Labuan Bulletin of International Business &Finance

Volume 22 Issue 1 eISSN 2600- 7894

ELECTRIC VEHICLES IN CHINA AND CHANGZHOU CITY CONSUMER PURCHASE INTENTIONS

Wang, Xicheng [a], Henry Foster[a], Wayne Hamra[a*]

[a] *Faculty of Business Administration, Asia-Pacific International University, Thailand*
**Corresponding author's email: whamra@apiu.edu*

ABSTRACT

The Chinese government and car manufacturers are promoting consumer purchases of electric vehicles (EVs), which have seen many improvements in appearance, functions and driving experience. This study explored attitudes, preferences, and barriers towards electric vehicle adoption among middle-class consumers in Changzhou City, China. With a growing emphasis on sustainable transportation and push for electric mobility, understanding consumer perceptions and motivations is critical for accelerating the transition to electric vehicles. A quantitative research design was used to investigate consumer attitudes, perceived barriers, and policy influences related to EV adoption. The study focused on middle-class consumers in Changzhou City, with a sample group of 442 residents. Most respondents completed online surveys on the Wen Juanxing website, while others completed paper surveys. The findings revealed a positive attitude towards electric vehicles driven by environmental concerns, government incentives, and technological advancements. However, significant barriers such as high purchase prices, limited charging infrastructure, and driving range anxiety were identified as key obstacles to widespread EV adoption. Government policies, including subsidies and incentives, play a crucial role in shaping consumer perceptions and influencing purchase decisions. Additionally, accessibility and availability of charging infrastructure emerged as critical determinants of EV adoption.

***JEL classification**: O330, R400*
***Keywords**: Electric vehicles; technology adoption; middle-class consumers; Changzhou City; purchase intention.*

Received: May 23, 2024
Revised: November 27, 2024
Accepted: November 28, 2024

1. INTRODUCTION

Before 2009, few families in China could afford to buy a car. As the Chinese economy grew rapidly during the next 15 years, more and more families were able to purchase cars. Today, families must decide whether to purchase a gasoline-powered car or an electric vehicle (EV). Gasoline-powered cars, which have internal combustion

engines that was developed almost 140 years ago, are more stable. Currently, China's automotive industry is dominated by traditional gasoline-powered vehicles.

Gasoline, however, is very expensive and contributes to air pollution. There is much concern about air pollution in the cities because of the number of cars. Unlike gasoline-powered vehicles, EVs do not emit tailpipe emissions, and are more economical to operate (Ritchie, 2023).

There are four types of EVs: Battery Electric Vehicles (BEV), Hybrid Electric Vehicles (HEV), Plug-in Hybrid Electric Vehicles (PHEV), and Fuel Cell Electric Vehicles (FCEV) (e-Amrit, n.d.). BEVs are fully powered by electricity, while HEVs use both an internal combustion and a battery-powered motor powertrain. PHEVs use both an internal combustion engine and a battery charged from an external socket. FCEVs get their electrical energy from chemical energy. This research focuses on BEVs and PHEVs, as they are the only types of EVs legally allowed green license plates in China.

The Chinese government has actively promoted EVs to reduce the country's carbon emissions and dependence on imported oil by giving purchase subsidies and other incentives (Yu, 2023). As a result, there has been a surge in EV sales, and China has become the world's largest market for EVs, with sales increasing rapidly (International Energy Agency (IEA), 2023a). However, EVs still account for a relatively small share of total vehicle sales in China, with many consumers still hesitant to switch from traditional gasoline-powered cars (IEA, 2022).

Operating costs and being more environmentally friendly aside, EVs have a number of challenges that may hamper their widespread adoption in China. One of the main barriers is their high purchase price in comparison to gasoline-powered vehicles. Another significant challenge facing consumers is their driving range and the availability of public charging stations.

2. RESEARCH OBJECTIVES

This research study analyzes the current situation in an effort to predict possible answers to these questions. Understanding the potential of EVs and their ability to outperform traditional cars in China is crucial for policymakers, automakers, and other stakeholders in the automotive industry. Furthermore, it explores the attitudes, preferences, and barriers towards EV adoption among middle-class consumers in Changzhou City, China. With the growing emphasis on sustainable transportation and the government's push for electric mobility, understanding consumer perceptions and motivations is critical for accelerating the transition to electric vehicles.

