Liberal Arts and Social Studies International Journal

Volume 1 Number 1 (January-April 2025)

Comparative Analysis of Consumer Purchase Intentions for Battery Electric Vehicles in Shenzhen and Yangjiang City, China

Xuning Huang[1*], Prayong Kusirisin[2], Sutthikarn Khong-khai[3], Siriporn Kiratikarnkul[4]

[1*, 2, 3, 4]International College, Maejo University, Chiang Mai, THAILAND
[*]Corresponding author, *1174842190.@qq.com

Abstract

This study examines consumer preferences for Battery Electric Vehicles (BEVs) within Shenzhen, a globally recognized mega-city, and Yangjiang, a medium-sized city in China. The research is motivated by increasing global environmental concerns and the urgent need for sustainable transportation solutions. It aims to reveal the factors driving differences in BEVs purchase intentions among consumers in these contrasting urban contexts, considering technological advancements, environmental consciousness, economic considerations, and policy incentives. Adopting a comparative analysis approach, the study is grounded in the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB). Quantitative data were collected through surveys conducted among residents of both cities, providing insights into consumer attitudes and intentions towards BEVs. The results demonstrate significant variations in BEVs adoption intentions between consumers in Shenzhen and Yangjiang, underscoring the complex nature of China's BEVs market. These variations suggest that bespoke strategies are essential for promoting BEVs adoption across different urban settings. The study offers valuable insights for policymakers, automotive manufacturers, and environmental advocates, highlighting the need for tailored approaches to enhance sustainable urban mobility. Conclusively, this research contributes to the understanding of sustainable transportation and consumer behavior, advocating for strategic differentiation in marketing and policy-making to address the diverse needs of urban populations. It emphasizes the critical role of environmental concerns, technological progress, and urban specificity in fostering BEVs adoption, contributing to efforts against climate change and enhancing urban sustainability.

Keywords: Battery electric vehicles, customer purchase intention, consumer behavior, comparative analysis

1. INTRODUCTION

The evolution of Battery Electric Vehicles (BEVs) signifies a pivotal shift in global transport, marking a departure from fossil fuels towards cleaner, sustainable energy sources. Originating in the late 19th century, BEVs have become instrumental in addressing critical environmental challenges (Yakushev et al., 2022), including air pollution and greenhouse gas emissions. This transition not only supports ecological sustainability but

also aligns with global efforts to foster economic growth less dependent on conventional energy sources (Haustein and Jensen, 2018).

China's role in the advancement of BEVs is particularly noteworthy. As the largest auto market globally (Liang and Li, 2023), its pivot towards green and low-carbon solutions has catalyzed significant transformations within the transportation sector. The electric vehicle market, comprising HEVs, PHEVs, BEVs, and FCEVs, is seeing a marked preference for BEVs due to their efficiency and zero-emission profile (Helmers and Marx, 2012). In cities like Shenzhen and Yangjiang, BEVs are gaining popularity for their environmental and energy efficiency benefits, reflecting China's commitment to leading in green transportation.

Despite the BEVs market's growth, research on consumer behavior across different urban contexts, especially in medium-sized cities like Yangjiang, remains sparse. This gap highlights a need for deeper insights into how economic, technological, environmental, and policy factors shape consumer preferences for BEVs in varied urban settings. This study aims to bridge this gap by comparing BEVs purchase intentions in Shenzhen, a megacity, with those in Yangjiang, underscoring the nuanced consumer behaviors in these distinct environments.

This comparative analysis seeks to elucidate the diverse factors influencing BEVs adoption across city sizes (Wang et al., 2021), offering a comprehensive view of the challenges and opportunities present in promoting sustainable transportation. The findings aim to contribute to the broader discourse on green mobility, offering strategic insights for policymakers, urban planners, and auto manufacturers to enhance BEVs uptake. By providing a detailed examination of consumer attitudes toward BEVs, this research enriches our understanding of the evolving landscape of electric vehicle adoption in different urban contexts.

Research Objective

To compare the differences in willingness to purchase BEVs between Shenzhen and Yangjiang city.

2. LITERATURE REVIEW

Theory of Reasoned Action (TRA) and theory of planned behaviors (TPB) play a significant role in understanding the psychological and social factors influencing BEV adoption, highlighting not only universal consumer behaviors but also regional variances. However, the studies have mainly focused on metropolitan areas, and the dynamics of medium-sized cities are poorly understood.

