving service reliability. By addressing these factors, electric taxi services can accelerate the transition to sustainable transportation, aligning with global climate goals and transforming urban mobility. This study offers actionable insights for encouraging greener travel behaviors among students, a key demographic for long-term sustainability impact.

Keywords: Intention to Use; Electric Taxi; Student; Hanoi; Vietnam

*CORRESPONDING AUTHOR:

Dan Thi Thanh Nguyen, School of Economics and Management, Hanoi University of Science and Technology, Hanoi 11615, Vietnam;
Email: dan.nguyenthithanh@hust.edu.vn

ARTICLE INFO

Received: 24 March 2025 | Revised: 15 April 2025 | Accepted: 22 April 2025 | Published Online: 6 June 2025
DOI: https://doi.org/10.30564/jees.v7i6.9209

CITATION

Nguyen, D.T.T., Pham, N.T.K., 2025. Promoting Green Choices: Vietnamese Students' Intentions to Use Electric Taxi Services and Sustainability Factors. Journal of Environmental & Earth Sciences. 7(6): 157–170. DOI: https://doi.org/10.30564/jees.v7i6.9209

1. Introduction

Currently, about 140 countries, which account for nearly 90% of total global emissions, have committed to or are striving for net zero greenhouse gas emissions. This group includes major emitters such as the United States, China, and India [1]. At the 2021 United Nations Climate Change Summit, Vietnam pledged to achieve "Net Zero" by 2050, marking a significant milestone and laying the groundwork for a green, sustainable economy. However, transportation remains one of the key energy-consuming and carbon-emitting sectors [2]. As a result, promoting energy conservation and emission reduction has become a top priority for countries worldwide [3]. Electric taxis, known for their low emissions and high efficiency, are gaining attention as an important component of urban public transportation. The rapid development of mobile internet and artificial intelligence has transformed traditional taxi operations through online ride-hailing services [4]. Smart networked electric taxis are expected to offer more efficient and energy-saving services while also reducing traffic congestion and carbon emissions [5,6].

As part of the global trend toward electrification, many taxi companies are transitioning from internal combustion engines to electric vehicles (EVs). In New York City, it's common to see EVs like Tesla and Nissan Leaf operating as taxis. In late 2022, Zeekr, a brand under Geely Group, launched the M-Vision, a robotaxi designed for public transport, capable of covering 500,000 kilometers in five years while operating up to 16 hours a day. Archer Aviation has also introduced "Maker," the first electric flying taxi, aimed at shaping urban air travel. Norway plans to fully electrify its taxi fleet by 2025, having already implemented wireless charging systems. China, which aims to convert all taxis in major cities to electric, has progressed rapidly, with electric taxies now readily available and automation allowing for quick battery replacements. Vietnam ranks among the top 30 most polluted countries, with Hanoi being the most polluted city as of 2022 [7]. Environmental challenges are expected to increase due to the rapid growth of passenger cars [8]. Vietnam witnessed a 7.5-fold expansion in its commercial transport vehicle registry, increasing from 121,897 units (passenger and container trucks) in 2013 to 921,333 units by December 2023 [9]. According to the latest statistics from the Hanoi Department of Transport, the capital city is projected to have over 1 million passenger cars, including commercial vehicles such as taxis and ride-hailing cars, by 2023 [10].

Transitioning from gasoline-powered taxis to electric taxis is an essential strategy for saving energy and reducing emissions, as electric taxis can significantly help conserve resources and improve urban air quality [11]. By 2023, Vietnam had more than 10,000 electric taxis, with expectations of reaching 1 million by 2028. The introduction of new electric vehicles by VinFast, such as the VF e34 and VF 8, is anticipated to significantly increase the number of customers using electric taxis starting in 2023 [12]. GSM Company was established and began operations in April 2023 in Vietnam, implementing a multi- platform green transport model with a fleet that is 100% electric. According to a report from GSM, within just 7 months of official operation, the electric taxi company reached 70 million kilometers of green travel, helping to reduce 13.4 million kg of CO2 emissions—equivalent to planting over 600,000 new trees. To date, Xanh SM has expanded to 29 provinces and cities, boasting a fleet of 30,000 electric vehicles.

To expand the electric taxi market in Vietnam, it is crucial to examine customers' intentions and decisions regarding the use of electric vehicles. This study aims to identify the factors that influence students' intentions to use electric taxis, particularly since many of them primarily travel by motorbike. According to the General Statistics Office of Vietnam, there were 628,981 students in Hanoi in 2020, and this number is projected to increase to approximately 1.1 million by 2030. This growing student population presents a significant potential customer base for electric taxi companies as Hanoi looks to reduce the number of gasoline-powered motorbikes entering the inner city.

This study represents one of the first surveys investigating the factors that affect the students' intentions to use electric taxi service in a country where motorbike dependence is high. It highlights key influencing factors and offers policy implications that can provide valuable insights for businesses currently operating or planning to operate electric taxis. Additionally, it addresses macro-policy considerations for the government in promoting the development of environmentally sustainable transportation options.

2. Literature Review

2.1. Electric Cars and the Intention to Use Electric Taxis

Given the urgent need to reduce emissions from road transport, electric vehicles have been extensively studied over the past decade [13,14]. Research has explored various aspects, including charging systems, promotional strategies, safety, and the environmental and social impacts of electric vehicles [15–20]. However, the success of the electric vehicle market largely depends on customer acceptance, which is measured by the intention to use these vehicles. Consequently, many studies have focused on investigating the intention to use electric vehicles and have been published in international journals related to transportation and the environment [13,14,21–23].

In addition to individual consumers, taxi companies represent a significant customer segment that electric vehicle manufacturers should target. Hagman and Langbroek [24] examined the potential for electric vehicle adoption within a taxi company in Stockholm, Sweden. By analyzing cost and revenue data for both electric and conventional vehicles and conducting interviews with drivers and transport companies, the study assessed the financial and operational impacts of integrating electric vehicles into the taxi fleet, considering both drivers' and customers' perspectives. The results indicated that the total cost of ownership for electric taxis was comparable to, or lower than, that of conventional taxis, with electric taxis proving to be more profitable. Most customers preferred electric taxis, and the zero-emission vehicle priority system at Stockholm's airport partially offset the charging time [24]. To promote the adoption of electric taxis, more fast charging facilities are required at key locations. Additionally, transport operators often lack information about the opportunities and challenges associated with switching to electric taxis, which hinders broader deployment. Most studies on the adoption of electric vehicles have focused on the perspectives of car owners [25-27] or taxi drivers [24]. There is a noticeable gap in research regarding the choice of electric taxis by individual customers, particularly students. This study aims to investigate the factors influencing students' behavior regarding the use of electric taxi services in Hanoi and to provide recommendations for electric taxi businesses to develop appropriate policies for this potential customer group.