This study was conducted with several research objectives in mind.

(1) To assess the current state of the electric vehicle market in Changzhou City, including the potential for electric vehicles to replace traditional cars.

(2) To study the factors that drive/hinder adoption of electric vehicles in Changzhou City.

(3) To provide recommendations for policymakers, automakers, and other stakeholders on strategies and policies that can accelerate the adoption of electric vehicles in Changzhou City and maximise their potential benefits.

2.1 Value of the study

This research provides data about the EV purchase intentions of selected middle class urban Chinese consumers in Changzhou City, and it may raise consumer awareness

of the benefits of EVs. It provides a voice for potential purchasers to express concerns about factors that hinder their adoption of this new technology, which may assist automobile manufacturers and policy makers in taking account of consumer preferences in their decision making.

As the global automotive industry shifts towards electric mobility, understanding the dynamics and trends of the Chinese EV market is critical for industry players seeking to expand their operations in China.

3. LITERATURE REVIEW

3.1 Consumer behaviour theory

Consumer behaviour theory researches how people make decisions when purchasing goods and services; studying it can help businesses and marketers predict which factors might influence consumer choices. Qazzafi (2020) identified four main groups of factors that affect consumer buying behavior, namely:

1) Personal factors: age, occupation, personality, lifestyle, etc.
2) Psychological factors: perception, motivation, learning, memory, etc.
3) Social factors: group influence, word-of-mouth comments, online social networks, etc.
4) Economic factors: family income, savings, government policies, etc.

A study of consumer buying behavior (Roy & Datta, 2022) found that various sub-elements within these factor groups affect purchase intentions, including perceptions of product features, convenience/ease of use, risks, and price. While many consumers claim to be concerned about environmental issues, sales of green products are still lower than expected in many locations (Kamalanon, 2022). Air quality has become an important quality of life issue in many urban locations, and electric vehicles are a green product that help to reduce exhaust emissions. For these reasons, this study examined the relationship between selected factors that influence consumer buying behaviour and purchase intentions in Changzhou City, China. In this city, government incentives are offered to consumers who purchase an electric vehicle.

3.1 Hypotheses and conceptual framework

Studies of consumer behaviour and purchase intentions toward electric vehicles have uncovered many factors that affect such decisions. Researchers have found that perceptions of "green" product features, which often are costlier than traditional goods, are a critical factor. Zhao et al. (2024) found that favouable opinions of EV's environmental and economic benefits positively influenced Chinese consumers' green purchase intentions. Similarly, reports from Indonesia and Thailand revealed that specific EV features such as battery longevity, reduced emissions, or shorter charging times affected potential EV buyers' purchase intentions (Purwanto & Irawan, 2023; Suvittawat, 2024). So the following hypothesis was proposed:

H_1: There is a positive relationship between favourable consumer perceptions of EV features and their purchase intentions.

Recent research reports have pointed out the value of government promotional policies and incentives in motivating consumers to consider purchasing an EV. A

study in 24 cities across China (Guo et al., 2023) reported that consumers' had positive views of such incentives, while another study (Xie et al., 2022) investigated reactions to an announcement that EV subsidies in China would be gradually discontinued. Macao consumers also held positive views (Cai et al., 2024) of promotional policies such as tax exemptions/reductions, purchase subsidies, and price reductions. Thus, the following hypothesis was formulated:

H_2: There is a positive relationship between Chinese government EV promotional policies and consumer purchase intentions.

Potential EV buyers frequently have mixed feelings about the costs of purchasing and operating an EV, since sticker prices are significantly higher than for internal combustion vehicles. However, the lure of lower potential operating costs is attractive. A study conducted in several prosperous Chinese cities reported that price consciousness had only a minor influence on purchase intention (Xie et al., 2022); however, researchers in other locations have found that financial considerations were a crucial factor in first-time buyer decisions (Raju et al., 2023; Cai et al., 2024; Purwanto & Irawan, 2024). Thus, the following hypothesis was suggested:

H_3: There is a positive relationship between lower EV purchase/operational costs and consumer purchase intentions.