The literature points out that the landscape adopted by BEVs presents complexity, influenced by a range of socio-economic, cultural and environmental factors. This complexity is further amplified in a country such as China, where regional economic development, technology availability, and environmental policies differ significantly. The study shows that while urban consumers like Shenzhen are more inclined to BEVs due to higher environmental awareness and economic capability, the motivations of medium-sized cities like Yangjiang are still poorly understood. This study aims to fill the knowledge

gap by providing a comparative analysis of the purchasing intentions of consumers in Shenzhen and Yangjiang.

Three key literature reviews related to this research study:

2.1 Consumer Behavior

Good (1973) and Bloom (1975) defined behavior as a broad spectrum of human actions, both observable and internal. The Royal Institute Dictionary (2011) and Nattakorn Intui (2016) further elaborated on this, emphasizing that behavior includes any response, conscious or unconscious, to external or internal stimuli. Behavior can be categorized into two types: covert and overt. Covert behaviors are internal processes like thoughts, emotions, and motivations, while overt behaviors are external actions like speaking, walking, or writing. Entrepreneurial behavior, from a psychological standpoint, is often driven by internal motivations such as a desire for achievement, innovation, and independence. However, Nurul., et al., (2024) classified the users exhibit a variety of behaviors, from passive consumption to active engagement.

It can be said that it's important to note that these behaviors are often intertwined and can evolve over time and user base continue to grow. By understanding these behaviors, businesses can tailor their marketing strategies to effectively engage with their target audience.

2.2 Customer Purchase Intention

Customer purchase intention for genetic testing is influenced by perceptions of integrity and attitudes toward the technology. These factors, in turn, are shaped by trust in the message and company, information processing, and risk judgments. The higher levels of trust and effective information processing can positively impact purchase intention, while perceived risks can have a negative effect. In other words, A customer's inclination to purchase genetic testing services is positively correlated with their perception of the company's integrity and their overall attitude toward genetic testing. These perceptions are influenced by factors such as trust in the information provided by the company, the ease with which customers can process and understand this information, and their assessment of potential risks associated with the testing (Matthew et al., 2023 and Yanhui et al., 2020). There are also factors that directly influence purchase intention, for instance, the product's functional and symbolic value dimensions; the brand image of the product; the identity the product represents such as self-identity, social identity, or both self- and social identity, ethnic identity, and cultural identity; as well as brand personality.

It can be concluded that a customer's intention to purchase a product or service in the future can often predict their actual purchasing behavior. There are various factors influenced the customer purchase intention like the marketing and advertising (e.g. How a brand communicates with consumers, particularly through social media, can impact their purchase intent.); the personal experiences (e.g. a customers' past experiences with a product, including emotional, cognitive, and behavioral aspects, can shape their future purchase decisions.); the consumer psychology (e.g. factors like flow experiences and overall attitudes towards the product, which involve emotional, cognitive, and behavioral components, can influence purchase intent.); the product value and branding (e.g. the

functional and symbolic value of a product, the brand's image, and the identity the product represents (e.g., self-identity, social identity, cultural identity) can all impact purchase intention. In short, a combination of marketing strategies, personal experiences, psychological factors, and product attributes can influence a customer's decision to buy.

2.3 Comparative Analysis

Comparative analysis is the process of comparing items to one another and distinguishing their similarities and differences. When a business wants to analyze an idea, problem, theory or question, conducting a comparative analysis allows it to better understand the issue and form strategies in response. It's important to conduct comparative analyses to gain a better understanding of a problem or answer relevant questions. Here are the primary goals companies aim to achieve through the comparison of data sets, documents or processes. Comparative Analysis in the context involves examining causal complexity through set-theoretic methods, focusing on necessary and sufficient conditions across cases. It aims to derive meaningful insights by comparing configurations of conditions leading to specific outcomes (Eva, Thomann., 2022).

Comparative analysis can be defined as the involvement of comparing things to identify similarities and differences. Businesses use this technique to gain a deeper understanding of issues and develop effective strategies. By comparing data, documents, or processes, businesses can achieve several goals. One key application of comparative analysis is in causal complexity analysis. This involves using set-theoretic methods to explore the necessary and sufficient conditions that lead to specific outcomes. By comparing different configurations of conditions across multiple cases, businesses can gain valuable insights into complex causal relationships.

3. RESEARCH METHOD

This study used quantitative research methods to compare the differences in the purchase intention of BEVs between Shenzhen and Yangjiang consumers through questionnaire survey, and paid special attention to the three aspects of attitude, subjective norm and perceived behavioral control to explore the factors that affect the purchase intention of consumers.