2.2. Services and Electric Taxi Services

P. Kotler defines a service as "an activity or benefit that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product." There are four key characteristics of services: Intangibility, Inseparability, Variability, and Perishability [28].

According to Kotler and Keller [29], consumer behavior is the study of how individuals and groups make decisions regarding their wants and how they fulfill those desires. The stimulus and response model serves as a foundational concept for understanding buyer's behavior. It posits that marketing stimuli—such as price, place, and promotion—along with other environmental factors (economic, technological, political, and cultural) influence a buyer's decision-making process.

He and Shen [30] describe ride-hailing as a platform that facilitates effective communication between drivers and passengers. This service involves three parties: passengers, drivers, and suppliers. A ride-hailing service provider manages the demand from passengers and the availability of drivers [31]. Passengers can request rides through mobile devices, with their location sent to the driver via GPS.

In Vietnam, customers can easily book electric taxis through a national hotline, similar to traditional taxi services, or through the SM Green Taxi application available on the App Store and Google Play, like other ride-hailing companies. Notably, compared to traditional taxis and other technology-driven services using vehicles powered by internal combustion engines, electric taxis with a new, advanced fleet of electric cars tend to receive higher ratings from users [32].

2.3. Behavioral Research Models

2.3.1. Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB)

The Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) are the most widely used theories to explain human behavior. TPB is an extension of TRA [33]. The central factor in TPB is a person's

intention to perform a specific behavior. Intention serves as a motivational factor that influences behavior, indicating how much effort individuals plan to put into executing that behavior. Generally, the stronger the intention, the greater the likelihood of performing the behavior. In this theory, "behavioral intention" is influenced by three factors: (1) attitude toward the behavior; (2) social norms; and (3) perceived behavioral control. TRA acknowledges that attitude toward behavior and subjective norms are the main determinants of human behavior. TPB enhances TRA by incorporating an individual's sense of behavioral agency to predict behavioral intention.

2.3.2. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis et al. [34] based on TRA, predicts individuals' attitudes toward adopting new technology. TAM has been applied to various research areas, such as digital technology in education [35], IoT cloud platforms [36], online shopping [37], mobile payments [38], and virtual reality/augmented reality sports experiences [39]. According to Venkatesh et al. [40], the TAM2 model effectively predicted 60% of the acceptance of a new system and identified improvements that could quickly, flexibly, and conveniently meet unmet user needs.

2.3.3. The Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT Model, developed by Venkatesh et al. [40], aims to examine technology acceptance and usage through a more integrated approach. Due to its adaptable design, the UTAUT model has been widely employed in the transportation sector, including automated driving systems [41–44], car navigation systems [45,46], hyper-connected vehicles [47], highly automated driving [48,49], autonomous vehicles [50–54], and ECS [55–57], as well as autonomous ECS [58]. The UTAUT model is built on the premise that many of the underlying ideas from earlier theories are quite similar, allowing for their organization and synthesis into a unified theoretical framework [41]. However, the UTAUT model has not yet achieved broad consensus within the research community. Consequently, the UTAUT2 model was developed, modifying several existing relationships in the UTAUT framework and introducing three new elements: preference, cost-value, and habit. UTAUT2 eliminated the moderator variable of "voluntariness" and added a link between facilitating conditions and behavioral intention to use [59]. The UTAUT2 model has proven effective in identifying innovative designs and offering valuable behavioral insights, despite various technological intricacies [55,58,60].

In summary, UTAUT is an essential tool for investigating the cognitive factors that influence individuals' tendencies to adopt new technologies and services. Meanwhile, UTAUT2, with its ability to incorporate additional psychological constructs, has showcased practical applications and provides a valuable means to expand our understanding of customer behavior in adopting technology products and services. Therefore, this study employs UTAUT2 as the foundational theoretical framework to examine college students' choices regarding electric taxis.

2.3.4. Consumer Value Theory and ECS

Consumer value theory, originally proposed by Sheth, Newman, and Gross [61], is an important framework that focuses on consumer behavior and is based on value judgments. This theory seeks to explain why consumers decide to purchase or refrain from purchasing, as well as why they prefer one product over another. According to Sheth et al. [61], perceived value comprises five components: functional value, epistemic value, social value, emotional value, and conditional value. Their research indicates that these components of perceived value significantly influence customer choices.

Scholars and industry practitioners have utilized perceived value to explore the various components that shape consumer thinking and behavior in collaborative consumption [62–65]. This theory has also been extensively applied in studies related to sustainable consumption [66,67], low-carbon consumption [68], green consumption [69], shared consumption [70], and other consumption forms [71].

Consequently, consumer value theory can be effectively used to investigate the factors influencing students' behavior when choosing electric taxi services.

3. Hypothesis, Model and Research Method

3.1. Hypothesis and Research Model

3.1.1. Hypothesis

(1) Service quality

Provide a concise and precise description of the experimental results, their interpretation as well as the experimental conclusions that can be drawn.

Service quality is a multifaceted concept, commonly defined by how well the service delivery meets, exceeds, or fails to meet customer expectations [72,73]. Research by Hu, Dandan et al. [74] indicates that service quality significantly impacts customer satisfaction when using electric taxis. Furthermore, H. Kim and Jan [65] define functional value as the perceived benefit of a service compared to its alternatives. This functional value encompasses the attributes and characteristics of a product or service, which include its desirable, appropriate, and beneficial features that enhance performance and overall experience [75]. When the functional value of a service is recognized, it can strengthen the intention to use environmentally friendly transportation options, such as electric vehicles or electric taxi-sharing services [76]. Based on this information, the author proposes the following hypothesis: Therefore, hypothesis one is proposed.