Cost-conscious consumers have also tended to be more concerned about EV operational issues such as driving range (Raju et al., 2023), charging station network availability (Cai et al., 2024), as well as charging time duration and accessibility (Purwanto & Irawan, 2024). Thus, the following hypothesis was offered:

H_4: There is a positive relationship between the development of EV charging infrastructure and consumer purchase intentions.

A brief description of each variable is shown below:

Consumer Perceptions of EVs refers to favourable consumer perceptions of EVs, including their environmental impact, cost savings, and technological appeal, which may have a significant influence on their decision to purchase EVs.

Government EV Policies refers to lower new car registration quotas for traditional cars in many Chinese cities, along with generous government purchase subsidies that are intended to help convince consumers to choose EVs instead of internal combustion vehicles.

EV Purchase and Operating Costs means recent declines in purchase costs, combined with lower operating costs, which are important factors in persuading consumers to invest in and own EVs.

Charging Station Infrastructure means the increasing availability and accessibility of charging infrastructure at both public and private charging stations, which may influence consumer EV ownership intentions.

Consumer EV Purchase Intentions is the stated intention of Changzhou City consumers to buy an EV in the next 5 years.

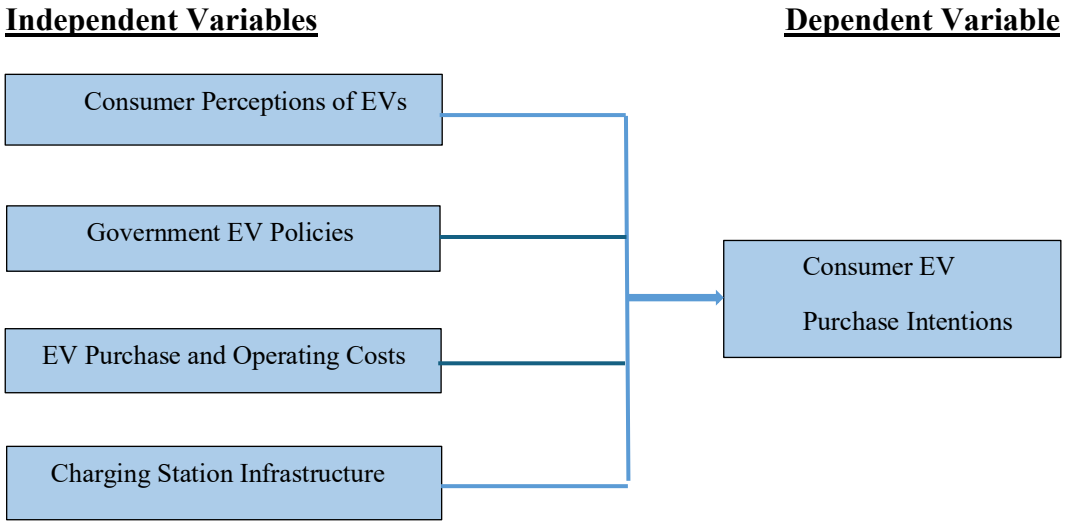

Figure 1: Conceptual framework

4. RESEARCH METHODOLOGY

4.1 Research design

A descriptive quantitative research design was adopted for this study. This approach enables the collection and analysis of numerical data that provides valuable insights into consumer attitudes, preferences, and behaviour related to EV adoption. By employing a quantitative methodology, this research aimed to capture a broad understanding of Changzhou City consumer perspectives on EVs so that meaningful conclusions could be drawn about their readiness for the electric age. After reviewing the data collection plan and survey questions, the Master of Business Administration's Research Committee granted permission and ethical approval for the study (Approval #MBA 2023-16).

4.2 Population and sampling frame

This study adopted Yamane's (1973) formula confidence level of 95% and 5% sampling error and determined the same size should be 400. The target sample consisted of a sample of 400 middle-class Chinese consumers residing in Changzhou City, which included Liyang City. A quota sampling method was employed to divide the overall sample into four groups of 100 people each: those aged from 24-30, those aged from 31-40, those aged from 41-50, and those aged more than 50. Convenience sampling was employed to select towns representing different regions in Changzhou City, considering factors such as economic development and geographical diversity. Within each selected town, stratified sampling was used to ensure representation from different demographic groups based on these age groups.