The target group of this study is adult consumers living in Shenzhen City and Yangjiang City, aiming to collect data through convenience sampling method. The study used the "Questionnaire Star" platform to distribute questionnaires online, and a total of 400 questionnaires were distributed. During the questionnaire collection process, a total of 387 valid questionnaires were collected. Among them, there are 195 samples from Shenzhen city and 192 from Yangjiang City, which ensures the balance of the number of samples from the two cities and facilitates the subsequent comparative analysis.

The research data were collected in the form of an online questionnaire. The questionnaire was designed according to the research questions and included basic information about the participants and questions related to the research variables. All questions were on a 5-point Likert scale so that participants could express their level of agreement with each statement. The questionnaire was widely distributed among groups in the target cities, ensuring the extensiveness and representativeness of the data. This study uses SPSS statistical software for data analysis, focusing on the use of two-sample

t-test to compare whether there are significant differences in BEVs purchase intentions of consumers in Shenzhen and Yangjiang. This analysis method helps to directly reflect the differences in purchase intentions between the two cities to verify the research hypotheses.

4. RESEARCH RESULTS

4.1 Reliability test

Reliability test is the consistency of results obtained using the same measurement method repeatedly. The study employed Cronbach's alpha coefficient to evaluate questionnaire reliability, a method that assesses internal consistency among item scores on a scale, crucial for analyzing reliability in attitude and opinion surveys.

It is widely acknowledged that a coefficient below 0.6 indicates poor question reliability, necessitating redesign; whereas a α coefficient equal to or greater than 0.7 signifies good question reliability with a high degree of consistency, enabling data analysis. Table 1 displays reliability statistics for various variables such as ATT, SN, and others, with all tested variables and the overall questionnaire meeting established reliability standards, evidenced by Cronbach α values above 0.7, denoting good reliability.

Table 1. Reliability Statistics.

Variable	Number	Cronbach α
Attitude (ATT)	3	0.805
Subjective norm (SN)	3	0.805
Perceived behavioral control (PBC)	3	0.800
Purchase Intention (PI)	3	0.822
Overall questionnaire	12	0.858

4.2 Validity analysis

The primary objective of questionnaire validity measurement is to assess the degree to which the questionnaire accurately captures the intended variables. A higher level of validity is indicated by a stronger alignment between the measurement results and the content being examined, while lower validity is observed when there are deviations from the intended content.

Table 2. KMO and Bartlett's Test.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.846
Bartlett's Test of Sphericity	Approx. Chi-Square	1830.607
	df	66
	Sig.	0.000

The results presented in Tables 2 and 3 demonstrate the questionnaire's adequacy for factor analysis (KMO = 0.846) and the significant outcome of Bartlett's test (Sig. = 0.000), indicating the data's suitability for analysis. The variable factor analysis results further validate the questionnaire's structure, showing clear factor loadings across different variables (ATT, SN, PBC, PI) and a cumulative variance contribution rate of 72.604% for certain variables, which exceeds the 50% threshold, indicating strong construct validity.

Table 3. Variable factor analysis results.

Variable	Code	Element				Cumulative variance contribution rate (%)
		1	2	3	4	
Attitude	ATT 1			0.808		72.604%
	ATT 2			0.823		
	ATT 3			0.807		
Subjective norm	SN 1		0.783			
	SN 2		0.825			
	SN 3		0.798			
Perceived behavioral control	PBC 1				0.774	
	PBC 2				0.842	
	PBC 3				0.815	
Purchase Intention	PI 1	0.838				
	PI 2	0.828				
	PI 3	0.780				
Extraction method: principal component analysis. Rotation method: Kaiser normalization varimax method.						
The rotation has converged after 5 iterations.						

4.3 Two-sample t-test

Two-sample t-test is a hypothesis testing method used to determine whether there is a significant difference between the means of two samples. The results of the data analysis are presented in the table 4 and 5.

4.3.1 Attitudes (ATT) factor:

ATT 1: The result of unequal variance (F=4.575, p=.033) indicates that there is a significant difference in the dispersion degree of consumers' attitude towards a product/service in the two cities. Although the t-test shows that the difference in average attitudes is not significant (t=1.687, p=.092), it indicates that although the average attitudes are close, there are large differences among individual consumers, which may be caused by different marketing effects or cultural differences. ATT 2 and ATT 3: The result of equal variance indicates that the dispersion of consumer attitudes is similar in the two cities. The significant mean difference in ATT 3 (t=2.776, p=.006) points out that in some aspects of attitude, the degree of consensus among consumers in the two cities is different, possibly because specific product/service features have different acceptance in different cities.