H1. *Service quality has a positive impact on the intention to use electric taxi services.*

(2) Price

The concept of price, often referred to as economic value, encompasses the benefits received from a product that help reduce costs over both the short and long term [77]. The value of a product or service is determined by the combination of its price and quality. According to Eboli and Mazzulla [78], price significantly influences customers' decisions to use a service. Furthermore, Venkatesh, Thong, and Xu [59]suggest that price value is perceived positively when the benefits of using a technology exceed the associated costs, which in turn enhances behavioral intention. Likewise, the research by Paundra et al. [79] demonstrated that price positively affects the intention to use electric taxi-sharing services. Therefore, this study proposes the following hypothesis:

H2. *Price value positively impacts the intention to use electric taxi services.*

(3) Transaction convenience

Transaction convenience refers to the customer's perception of the time and effort needed to complete a transaction [80]. It is an important aspect of the convenience offered by a technological service, influencing consumers' decisions to use that service and their likelihood of returning in the future. Therefore, we propose the following hypothesis:

H3. *Transaction convenience positively impacts the intention to use electric.*

(4) Ease of Use

Ease of use refers to the degree to which a person believes that utilizing a specific system will be simple and straightforward [35]. In other words, it measures how much a technology can benefit consumers when they engage in particular activities on that platform [40]. This variable of ease of use is also included in the Technology Acceptance Model (TAM). Therefore, the fourth hypothesis is stated as follows:

H4. *Ease of use positively influences the intention to use electric taxi services.*

(5) Perceived usefulness

Perceived usefulness refers to the extent to which an individual believes that using a particular system will enhance their work performance, as defined by Davis [36] and Venkatesh et al. [40]. This concept was also referenced by Davis in the earlier Technology Acceptance Model (TAM). Moreover, the shift from traditional taxis to electric taxis offers various benefits, such as decreased emissions, reduced traffic congestion, and lower energy consumption [57,81,82]. Therefore, we propose the following hypothesis:

H5. *Perceived usefulness positively affects the intention to use electric taxi services.*

(6) Habit

According to Limayem et al. [83], habit is defined as the degree to which individuals tend to perform a behavior automatically due to repetition and learning. When a person engages in a behavior repeatedly, it eventually becomes a habit and is automatically remembered whenever they intend to act on it. Therefore, we propose the following hypothesis:

H6. *Habit positively influences the intention to use electric taxi services.*

(7) Brand Awareness

Brands convey trust and safety to their customers [84]. Social influence, as defined by Venkatesh et al. [40], refers to the extent to which individuals believe that a new technology should be used. Previous research has demonstrated a positive association between social influence and the intention to adopt new technology [85,86]. The relationship between social influence and the adoption of alternatives in transportation, such as mode choice, has been extensively studied in various transportation research [87]. Additionally, Algesheimer et al. [88] found that user engagement and recommendations are significantly influenced by interactions among users. Thus, we hypothesize:

H7. *Brand awareness positively influences the intention to use electric taxi services.*

(8) Sustainability

In studies of alternative transportation, sustainability is recognized as a key factor influencing behavioral intention [64,89]. Eco-sustainable consumption is motivated by concerns regarding green ecological resources and the efficient use of underutilized resources [90–92]. The use of electric taxis is notably increased by sustainability, with the perception of resource efficiency also playing a significant role. The environmental concern scale was developed from the study by Schultz et al. [93] , translated into Vietnamese by Huong [94], and adapted for the Vietnamese research context. Based on these findings, we propose the following hypothesis:

H8. *Sustainability positively influences the intention to use electric taxi services.*

3.1.2. Research Model

Based on the synthesis and analysis of specific conditions and research subjects, the author proposes a research model that includes 8 factors, as illustrated in **Figure 1**.

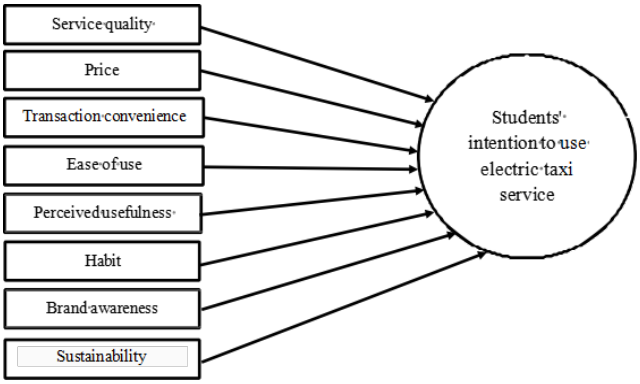

Figure 1. Research model. Source: Author's proposal.

3.2. Research Method

The purpose of this study is to examine the relationship between variables in the model to either accept or reject the research hypotheses. Specifically, it focuses on the factors influencing university students' intentions to use electric taxi services in Hanoi. The study employs a combination of qualitative and quantitative research methods.

The qualitative method was used to develop and test the research model and measurement scale. This involved conducting in-depth interviews with 15 students who have used electric taxi services, followed by consultations with two experts from the electric taxi industry and two specialists in consumer behavior.

When the total population size is unknown, the formula for calculating the survey sample size needed to estimate a proportion—assuming a 95% confidence level and maximum variability for a conservative estimate—is based on Cochran's formula [95] for infinite populations. According to this formula, we would need 385 respondents if the population size is not specified. The quantitative phase of

the study was conducted with 573 university students in Hanoi from February 2024 to September 2024. A questionnaire was developed using Google Forms and distributed to the students. This questionnaire consisted of 43 observable variables and was divided into two sections. The first section included five socio-demographic questions to facilitate effective data collection. The second section included 38 items in total, with 35 items designed to measure the factors influencing the intention to use electric vehicle services. Additionally, three items assessed students' intentions to utilize these services. A 5-point Likert scale was used to evaluate the respondents' opinions.

The collected data were analyzed using SPSS version 22.0 software. The measurement scale was initially assessed using descriptive statistics, the Cronbach's Alpha reliability coefficient, and exploratory factor analysis (EFA). Additionally, correlation analysis and linear regression were utilized to test the model and the research hypotheses.

4. Research Results

The results of the Cronbach's Alpha test show that all 38 observed variables have a relatively high coefficient, exceeding 0.7. Therefore, all variables are accepted, and none will be eliminated. The reliability test results for the scale are presented in **Table 1**.

In the ongoing exploratory factor analysis (EFA), we started with 35 observed variables. After analysis, we retained 31 observed variables grouped into six components: (1) Perceived usefulness and sustainability, (2) Brand awareness, (3) Service quality, (4) Habit, and (5) Price. The scale measuring the intention to use electric taxi services was refined to include three variables. Further testing confirmed the reliability of the adjusted scale, indicating that all variables met the criteria for subsequent regression analysis. The results of the reliability testing are summarized in **Table 2** below.

The results of the regression model are as follows: The Durbin-Watson test statistic is 2.029, which falls between 1 and 3, indicating that there is no first-order serial correlation. This value is also considered standard in contemporary analyses. Additionally, the multivariate regression results reveal that the coefficient of determination (R^2) is 0.637, with an adjusted R^2 of 0.623. This suggests that the regression model is suitable and effectively explains the influence of the independent variables on the dependent variable, which in this case is the service usage intention of university students in Hanoi.

Table 1. Results of scale reliability test.