4.3 Data collection method and data analysis

The survey questionnaires were distributed electronically using online survey platforms, ensuring accessibility through targeted social media advertisements, forums, and email campaigns. Descriptive statistics were used to summarise the participants' responses and to examine the distribution of variables. Inferential statistics, such as correlation analysis and regression analysis, were employed to

identify relationships between variables and explore factors influencing EV adoption. Data were processed using statistical software.

5. FINDINGS

The study's main findings are presented and discussed in the following section.

5.1 Analysis of demographic information

Table 1 shows that a small majority (54.52%) of respondents were female, while 75.34% were from 24-40 years old, which represented the population who seemed the most interested in electric vehicles. Just over two-thirds (68.55%) of the respondents were married, and slightly more than half (52.26%) had a bachelor degree. Since an additional 6.11% of the respondents had a master's degree or higher, the respondents were mostly well-educated.

Table 1: Respondent demographic characteristics (n = 442)

1. Gender

Options	Subtotal	Proportion
Male	201	45.48%
Female	241	54.52%

2. Age

Options	Subtotal	Proportion
Under 24 years old	41	9.28%
24-30 years old	148	33.48%
31-40 years old	185	41.86%
41-50 years old	47	10.63%
Over 50 years old	21	4.75%

3. Marital Status

Options	Subtotal	Proportion
Single	105	23.76%
Married	303	68.55%
Widowed/divorced/separated	25	5.66%
N/A	9	2.04%

4. Educational Level

Options	Subtotal	Proportion
High school or below	21	4.75%

Technical secondary school/high school	76	17.19%
College	87	19.68%
Undergraduate	231	52.26%
Master degree and above	27	6.11%

5.2 Mean value of factors affecting affective commitment

The results of descriptive analysis as shown in Table 2 revealed the mean levels and standard deviations of factors that drive or hinder adoption of electric vehicles in Changzhou City. Consumer EV purchase intention was at a moderate level ($\bar{X}$ = 3.347). When considering each of the factors that drive or hinder the adoption of electric vehicles, it was found that government EV policies had the highest level of influence ($\bar{X}$ = 3.359), followed by EV purchase and operating costs ($\bar{X}$= 3.229) and consumer perceptions of EVs ($\bar{X}$ = 3.200). The perception of charging infrastructure was at a lower level ($\bar{X}$ = 3.070) than all the other factors.

Table 2: Mean value of factors affecting affective commitment (n = 442)

Variables	$\bar{X}$	SD	Perception Level
Consumer Perceptions of EVs	3.200	0.554	Moderate level
Government EV Policies	3.359	0.792	Moderate level
EV Purchase and Operating Costs	3.229	0.581	Moderate level
Charging Infrastructure	3.070	0.660	Moderate level
Consumer EV Purchase Intentions	3.347	0.673	Moderate level

5.3 Correlation of factors that affect adoption of electric vehicles in Changzhou City

In addition, the results of Pearson Correlation Analysis, as shown in Table 3, indicated that all the variables were associated with each other. The relationship between EV purchase and operating costs and consumer perceptions of EVs was the strongest. However, the relationships between EV purchase and operating costs and consumer EV purchase intentions, and between government EV policies and EV purchase and operating costs, were not as strong as the other correlations.

5.4 Simple/multiple regression analysis of person-environment fits and affective commitment

The results of Simple Regression Analysis and Multiple Regression Analysis, shown in Table 4, revealed similar results to the Pearson's Correlation Analysis. All of these factors had a positive relationship toward consumer EV purchase intentions at the statistically significant level of 0.01.