4.3.2 Subjective Norm (SN) factor:

SN 1:significant variance inequality (F=6.837, p=.009) and significant mean difference (t=4.205, p<.001) indicates that the social pressure or expectation that affects consumers' purchasing behavior is significantly different in the two cities, and Shenzhen may be more influenced by society.SN 2 and SN 3: Although the results on variance equality are inconsistent, both show significant mean differences, pointing to clear differences between consumers in the two cities when it comes to following social norms.

4.3.3 Perceived Behavioral Control (PBC) factor:

PBC 1, PBC 2, and PBC 3: the results of the analysis of these factors showed that the variance was equal and the significance level was very high (t = 4.767, 4.873, 3.590, p<.001). This suggests that there is a significant difference in the ability of consumers in the two cities to think that they can control their purchasing behavior, which may be related to personal resources, knowledge, or self-efficacy.

4.3.4 Purchase Intention (PI) factor:

PI 1, PI 2, and PI 3: Purchase intention factors show significant purchase intention differences between the two cities, such as PI 1 (t=5.992, p<.001), PI 2 (t=6.597, p<.001), and PI 3 (t=6.812, p<.001). These extremely significant differences show that when buying new products or services, consumers in the two cities show significantly different tendencies. This may be driven by differences in consumers' perceptions of product value, brand trust, market trends, and the effects of marketing strategies.

Table 4. T-test for Equality of Means between Yangjiang City and Shenzhen City.

		t	df	Sig. (2-tailed)	Mean Difference
ATT 1	Equal variances assumed	1.687	385	0.092	0.192
	Equal variances not assumed	1.688	381.944	0.092	0.192
ATT 2	Equal variances assumed	1.759	385	0.079	0.203
	Equal variances not assumed	1.759	384.724	0.079	0.203
ATT 3	Equal variances assumed	2.776	385	0.006	0.326
	Equal variances not assumed	2.776	384.999	0.006	0.326
SN 1	Equal variances assumed	4.205	385	0.000	0.481
	Equal variances not assumed	4.208	382.698	0.000	0.481
SN 2	Equal variances assumed	3.538	385	0.000	0.404
	Equal variances not assumed	3.540	383.573	0.000	0.404
SN 3	Equal variances assumed	3.226	385	0.001	0.377
	Equal variances not assumed	3.227	384.138	0.001	0.377
PBC 1	Equal variances assumed	4.767	385	0.000	0.527
	Equal variances not assumed	4.768	385.000	0.000	0.527
PBC 2	Equal variances assumed	4.873	385	0.000	0.531
	Equal variances not assumed	4.872	383.690	0.000	0.531
PBC 3	Equal variances assumed	3.590	385	0.000	0.422
	Equal variances not assumed	3.590	384.576	0.000	0.422
PI 1	Equal variances assumed	5.992	385	0.000	0.693
	Equal variances not assumed	6.001	371.904	0.000	0.693
PI 2	Equal variances assumed	6.597	385	0.000	0.744
	Equal variances not assumed	6.610	362.814	0.000	0.744
PI 3	Equal variances assumed	6.812	385	0.000	0.764
	Equal variances not assumed	6.823	368.682	0.000	0.764

4.4 Regression Analysis

4.4.1 Correlation analysis

Correlation analysis is primarily a statistical method used to calculate the relationship between variables, and the coefficient is utilized to indicate the extent of this relationship. The prerequisite for conducting regression analysis is that there must be a

certain correlation among the variables. In this study, Pearson correlation analysis was employed to examine the association between variables. Specifically, "*" represents a significance level of 5%, while "**" denotes a significance level of 1%.

The results from Table 5 display the findings of the correlation analysis data. It can be observed that the test outcomes for correlation coefficients between the dependent variable (purchase intention) and independent variables are as follows: 0.372, 0.433 and 0.380 respectively; all with p-values of 0.000 and all index coefficients reaching a significant test level of 0.01 (p<01). Consequently, it can be concluded that there exists a substantial correlation between attitude, subjective norm, perceived behavioral control and consumers' purchase intention; which will subsequently undergo regression analysis in future steps.

Table 5. Analysis results.