No.	Scale	Observation variable	Cronbach's Alpha Coefficient
1	Service quality	SQ1–SQ5	0.853
2	Price	P1–P4	0.805
3	Transaction convenience	TC1–TC3	0.929
4	Ease of use	EU1–EU4	0.903
5	Perceived usefulness	PU1–PU5	0.921
6	Habit	H1–H4	0.802
7	Brand awareness	BA1–BA5	0.913
8	Sustainability	S1–S5	0.877
9	Students' intention to use electric taxi service	IU1–IU3	0.863

Source: The author group processed the data.

Table 2. Results of Reliability Testing for the Calibration Scale.

No.	Scale	Number of Accepted Variables	Cronbach's Alpha Coefficient
1	Price (P)	4	0.866
2	Service quality (SQ)	5	0.860
3	Ease of use & Transaction convenience (ET)	5	0.852
4	Perceived usefulness & Sustainability (PS)	8	0.938
5	Habit (H)	4	0.802
6	Brand awareness (BA)	5	0.917
7	Students' intention to use electric taxi service (IU)	3	0.863

Source: The author processed the data.

The ANOVA (Analysis of Variance) indicates a significance level of 0.000, which is less than 0.05. Therefore, it can be concluded that the independent variables in the model are statistically related to the dependent variable, making the model applicable. With a significance level of 5% commonly used in research, a p-value of less than 0.05 suggests that an independent variable has an impact on the dependent variable.

Examining the regression weights, it is evident that the significance levels for the following variables—(1) Price, (2) Service Quality, (4) Perceived Usefulness and Sustainability, and (6) Brand—are all below 0.05, indicating that they are significant contributors to the model and positively impact university students' intention to use electric taxi services in Hanoi. Conversely, two variables (3) Habits and (5) Ease of Use and Convenient Transactions—have significance levels greater than 0.05, leading to their exclusion from the model.

According to Hair et al. (2019), the variance inflation factor (VIF) must be less than 3.0 to confirm the absence of multicollinearity among the independent variables. The results presented in **Table 3** show that the VIF values for all observed variables meet this requirement.

The linear regression equation is as follows:

$$IU = \beta_0 + \beta_1 PS + \beta_2 P + \beta_3 B + \beta_4 SQ + \varepsilon$$
$$= -0.459 + 0.518*PS + 0.259*P + 0.146*B + 0.103*SQ \quad (1)$$

Based on the research findings, it is evident that among the factors influencing students' intention to use electric taxi services, the most significant factor is Perceived Usefulness and Sustainability (β = 0.518). This is followed by Price (β = 0.259) and Brand (β = 0.146). The least influential factor is Service Quality (β = 0.103).

Specifically, if students' perception of Perceived Usefulness and Sustainability increases by one unit, their intention to use electric taxi services will increase by an average of 0.518 units. Similarly, an increase in the perception of Price and Brand Image by one unit will lead to an average increase in intention to use of 0.259 units and 0.146 units, respectively.

Table 3. Regression analysis results.

Model	Unstandardized		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	Beta	Std.Error	Beta			Tolerance	VIF
(Constant)	–0.459	0.205		–2.257	0.025		1.984
Price (P)	0.254	0.037	0.259	7.326	0.000	0.685	2.012
Service quality (SQ)	0.059	0.046	0.103	10.623	0.002	0.581	1.863
Perceived usefulness & Sustainability (PS)	0.515	0.028	0.518	12.394	0.000	0.517	2.454
Brand (B)	0.200	0.058	0.146	3.113	0.000	0.608	1.811

Source: Author's data processing.

5. Discussion

5.1. On the Business Side

Based on the results of the study, the authors propose key points related to the business side in promoting the intention to use electric taxis of students in Hanoi.

(1) Leverage Cost Advantages

The study reveals a significant operational cost advantage for e-taxis: the per-kilometer cost (~400 VND) is 60%–80% lower than gasoline-powered taxis (1,000–2,000 VND). Businesses should highlight this price disparity in marketing campaigns to position e-taxis as the cost-effective alternative, disrupting the traditional taxi market.

(2) Prioritize Affordability for Student Segments

Price sensitivity is critical for students, who often depend on family financial support. To capture this demographic, we recommend:

Student-Specific Discounts: Introduce subsidized fares or loyalty programs (e.g., 10%–20% discounts for student IDs).

Carpooling Incentives: Develop shared-ride options for university routes, reducing individual costs while maximizing fleet efficiency.

(3) Enhance Service Quality

While e-taxis inherently offers environmental benefits (e.g., zero noise/emissions), service quality remains a key driver of adoption. Focus on:

Reduced Wait Times: Optimize dispatch algorithms for high-demand areas (e.g., campuses).

Driver Training: Improve communication skills and vehicle cleanliness standards.

Real-Time Feedback Systems: Allow students to rate rides, fostering accountability.

(4) Amplify Sustainability Messaging

The study identifies perceived usefulness and sustainability as the strongest predictors of adoption. Businesses should:

Transparently Report Emissions Savings: Display CO_2 reductions per ride (e.g., "This trip saved 2 kg of emissions").

Invest in Green Technology: Accelerate R&D for battery efficiency and renewable energy integration.

(5) Strengthen Brand Trust

Brand recognition significantly influences usage intent. Actions include:

Partnerships with Universities: Sponsor events or offer campus pick-up zones.

Social Proof Campaigns: Feature testimonials from student users.

To dominate Hanoi's student market, e-taxi providers must combine competitive pricing (e.g., subsidies, carpooling), service excellence, and strategic branding—all while emphasizing the dual economic and environmental advantages of e-mobility.

5.2. On the Government Side

The Government's Role in Promoting Electric Taxi Adoption.

To accelerate the transition to electric taxis (e-taxis) and support sustainable urban mobility, the government should implement a multi-faceted strategy addressing financial, infrastructural, and cultural barriers:

(1) Policy and Financial Incentives

Subsidies and Tax Breaks: Introduce targeted incentives (e.g., reduced import taxes, VAT exemptions) to offset the high upfront cost of e-taxis, which remain 1.5–3 times more expensive than conventional vehicles.

Low-Interest Loans: Partner with financial institutions to provide accessible credit for taxi operators, mitigating challenges posed by global inflation-driven interest rate hikes.

Fleet Transition Mandates: Set gradual targets for taxi companies to convert portions of their fleets to electric vehicles (EVs).

(2) Charging Infrastructure Development

Strategic Expansion: Prioritize high-capacity fast-charging stations in urban hubs (e.g., near universities, transit terminals) to minimize downtime for e-taxis and prevent congestion.