Table 3: Pearson's correlation (n = 442)

Variables	(1)	(2)	(3)	(4)	(5)
(1) Consumer Perceptions of EVs	1.000				
(2) Government EV Policies	0.415**	1.000			
(3) EV Purchase and Operating Costs	0.548**	0.385**	1.000		
(4) Charging Infrastructure	0.506**	0.432**	0.497**	1.000	
(5) Consumer EV Purchase Intentions	0.440**	0.379**	0.365**	0.499**	1.000

Note: **Correlation is significant at the 0.01 level

Table 4: Regression analysis between independent variables and consumer EV purchase intentions (n=442)

Variables	DV: Consumer EV Purchase Intentions				
	Model 1	Model 2	Model 3	Model 4	Model 5
Consumer Perceptions of EVs	0.504**				0.167**
Government EV Policies		0.466**			0.286**
EV Purchase and Operating Costs			0.586**		0.228**
Charging Infrastructure				0.448**	0.169**
R	0.415	0.548	0.506	0.440	0.644
R-Square	0.172	0.301	0.256	0.193	0.415
F	91.458**	189.231**	151.733**	105.403**	77.363**

Note: ** Statistical significance at the 0.01 level

5.5 Research hypothesis test results

In conclusion, according to a test of the theoretical model, the verification results of hypotheses from this study are shown in Table 5.

Table 5: Research hypothesis test results

Hypothesis	Results
H_1: There is a positive relationship between favorable consumer perceptions of EV features and their purchase intentions.	Supported (Model 1 and Model 5)
H_2: There is a positive relationship between Chinese government EV promotional policies and consumer purchase intentions.	Supported (Model 2 and Model 5)
H_3: There is a positive relationship between lower EV purchase/operational costs and consumer purchase intentions.	Supported (Model 3 and Model 5)
H_4: There is a positive relationship between the development of EV charging infrastructure and consumer purchase intentions.	Supported (Model 4 and Model 5)

6. DISCUSSION

This study's research findings are compared with those of previous related studies, and similarities and differences are discussed below.

6.1 Consumer perception of EVs and consumer EV purchase intentions (Hypothesis 1)

The findings indicated that environmental consciousness plays a significant role in shaping consumer attitudes towards electric vehicles. Middle-class consumers in Changzhou expressed a growing concern about environmental impact, cost savings, and technological appeal, which motivated them to consider electric vehicles as a sustainable alternative to conventional cars. This supports Hypothesis 1, which proposed that a positive relationship existed between environmental concerns and EV adoption intentions. The mean scores of factors that drive or hinder the adoption of electric vehicles in Changzhou City indicated that Government EV Policies have the highest level of influence ($\bar{X}$ = 3.359), followed by EV Purchase and Operating Costs ($\bar{X}$= 3.229), and Consumer Perceptions of EVs ($\bar{X}$ = 3.200). The Perception of Charging Infrastructure was at a lower level ($\bar{X}$ = 3.070) than all the other factors. In addition, the results of Pearson Correlation Analysis indicated that the relationship between EV Purchase and Operating Costs and Consumer Perceptions of EVs was the strongest.

These findings are similar to those of a previous study by He (2018), but there was a difference between his findings and those of this study. He's study mentioned that although consumers have environmental concerns when buying cars and believe that EVs are more environmentally friendly than petrol cars, they do not believe that their individual efforts can make a difference in solving this problem. Consumers may acknowledge the environmental characteristics of electric vehicles (EVs); however, they might question the significance of their decision to purchase an EV in terms of environmental conservation.

6.2 Government EV policies and consumer EV purchase intentions (Hypothesis 2)

Government incentives and subsidies emerged as the key driver influencing consumer perceptions and purchase decisions regarding electric vehicles. The availability of financial incentives, such as purchase subsidies, registration and licensing perks, and tax incentives positively impacted consumers' willingness to adopt EVs. This finding supported Hypothesis 2, which posited that government policies have a positive effect on EV adoption intentions among middle-class consumers in Changzhou City. The study found that more than 80% of respondents believed that government incentives would influence their purchase intentions. Less than 4% of respondents believed that government incentives would not influence their purchase intentions at all.

A previous study by Qian (2019) indicated that "If a buyer chooses to buy an EV, the specific policy of obtaining a free license immediately has a far greater effect than the monetary incentive of a 10,000 RMB government subsidy." It's evident that most consumers value the free license even more than the monetary incentives.