	Attitude	**Subjective norm**	**Perceived behavioral control**	**Purchase intention**
Attitude	1			
Subjective norm	0.401**	1		
Perceived behavioral control	0.351**	0.386**	1	
Purchase intention	0.372**	0.433**	0.380**	1
****. Correlation is significant at the 0.01 level (2-tailed).**				

4.4.2 Regression analysis

The dependent variable of purchase intention was subjected to multiple linear regression analysis, with attitude, subjective norm, and perceived behavioral control serving as independent variables. The results presented in Table 6 indicate that the R square value is 0.269, the adjusted R square value is 0.263, and the F value from ANOVA variance analysis is 47.028 with a significance level of 0.000 (<0.05). These findings suggest that there is a significant regression effect and the results are statistically significant. The VIF values for both independent variables included in the model are less than 2, while their tolerance values exceed 0.1, indicating no serious collinearity between these variables.

The t-values for attitude, subjective norm, and perceived behavioral control are respectively calculated as 3.841, 5.585, and 4.249 with a sig value of <0.05 (p<0.05), passing the significance test at a confidence level of 95%. This implies that attitude, subjective norm, and perceived behavioral control all positively influence purchase intention.

Additionally, based on the regression coefficients obtained from this study, the relative importance order regarding their influence on purchase intention can be summarized as follows: subjective norm > attitude >perceived behavioral control.

Table 6. Regression analysis.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Purchase Intention	(Constant)	0.995	0.203		4.890	0.000
	Attitude	0.196	0.051	0.188	3.841	0.000
	Subjective norm	0.287	0.051	0.278	5.585	0.000
	Perceived behavioral control	0.218	0.051	0.207	4.249	0.000
R	0.519					
R Square	0.269					
Adjusted R Square	0.263					
F	47.028		sig		0.000	

5. DISCUSSIONS

This study's findings highlight significant differences in ATT, SN, PBC and PI towards BEVs between Shenzhen and Yangjiang consumers, affirming the TPB's applicability across different urban contexts. Specifically: ATT factors suggest that marketing strategies and cultural nuances influence consumer attitudes differently across cities. Tailored marketing communications are essential for diverse urban markets. SN factors indicate that social pressures and expectations vary significantly, with implications for how BEVs are marketed and promoted within different socio-cultural contexts. PBC factors underscore disparities in perceived control over purchasing decisions, pointing to the need for initiatives that boost consumer confidence and capability, especially in emerging markets. PI factors reveal that the decision to purchase BEVs is heavily influenced by perceived product value, brand trust, and marketing strategies, necessitating a strategic approach to brand positioning.

This study aligns with existing literature on TPB but advances the field by highlighting how urban context influences the model's constructs. Unlike previous research that focused predominantly on single urban contexts or did not account for regional disparities, this comparative analysis provides a deeper understanding of how subjective norms and perceived behavioral control can differ significantly between urban environments.

6. CONCLUSION

This research provides a comparative analysis of consumer purchase intentions for BEVs in Shenzhen and Yangjiang, reinforcing the TPB's relevance in diverse urban contexts. Key contributions include: Main Findings: Significant differences in ATT, SN, PBC, and PI towards BEVs were found between consumers in Shenzhen and Yangjiang. These differences highlight the influence of urban characteristics on consumer behaviors and attitudes towards BEVs. Theoretical and Practical Implications: The study not only supports the TPB in the context of BEVs purchase intentions but also suggests the need for tailored marketing and policy strategies to cater to distinct urban demographics and cultures.

Limitations and Future Research: The use of convenience sampling and the lack of depth in exploring the causes behind consumer behavior variances are noted limitations. Future research should expand on these aspects, possibly incorporating qualitative methods to gain richer insights into consumer motivations and barriers. In essence, understanding the nuances in consumer behavior towards BEVs across different urban settings is crucial for formulating effective strategies to promote sustainable transportation. This study's insights into the variance in purchase intentions offer valuable guidance for policymakers, marketers, and vehicle manufacturers aiming to accelerate BEVs adoption in China's diverse urban landscape.

7. RECOMMENDATIONS

This study underscores the significance of collaborative efforts among automakers, governments, and consumers in advancing BEVs. Automakers are urged to innovate and market BEVs' eco-friendly benefits, leveraging media to foster positive perceptions and ease of use. Governments should bolster BEV advancement via financial incentives, education, and enhancing charging infrastructure, including subsidies and investments in charging stations. For consumers, understanding BEVs' technology, performance, and environmental impact is crucial, alongside convenience considerations. The joint commitment of all stakeholders is essential for BEVs' sustainable growth, emphasizing technological advancements, strategic marketing, environmental consciousness, and consumer education. This multifaceted approach promises to elevate BEVs' adoption and industry evolution.