Public-Private Partnerships: Collaborate with energy providers and businesses to scale infrastructure, ensuring parity with existing gasoline station coverage.

(3) Awareness and Behavioral Change

Education Campaigns: Integrate sustainability into school curricula and public messaging to cultivate pro-environmental values among youth, emphasizing the link between e-taxis and cleaner air.

Demonstration Projects: Showcase e-taxi benefits through pilot programs (e.g., free campus shuttles) to build public trust.

(4) Addressing Systemic Barriers

Grid Modernization: Upgrade power grids to handle increased EV charging demand without destabilizing supply.

Regulatory Support: Streamline permitting processes for charging stations and incentivize renewable energy integration.

A coordinated approach—combining financial support, infrastructure investment, and cultural shifts—is essential to position e-taxis as a viable, scalable alternative. By reducing economic hurdles for businesses and ensuring seamless operations through robust charging networks, the government can drive Hanoi's transition to sustainable mobility while aligning with global climate goals.

6. Conclusions

The research findings indicate that four key factors influence the intention of university students in Hanoi to use electric taxi services. These factors, ranked by their level of impact, are as follows: the perception of usefulness and sustainability ($\beta = 0.518$) has the highest influence, followed by price ($\beta = 0.259$), brand ($\beta = 0.146$), and service quality ($\beta = 0.103$).

These results provide valuable insights for business managers, helping them understand what drives students

to choose electric taxi services for their travel needs. It is essential to focus on enhancing service quality so that students can recognize the usefulness and sustainability of these services for the environment. Additionally, fostering a habit of using electric taxis among students is crucial.

Service providers must also invest in brand development and improve service quality. This approach can encourage students in Hanoi, and Vietnamese students in general, to trust and choose electric taxi services, ultimately contributing to improved business efficiency.

Limitations of the Study.

This study has some limitations due to restricted resources and time. First, the research concepts and survey samples could benefit from broader representation. It is advisable to incorporate the concept of "environmental knowledge" into the model, as this factor significantly influences green purchasing attitudes and behaviors. Moreover, the current student sample does not fully represent the demographic characteristics of young consumers.

Contextual influence: The study was conducted in Hanoi, a city characterized by severe pollution and heavy reliance on motorbikes. This unique urban context—marked by congested traffic and poor air quality—likely shapes users' perceptions and intentions toward e-taxi services. For instance, a heightened awareness of environmental degradation may elevate the relative importance of "sustainability" compared to cities with cleaner air. However, the localized nature of these findings implies limited generalizability, and contextual confounders (e.g., infrastructure challenges, and cultural norms) may not have been fully accounted for in the analysis.

Measurement error and data collection limitations: The use of self-reported questionnaires introduces potential biases, including response bias (e.g., inconsistent interpretations of survey items) and social desirability bias (e.g., overstating pro-environmental attitudes). Variations in respondents' understanding of key constructs—such as "sustainability"—could further skew results, compromising internal validity.

Omitted variables: While the model incorporates eight factors, critical variables like prior experience with ride-hailing apps, peer/family influence, or accessibility of alternative transport were excluded. These omissions may confound observed relationships; for example, students with pre-existing environmental knowledge might exhibit stronger preferences for e-taxis, independent of the studied factors.

Subjectivity of key Constructs: Perceptual measures (e.g., perceived usefulness, service quality, brand image) are inherently subjective and dynamic. Individual differences in interpretation or temporal shifts in user experience (e.g., after repeated e-taxi use) could significantly alter behavioral intentions, suggesting a need for longitudinal or mixed-methods approaches to capture these nuances.

Future research in this area can employ Structural Equation Modeling (SEM) to rigorously examine the complex and latent relationships among variables, as SEM enables simultaneous analysis of multiple pathways, measurement error adjustment, and validation of theoretical frameworks through model fit indices.

Future research should expand the survey sample to ensure it is more representative of young Vietnamese consumers and consider including different age segments to enhance the study's applicability.

Author Contributions

Conceptualization, D.T.T.N. and N.T.K.P.; methodology, D.T.T.N.; software, D.T.T.N..; validation, D.T.T.N. and N.T.K.P.; formal analysis, D.T.T.N.; investigation, D.T.T.N. and N.T.K.P.; resources, D.T.T.N.; data curation, D.T.T.N. and N.T.K.P.; writing—original draft preparation, D.T.T.N.; writing—review and editing, D.T.T.N. and N.T.K.P..; visualization, D.T.T.N.; supervision, D.T.T.N..; project administration, D.T.T.N.; funding acquisition, D.T.T.N. and N.T.K.P. All authors have read and agreed to the published version of the manuscript.

Funding

This work received no external funding.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Not applicable.

Data Availability Statement

Not applicable.

Acknowledgments

We appreciate the valuable comments from anonymous reviewers that helped improve this paper..

Conflicts of Interest

The authors declare no competing interests.

References

[1] Hanh, H., 2023. State budget spending over 21,000 billion VND per year for environmental causes. Available from: https://www.tinnhanhchungkhoan.vn/chi-ngan-sach-nha-nuoc-tren-21000-ty-dong-moi-nam-cho-su-nghiep-moi-truong-post324697.html#:~:text=Th%E1%BB%9Di%20s%E1%BB%B1-,Chi%20ng%C3%A2n%20s%C3%A1ch%20nh%C3%A0%20n%C6%B0%E1%BB%9Bc%20tr%C3%AAn%2021.000%20t%E1%BB%B7%20%C4%91%E1%BB%93ng,cho%20s%E1%BB%B1%20nghi%E1%BB%87p%20m%C3%B4i%20tr%C6%B0%E1%BB%9Dng&text=%E2%80%9CB%C3%ACnh%20qu%C3%A2n%205%20n%C4%83m%20tr%E1%BB%9F,L%E1%BB%A3i%20th%E1%BA%BF%20ng%C6%B0%E1%BB%9Di%20d%E1%BA%ABn%20%C4%91%E1%BA%A7u%22 (cited 27 June 2023).

[2] Shi, X.Q., Li, X.N., Yang, J.X., 2013. Research on carbon reduction potential of electric vehicles for low- carbon transportation and its influencing factors. Chinese Journal of Environmental Science. 2013, 34(1), 385–394.

[3] Gao, Y., 2017. China's response to climate change issues after Paris_Climate Change Conference. Climate Change Research. 13(1), 89–94.