6.3 EV Purchase and operating costs and consumer EV purchase intentions (Hypothesis 3)

The research findings indicated that EV purchase and operating costs played a significant role in influencing consumer attitudes and intentions towards electric vehicle adoption. High upfront purchase costs and concerns about long-term operating expenses were identified as a primary barrier to EV adoption among middle-class consumers in Changzhou City. This finding supports Hypothesis 3, which proposed that a positive relationship exists between lower EV purchase and operational costs and consumer purchase intentions. The study found that among 394 valid entries, 152 people (38.58%) ranked lower price as the most important improvement, though only a few respondents stated that lower purchase prices were not very important for their purchase intentions. It should be also noted that more than 80% of respondents indicated that lower operating costs would influence their consideration of purchasing an EV.

The previous study by He (2018) indicated that monetary benefits, including low maintenance and cheap charging expenses, would enhance consumer confidence in buying EVs; the results of this study were quite similar.

6.4 Charging infrastructure and consumer EV purchase intentions (Hypothesis 4)

Charging infrastructure availability and accessibility were identified as critical factors that influence EV adoption. Consumers expressed concerns about the availability of charging stations, particularly in residential areas and along highways, which contributes to range anxiety and affect their willingness to switch to electric vehicles. This finding was consistent with Hypothesis 4, which proposed that charging infrastructure significantly influences EV adoption intentions. This study found that about one-third of respondents expressed moderate concerns about the availability of EV charging infrastructure, and 40% were very concerned or extremely concerned about the availability of EV charging infrastructure. Only 3.85% of the respondents didn't care about this factor at all. These findings were similar to those of a previous study by Qian (2019), which showed that home charging had the biggest and most significant effect on the adoption of EVs. The convenience of charging infrastructure was a priority that consumers considered when deciding whether to buy an EV or not, and consumers valued home charging infrastructures more highly than public charging infrastructure.

7. CONCLUSION

The study's main findings shed light on several crucial aspects of electric vehicle (EV) adoption among middle-class Chinese consumers in Changzhou City. Firstly, a generally positive attitude towards EVs was found, which was largely motivated by environmental concerns and government incentives. However, despite this positive sentiment, significant barriers to adoption were identified, including high purchase prices, limited charging infrastructure, and range anxiety. Furthermore, the study underscored the pivotal role of government EV policies, particularly subsidies and incentives, in shaping consumer perceptions and influencing purchase decisions. Additionally, the accessibility and availability of charging stations–particularly home charging stations–emerged as a key determinant of EV adoption, emphasizing the

necessity of investing in charging infrastructure development to facilitate widespread uptake of electric vehicles.

8. RECOMMENDATIONS

These findings hold practical implications for various stakeholders involved in the promotion and adoption of electric vehicles (EVs). Firstly, regarding Government Policies, continued support through subsidies, incentives, and infrastructure development is recommended to overcome barriers to EV adoption. Financial incentives such as easier access to vehicle licenses, subsidies, tax credits, and rebates can significantly reduce upfront costs, making EVs more accessible to middle-class consumers. Moreover, investing in a comprehensive charging network, particularly in urban areas and along highways, as well making home charging stations more affordable, can alleviate range anxiety and enhance the convenience of EV ownership. Secondly, efforts to raise Public Awareness about the benefits of EVs and dispel myths surrounding them could foster greater acceptance and uptake. Utilizing channels like posters in populous places, digital advertisements, and strategic placement of related advertisements on prominent websites or TV channels can effectively disseminate information. Lastly, Industry Collaboration is pivotal for driving innovation, improving technology, and addressing consumer concerns. Encouraging partnerships among government agencies, automakers, technology providers, and research institutions can lead to advancements in battery technologies, charging solutions, and smart grid integration, thereby enhancing the efficiency and reliability of electric vehicles.

9. LIMITATIONS

This study covered the consumers' perception of EVs in Changhzhou City, China, and all the respondents were residents of a single area. Thus, the study's findings may not reflect those of the broader population of middle-class Chinese consumers who live in other parts of the country. Another issue is that a larger proportion than initially intended already own an EV, and so this may have inadvertently introduced bias into the study's findings. Also, consumers from lower or higher classes were not included in this study, so the results of the study are limited to middle-class consumers in Changzhou City.