REFERENCES

Belgiawan, P. F., Schmöcker, J. D., Abou-Zeid, M., & Fujii, S. (2017). Analysis of car type preferences among students based on seemingly unrelated regression. *Transportation Research Record*, 2666(1), 85-93.

Bloom, B. S. (1975). Taxonomy of Educational Objectives: The Classification of Educational Goals. New York: McKay

Brinkmann, D., & Bhatiasevi, V. (2023). Purchase intention for electric vehicles among young adults in Thailand. *Vision*, 27(1), 110-118.

Deka, C., Dutta, M. K., Yazdanpanah, M., & Komendantova, N. (2023). Can gain motivation induce Indians to adopt electric vehicles? Application of an extended theory of Planned Behavior to map EV adoption intention. *Energy Policy*, 182, 113724.

Eva, Thomann. (2022). 3. Approaches to Qualitative Comparative Analysis and good practices: A systematic review. Swiss Political Science Review, doi: 10.1111/spsr.12503

Featherman, M., Jia, S. J., Califf, C. B., & Hajli, N. (2021). The impact of new technologies on consumers' beliefs: Reducing the perceived risks of electric vehicle adoption. *Technological Forecasting and Social Change*, 169, 120847.

Good, C. V. (1973). Dictionary of Education (3rd ed.). New York: McGraw-Hill Book Company.

Haustein, S., & Jensen, A. F. (2018). Factors of electric vehicle adoption: A comparison of conventional and electric car users based on an extended theory of planned behavior. *International Journal of Sustainable Transportation*, 12(7), 484-496.

Helmers, E., & Marx, P. (2012). Electric cars: technical characteristics and environmental impacts. *Environmental Sciences Europe*, 24(1), 1-15.

Liang, Y., & Li, Y. (2023). Exploring the Future of Electric Vehicles in China: Market Trends, Government Policies, Carbon Emissions and Technology Development. *Highlights in Business, Economics and Management*, 6, 236-242.

Matthew, S., VanDyke., Nicole, M., Lee., Alan, S., Abitbol., Stephen, W, Rush. (2023). 3. How message appeals and prior product use influence information processing, risk perceptions, trust, attitudes, and genetic test purchase intentions. PLOS ONE, doi: 10.1371/journal.pone.0283102

Nurul, Afiqah, Ahmad., Nawal, Esa, Yazid, Esa., Azura, Abdul, Rahman., Haryani, Haron., Farhana, Mohd, Nazmi., Nor, Tasnim, Syahera, Rasak. (2024). 1. Tiktok's impact on consumer behaviour: a conceptual reviews. ADVANCED INTERNATIONAL JOURNAL OF BUSINESS, ENTREPRENEURSHIP AND SME's, doi: 10.35631/aijbes.620019

Shiquan, Z. (2020). Interpretation of the new energy vehicle industry development plan (2021-2035)'. *Intelligent Connected Vehicles*, 6(3), 21-23.

Tu, J. C., & Yang, C. (2019). Key factors influencing consumers' purchase of electric vehicles. *Sustainability*, 11(14), 3863.

Wang, X. W., Cao, Y. M., & Zhang, N. (2021). The influences of incentive policy perceptions and consumer social attributes on battery electric vehicle purchase intentions. *Energy Policy*, 151, 112163.

Worasatepongsa, P., & You, J. J. (2022). Why do government policy and environmental awareness matter in predicting NEVs purchase intention? Moderating role of education level. *Cities*, 131, 103904.

Yakushev, O., Hulak, D., Zakharova, O., Kovalenko, Y., Yakusheva, O., & Chernyshov, O. (2022). Management of the modern electric-vehicle market. *Polityka Energetyczna-Energy Policy Journal*, 85-108.

Yanhui, Mao., Yao, Lai., Yuwei, Luo., Shan, Liu., Yixin, Du., Jing, Zhou., Jianhong, Ma., Flavia, Bonaiuto., Marino, Bonaiuto. (2020). Apple or Huawei: Understanding Flow, Brand Image, Brand Identity, Brand Personality and Purchase Intention of Smartphone. Sustainability, 12(8):3391-. doi: 10.3390/SU12083391

ACKNOWLEDGEMENTS

This study was made possible thanks to Maejo University professors and students in Chiang Mai for their invaluable guidance, and the consumers in Shenzhen and Yangjiang for their active participation in surveys. Their support, insights, and contributions were essential for gathering rich data and successfully completing this research.