[4] Wu, H.Y., Huang, R., You, L., et al., 2019. Recent progress in taxi trajectory data mining. Acta Geodaetica et Cartographica Sinica. 48(11), 1341–1356. DOI: https://doi.org/10.11947/j.AGCS.2019.20190210

[5] Li, D., Li, Q.Q., Yang, B.S., et al., 2008. Techniques of GIS, GPS and RS for the development of intelligent transportation. Geomatics and Information Science of Wuhan University. 33(4), 331–336.

[6] Vazifeh, M.M., Santi, P., Resta, G., et al., 2018. Addressing the minimum fleet problem in on-demand urban mobility. Nature. 557(7706), 534–538.

[7] World's Most Polluted Cities in 2022. Available from: https://wisevoter.com/country-rankings/most-polluted-countries/#vietnam

[8] Labbe, D., 2021. Urban Transition in Hanoi: Huge Challenges Ahead. ISEAS-Yusof Ishak Institute: Singapore. pp 1-26.

[9] Yen Chi, 2024. What is the total number of fixed inter-provincial passenger transport routes operating across the country? Available from: https://baoxaydung.vn/ca-nuoc-co-bao-nhieu-tuyen-van-tai-hanh-khach-co-dinh-lien-tinh-192240422235604454.htm (cited 23 April 2024).

[10] Thanh Trung, 2023. Every 8 Persons in Hanoi Has One Car. Available from: https://kinhtedothi.vn/hanoi-trung-binh-cu-8-nguoi-co-1-nguoi-so-huu-o-to.html (cited 3 April 2023).

[11] Sumasto, F., Imansuri, F., Agus, M., et al., 2020. Sustainable development impact of implementing electric taxis in Jakarta: A cost-benefit analysis. IOP Conference Series: Materials Science and Engineering. 885, 012027. DOI: https://doi.org/10.1088/1757-899x/885/1/012027

[12] Chiang, S., 2023. Vietnamese EV Maker VinFast Remains Optimistic despite Challenging Entry to U.S. Auto Market. Available from: https://www.cnbc.com/2023/03/08/vietnam-ev-maker-vinfast-us-auto-market.html (cited 29 March 2023).

[13] Coffman, M., Bernstein, P., Wee, S., 2017. Electric Vehicles Revisited: A Review of Factors That Affect Adoption. Transport Reviews. 37, 79–93.

[14] Liao, F., Molin, E., van Wee, B., 2017. Consumer Preferences for Electric Vehicles: A Literature Review. Transport Reviews. 37, 252–275.

[15] Nho, T.T., Vy, N., 2024. Factors Affecting the Students' Usage Intention towards Electric Transportation in Ho Chi Minh City, Vietnam. IOP Conference Series: Earth and Environmental Science. 1403, 012006. DOI: https://doi.org/10.1088/1755-1315/1403/1/012006

[16] Ahmadi, P., 2019. Environmental Impacts and Behavioral Drivers of Deep Decarbonization for Transportation through Electric Vehicles. Journal of Cleaner Production. 225, 1209–1219.

[17] Yan, S., 2018. The Economic and Environmental Impacts of Tax Incentives for Battery Electric Vehicles in Europe. Energy Policy. 123, 53–63.

[18] Hardman, S., Chandan, A., Tal, G., et al., 2017. The Effectiveness of Financial Purchase Incentives for Battery Electric Vehicles—A Review of the Evidence. Renewable and Sustainable Energy Reviews. 80, 1100–1111.

[19] Zhang, X., Xie, J., Rao, R., et al., 2014. Policy Incentives for the Adoption of Electric Vehicles across Countries. Sustainability. 6, 8056–8078.

[20] Chen, T., Zhang, X.-P., Wang, J., et al., 2020. A Review on Electric Vehicle Charging Infrastructure

Development in the UK. Journal of Modern Power Systems and Clean Energy. 8, 193–205.

[21] Singh, V., Singh, V., Vaibhav, S., 2020. A Review and Simple Meta-Analysis of Factors Influencing Adoption of Electric Vehicles. Transportation Research Part D: Transport and Environment. 86, 102436.

[22] Kumar, R.R., Alok, K., 2020. Adoption of Electric Vehicle: A Literature Review and Prospects for Sustainability. Journal of Cleaner Production. 253, 119911.

[23] Rezvani, Z., Jansson, J., Bodin, J., 2015. Advances in Consumer Electric Vehicle Adoption Research: A Review and Research Agenda. Transportation Research Part D: Transport and Environment. 34, 122–136.

[24] Hagman, J., Langbroek, J.H.M., 2019. Conditions for electric vehicle taxi: A case study in the Greater Stockholm region. International Journal of Sustainable Transportation. 13(6), 450–459. DOI: https://doi.org/10.1080/15568318.2018.1481547

[25] Tanwir, N., Hamzah, M., 2020. Predicting Purchase Intention of Hybrid Electric Vehicles: Evidence from an Emerging Economy. World Electric Vehicle Journal. 11(2), 35. DOI: https://doi.org/10.3390/wevj11020035

[26] Nguyen, V., Lam, V., Binh, P., et al., 2024. Research on factors affecting customers' intention to purchase electric vehicles in Ho Chi Minh City. Available from: https://www.researchgate.net/publication/378658145_NGHIEN_CUU_CAC_YEU_TO_ANH_HUONG_DEN_Y_DINH_MUA_XE_DIEN_CUA_KHACH_HANG_TAI_THANH_PHO_HO_CHI_MINH (cited March 2024).

[27] Newmotion, 2020. EV Driver Survey 2020. Newmotion: Amsterdam, The Netherlands. pp. 3-5.

[28] Kotler, P., Keller, K., 2006. Marketing Management, 12th Edition. Prentice Hall: Upper Saddle River, NJ, USA. p.414.

[29] Kotler, P., Keller, K.L., 2009. Marketing Management. Erlangga: Jakarta, Indonesia. pp. 166-167.

[30] He, F., Shen, Z.-J.M., 2015. Modeling taxi services with smartphone-based e-hailing applications. Transportation Research Part C: Emerging Technologies. 58, 93–106.

[31] Pham, A., Dacosta, I., Jacot-Guillarmod, B., et al., 2017. PrivateRide: A Privacy-Enhanced Ride-Hailing Service. Proceedings on Privacy Enhancing Technologies. 2017(2), 38–56.

[32] Tuyen, D., Vu, C., 2023. Green taxi experience: What's so great about electric technology cars? Available from: https://thanhnien.vn/trai-nghiem-taxi-xanh-xe-cong-nghe-chay-bang-dien-co-gi-hay-185230429091444205.htm (cited 29 April 2023).

[33] Ajzen I., Fishbein M., 1980. Understanding attitudes and predicting social behavior. Prentice Hall: Upper Saddle River, NJ, USA. pp. 41-44.