The study focused primarily on consumer perceptions and attitudes, without exploring other stakeholders' perspectives such as government officials, automobile manufacturers, or environmental activities. In-depth interviews with respondents were not conducted, and so the study provides an overview of respondent opinions, the reasons for their beliefs and preferences may need to be explored in more detail.

10. SUGGESTIONS FOR FUTURE STUDIES

Future research studies could contribute to a deeper understanding of electric vehicle (EV) adoption dynamics and inform strategic interventions. Firstly, exploring Cross-Cultural Comparisons across different regions or countries could illuminate cultural variations in consumer perceptions and behaviors related to EV adoption, providing insights into global strategies for sustainable transportation. Secondly, investigating the impact of technological advances, such as advancements in battery technology and vehicle automation, on EV acceptance can offer valuable insights into evolving consumer preferences. Thirdly, conducting Policy Evaluation studies to assess the

effectiveness of existing government policies and incentives in China could inform refinements to accelerate the transition to electric mobility. Lastly, integrating Sustainability Considerations into research may shed light on the broader environmental, social, and economic implications of widespread EV adoption, aiding in the development of holistic strategies for sustainable transportation.

REFERENCES

Bureau of Statistics (2023, February 27). Bureau of Statistics: Changzhou's resident population reaches 5,366,200 in 2022. https://www.changzhou.gov.cn/ns_news/80167746125429

Cai, R., Li, L., & Lei, W. (2024). Are residents willing to pay for electric cars? An evolutionary game analysis of electric vehicle promotion in Macao. *World Electric Vehicle Journal, 15,* 371. https://doi.org/10.3390/wevj15080371

Cui, H. (2017). *Subsidy fraud leads to reforms of China's EV market.* International Council on Clean Transportation. https://theicct.org/subsidy-fraud-leads-to-reforms-for-chinas-ev-market/

Desvallon, M. (2022, 19 September). *The race for energy sovereignty. The case of China's EV strategy.* Asia power watch.com. https://asiapowerwatch.com/the-race-for-energy-sovereignty-the-case-of-chinas-ev-strategy/

e-AMRIT. (n.d). *Types of electric vehicles*. e-AMRIT. https://e-amrit.niti.gov.in/types-of-electric-vehicles

Guo, Q., Liu, Y., & Cai, L. (2023, March 29). An experimental study on the potential purchase behavior of Chinese consumers of new energy hybrid electric vehicles. *Frontiers in Environmental Science 11:*1159846. https://doi.org/10.3389/fenvs.2023.1159846

Huld, A., & Interesse, G. (2023, July 31). *The middle class in China - growth, policy, and consumption*. China Briefing News. https://www.china-briefing.com/news/china-middle-class-growth-policy-and-consumption/

International Energy Agency (IEA) (2022, 4 February). *Market share of new electric passenger vehicles by country/region (2015–2021).* Global EV data explorer. https://www.iea.org/data-and-statistics/data-tools/global-ev-data-explorer

International Energy Agency (IEA) (2023a). *Electric vehicles.* https://www.iea.org/energy-system/transport/electric-vehicles#

International Energy Agency (IEA) (2023b). *Global EV outlook 2023.* IEA.org, Paris, France. https://www.iea.org/reports/global-ev-outlook-2023, License: CC BY 4.0

Kamalanon, P., Chen, J. S., & Le, T. T. Y (2022). Why do we buy green products? An extended theory of the Planned Behavior Model for green product purchase behavior. *Sustainability 14,* 689. https://doi.org/10.3390/su14020689

Kottasová, I. (2023, March 27). *EU was set to ban internal combustion engine cars. Then Germany suddenly changed its mind.* CNN. https://edition.cnn.com/2023/03/24/cars/eu-combustion-engine-debate-climate-intl/index.html

LaMonaca, S., & Ryan, L. (2022). The state of play in electric vehicle charging services – A review of infrastructure provision, players, and policies. *Renewable and Sustainable Energy Reviews, 154*, 111733. https://doi.org/10.1016/j.rser.2021.111733