[34] Davis, F.D., 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. Management Information Systems Quarterly. 13, 319–340.

[35] Scherer, R., Siddiq, F., Tondeur, J., 2019. The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. Computers & Education. 128, 13–35. DOI: https://doi.org/10.1016/j.compedu.2018.09.009

[36] Robles-Gómez, A., Tobarra, L., Pastor-Vargas, R., et al., 2021. Analyzing the users' acceptance of an IoT Cloud Platform using the UTAUT/TAM model. IEEE Access. 9, 150004–150020.

[37] Gefen, D., Karahanna, E., Straub, D.W., 2003. Trust and TAM in online shopping: An integrated model. MIS Quarterly. 27(1), 51–90.

[38] Sleiman, K.A.A., Juanli, L., Lei, H., et al., 2021. User trust levels and adoption of mobile payment systems in China: An empirical analysis. Sage Open. 11(4), 215824402110565.

[39] Lee, K., Oh, S., 2022. The users' intention to participate in a VR/AR sports experience by applying the extended technology acceptance model (ETAM). Healthcare. 10(6), 1117.

[40] Venkatesh, V., Morris, M.G., Davis, G.B., et al., 2003. User acceptance of information technology: Toward a unified view. Management Information Systems Quarterly. 27(3), 425–478.

[41] Ghandriz, T., Jacobson, B., Laine, L., et al., 2020. Impact of automated driving systems on road freight transport and electrified propulsion of heavy vehicles. Transportation Research Part C: Emerging Technologies. 115, 102610.

[42] Guo, C., Sentouh, C., Popieul, J.C., et al., 2019. Cooperation between driver and automated driving system: Implementation and evaluation. Transportation research part F: Traffic Psychology and Behaviour. 61, 314–325.

[43] Wu, Z., Zhou, H., Xi, H., et al., 2021. Analysing public acceptance of autonomous buses based on an extended TAM model. IET Intelligent Transport Systems. 15(10), 1318–1330.

[44] Yu, Z., Jiang, K., Huang, Z., et al., 2022. Will I start an automated driving system? Report on the emotions, cognition, and intention of drivers who experienced real-world conditional automated driving. Cognition, Technology & Work. 24(4), 641–666.

[45] Liu, X., Yao, X., Bian, Y., et al., 2021. Drivers' acceptance of mobile navigation applications: An extended technology acceptance model considering drivers' sense of direction, navigation application affinity and distraction perception. International Journal of Human-Computer Studies. 145, 102507.

[46] Vörös, F., Gartner, G., Peterson, M.P., et al., 2022.

What does the ideal built-in car navigation system look like? An investigation in the central European region. Applied Sciences. 12(8), 3716.

[47] Schipor, O.A., Vatavu, R.D., 2021. Empirical results for high-definition video and augmented reality content delivery in hyper-connected cars. Interacting with Computers. 33(1), 3–16.

[48] Cooley, E.H., Sanbonmatsu, D.M., Strayer, D.L., et al., 2022. On-Road vehicle study of the experience of automated driving. Transportation Research Part F: Traffic Psychology and Behaviour. 87, 444– 453.

[49] Hartwich, F., Witzlack, C., Beggiato, M., et al., 2019. The first impression counts: A combined driving simulator and test track study on the development of trust and acceptance of highly automated driving. Transportation Research Part F: Traffic Psychology and Behaviour. 65, 522–535.

[50] Chen, H.K., Yan, D.W., 2019. Interrelationships between influential factors and behavioral intention with regard to autonomous vehicles. International Journal of Sustainable Transportation. 13(7), 511–527.

[51] Dos Santos, F.L.M., Duboz, A., Grosso, M., et al., 2022. An acceptance divergence? Media, citizens and policy perspectives on autonomous cars in the European Union. Transportation Research Part A: Policy and Practice. 158, 224–238.

[52] Leicht, T., Chtourou, A., Youssef, K.B., 2018. Consumer innovativeness and intentioned autonomous car adoption. The Journal of High Technology Management Research. 29(1), 1–11.

[53] Ro, Y., Ha, Y., 2019. A factor analysis of consumer expectations for autonomous cars. Journal of Computer Information Systems. 59(1), 52–60.

[54] Van den Berg, V.A., Verhoef, E.T., 2016. Autonomous cars and dynamic bottleneck congestion: The effects on capacity, value of time and preference heterogeneity. Transportation Research Part B: Methodological. 94, 43–60.

[55] Curtale, R., Liao, F., van der Waerden, P., 2021. User acceptance of electric car-sharing services: The case of the Netherlands. Transportation Research Part A: Policy and Practice. 149, 266–282.

[56] Kapser, S., Abdelrahman, M., 2020. Acceptance of autonomous delivery vehicles for last-mile delivery in Germany: Extending UTAUT2 with risk perceptions. Transportation Research Part C: Emerging Technologies. 111, 210–225.

[57] Tran, V., Zhao, S., Diop, E.B., et al., 2019. Travelers' acceptance of electric carsharing systems in developing countries: The case of China. Sustainability. 11(19), 5348.

[58] Curtale, R., Liao, F., Rebalski, E., 2022. Transitional BI to use autonomous electric car-sharing services: Evidence from four European countries. Transportation Research Part C: Emerging Technologies. 135, 103516.

[59] Venkatesh, V., Thong, J.Y.L., Xu, X., 2012. Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. Management Information Systems Quarterly. 36(1), 157–178.

[60] Foroughi, B., Nhan, P.V., Iranmanesh, M., et al., 2023. Determinants of intention to use autonomous vehicles: Findings from PLS-SEM and ANFIS. Journal of Retailing and Consumer Services. 70, 103158.

[61] Sheth, J.N., Newman, B.I., Gross, B.L., 1991. Why we buy what we buy: A theory of consumption values. Journal of Business Research. 22(2), 159–170.

[62] Acheampong, R.A., Siiba, A., 2020. Modelling the determinants of car-sharing adoption intentions among young adults: The role of attitude, perceived benefits, travel expectations and socio-demographic factors. Transportation. 47(5), 2557–2580.

[63] Kim, H., Jan, I.U., 2021. Consumption value factors as determinants of use intention and behavior of car-sharing services in the Republic of Korea. Innovation: The European Journal of Social Science Research. 37(2), 462–480. DOI: https://doi.org/10.1080/13511610.2021.1890551

[64] Li, H., Wen, H., 2019. How is motivation generated in collaborative consumption: Mediation effect in extrinsic and intrinsic motivation. Sustainability. 11(3), 640.

[65] Zhu, Y., Wei, Y., Zhou, Z., et al., 2022. Consumers' continuous use intention of O2O e-commerce platform on community: A value co-creation perspective. Sustainability. 14(3), 1666.

[66] Bhattacharyya, J., Balaji, M.S., Jiang, Y., 2023. Causal complexity of sustainable consumption: Unveiling the equifinal causes of purchase intentions of plant-based meat alternatives. Journal of Business Research. 156, 113511.

[67] Hwang, H., Yeo, H., 2022. Inconsistency between subjective propensity and practice of sustainable consumption: Impact of the consumers' values-in-behavior and social participation. Sustainable Development. 30(6), 1796–1810.

[68] Jiang, X., Ding, Z., Liu, R., 2019. Can Chinese residential low-carbon consumption behavior intention be better explained? The role of cultural values. Natural Hazards. 95(1–2), 155–171.

[69] Liang, J., Li, J., Lei, Q., 2022. Exploring the influence of environmental values on green consumption behavior of apparel: A chain multiple mediation model among Chinese generation Z. Sustainability. 14(19), 12850.

[70] Roos, D., Hahn, R., 2017. Does shared consumption affect consumers' values, attitudes, and norms? A panel study. Journal of Business Research. 77,

113–123.

[71] Tandon, A., Kaur, P., Bhatt, Y., et al., 2021. Why do people purchase from food delivery apps? A consumer value perspective. Journal of Retailing and Consumer Services. 63, 102667.

[72] Cronin, J.J., Taylor, S.A., 1992. Measuring service quality: A reexamination and extension. Journalof Marketing. 56, 55–68.

[73] Zeithaml, V.A., Bitner, M.J., 2000. Services Marketing. McGraw-Hill: New York, NY, USA. pp. 85-120.

[74] Hu, D.D., Huang, L., Liu, C., et al., 2022. Data driven optimization for electric vehicle charging station locating and sizing with charging satisfaction consideration in urban areas. IET Renewable Power Generation. 16(12), 2630–2643. DOI: https://doi.org/10.1049/rpg2.12382

[75] Chen, C.F., Chen, Y.X., Mu, P.J., et al., 2021. Beyond adoption of shared bike: A case study on antecedents and consequences of brand attachment in Taiwan. Research in Transportation Business & Management. 40, 100574.

[76] Chakraborty, D., Siddiqui, M., Siddiqui, A., 2022. Can initial trust boost intention to purchase Ayurveda products? A theory of consumption value (TCV) perspective. International Journal of Consumer Studies. 46(6), 2521–2541.

[77] Sweeney, J.C., Soutar, G.N., 2001. Consumer perceived value: The development of a multiple item scale. Journal of Retailing. 77(2), 203–220.

[78] Eboli, L., Mazzulla, G., 2010. How to capture the passengers' point of view on a transit service through rating and choice options. Transport Reviews. 30(4), 435–450.

[79] Paundra, J., Rook, L., van Dalen, J., et al., 2017. Preferences for car sharing services: Effects of instrumental attributes and psychological ownership. Journal of Environmental Psychology. 53, 121–130.

[80] Berry, L.L., Seiders, K., Grewal, D., 2002. Understanding service convenience. Journal of Marketing. 66(3), 1–17.

[81] Cruz-Jesus, F., Figueira-Alves, H., Tam, C., et al., 2023. Pragmatic and idealistic reasons: What drives electric vehicle drivers' satisfaction and continuance intention? Transportation Research Part A: Policy and Practice. 170, 103626.

[82] Nijland, H., van Meerkerk, J., 2017. Mobility and environmental impacts of car sharing in the Netherlands. Environmental Innovation and Societal Transitions. 23, 84–91.

[83] Limayem, M., Hirt, S.G., Cheung, C.M.K., 2007. How Habit Limits the Predictive Power of Intention: The Case of Information Systems Continuance. MIS Quarterly. 31(4), 705–737. DOI: https://doi.org/10.2307/25148817

[84] Sakunlertvattana, W., 2016. Factors influencing consumer brand choice of top 3 taxi booking mobile applications in Bangkok: Uber, Grabtaxi and Easy taxi [Master's Thesis]. Bangkok: Bangkok University. pp. 42-45.

[85] Hoque, R., Sorwar, G., 2017. Understanding factors influencing the adoption of mHealth by the elderly: An extension of the UTAUT model. International Journal of Medical Informatics. 101, 75–84. DOI: https://doi.org/10.1016/j.trd.2016.03.011

[86] Madigan, R., Louw, T., Wilbrink, M., et al., 2017. What influences the decision to use automated public transport? Using UTAUT to understand public acceptance of automated road transport systems. Transportation Research Part F: Traffic Psychology and Behaviour. 50, 55–64.

[87] Simsekoglu, Ö., Klöckner, C., 2019. Factors related to the intention to buy an e-bike: A survey study from Norway. Transportation Research Part F: Traffic Psychology and Behaviour. 60, 573–581.

[88] Algesheimer, R., Dholakia, U.M., Herrmann, A., 2005. The social influence of brand community: Evidence from European car clubs. Journal of Marketing. 69(3), 19–34.

[89] Hamari, J., Sjöklint, M., Ukkonen, A., 2016. The sharing economy: Why people participate in collaborative consumption. Journal of the Association for Information Science and Technology. 67(9), 2047–2059.

[90] Fang, W.L., Xin, Y.R., Zhang, Z.H., 2023. Eco-label knowledge versus environmental concern toward consumer's switching intentions for electric vehicles: A roadmap toward green innovation and environmental sustainability. Energy & Environment. 18, 12025.

[91] Lampo, A., Silva, S.C., Duarte, P., 2023. The role of environmental concern and technology showoff on electric vehicles adoption: The case of Macau. International Journal of Emerging Markets. 20(12), 561–583. DOI: https://doi.org/10.1108/IJOEM-10-2021-1637

[92] Li, J., Zhang, A.O., He, H.N., et al., 2023. The effect of environmental concerns on electric vehicles adoption behavior in dual-Distribution channel under the background of platform economy. International Journal of Logistics-Research and Applications. 26(1), 1–19.

[93] Schultz, P.W, Shriver, C., Tabanico, J.J., et al., 2004. Implicit Connections with Nature. Journal of Environmental Psychology. 24, 31–42.

[94] Huong, P.T.L., 2014. Predicting young consumers' green purchase intention: The influence of cultural and psychological factors. Economics & Development. 200(2), 66–78.

[95] Cochran, W.G., 1977. Sampling Techniques, 3rd ed. John Wiley & Sons: New York, NY, USA. pp. 75-76.