Low, J., & Jones, C. (2022). *Global EV market grew 55% in 2022 with 59% of EVs sold in mainland China.* Canalys.com. https://www.canalys.com/newsroom/global-ev-sales-2022

Ministry of Industry and Information Technology of the People's Republic of China. (2019a). Public announcement on the preliminary review of subsidies for the promotion and application of new energy vehicles in 2016 and previous years. http://www.caam.org.cn/chn/9/cate_107/con_5222055.html

National Development and Reform Commission. (2021). China's middle-income group has exceeded 400 million, how to "expand" the middle-income army.

Nirmala J, C., & Dsouza, J. (2023). A study on the impact of perceived benefits on customer preference for electric vehicles. *SDMIMD Journal of Management, 14*(Special Issue), 15–26. https://doi.org/10.18311/sdmimd/2023/33279

Purwanto, E., & Irawan, A. P. (2023, November 8). The willingness to purchase electric vehicles: A comprehensive review. *The 7th International Conference on Eco Engineering Development (2023) (ICEED 2023)*, Binus University, Jakarta, Indonesia. https:/doi.org/10/1088/1755-1315/1324/1/012091

Qazzafi, S. (2020). Factor affecting consumer buying behavior: A conceptual study. *International Journal for Scientific Research & Development 8*(2), 1205–1208. https://www.scribd.com/document/476240778/IJSRDV8I20938

Raju, S., Ali, M., Rama Chandra Murthy, V., & Bhasker Rao, Y. (2024). Factors driving consumers to purchase an electric vehicle in Telangana State, India. *Economic Affairs 69*(02), 883–891. https://doi.org/10.46852/0424-2513.3.2024.13

Ritchie, H. (2023). Do electric vehicles reduce air pollution? https://www.sustainabilitybynumbers.com/p/electric-vehicles-air-pollution.

Roy, P., & Datta, D. (2022). Determinants of consumer buying behavior towards online and offline shopping. *International Journal for Research in Engineering, Application & Management 08*(03), 174–179. https:/doi.org/10.2139/ssrn.4152228

State Council. (2009). Auto industry adjustment and revitalization plan. http://www.gov.cn/zwgk/2009-03/20/content_1264324.htm

Suvittawat, A. (2024). Exploring the relationship between supply chain agility, consumer and electric vehicles characteristics, and purchase intentions in Thailand: A structural equation modeling approach. *World Electric Vehicle Journal, 15,* 294. https://doi.org/10.3390/wevj15070294

Xie, R., An, L., & Yasir, N. (2022). How innovative characteristics influence consumers' intention to purchase electric vehicle: A moderating role of lifestyle. *Sustainability, 14,* 4467. https://doi.org/10.3390/su14084467

Wang, S. (2023, March 15). *One in four cars sold in China in 2022 was an EV with BYD powering country's outperformance*. Counterpoint. https://www.counterpointresearch.com/china-ev-sales-2022/#:~:text=Powering%20Country%27s%20Outperformance-,One%20in%20Four%20Cars%20Sold%20in%20China%20in%202022%20Was,With%20BYD%20Powering%20Country%27s%20Outperformance&text=China%27s%20EV%20sales%20almost%20doubled,8%20million%20units% 20in%202023

Yan, F., & Dou, M. (2016, September 11). What does an incomplete list of companies engaged in new energy vehicle subsidy fraud mean? *People's Daily Online*. http://auto.people.com.cn/n1/2016/0911/c1005-28706880.html

Yu, B. (2023). Life after subsidies for China's EVs. https://chinadialogue.net/en/business/life-after-subsidies-for-chinas-evs/

Zhao, H., Furuoka, F., Rasiah, R., & Shen, E. (2024). Consumers' purchase intention toward electric vehicles from the perspective of perceived green value: An empirical survey from China. *World Electric Vehicle Journal, 15,* 267. https://doi.org/10.3390/wevj15060267

Zhou, F., Peng, L., & Li, J. (2022). China's 14th five-year plans on renewable energy development and modern energy system. *Energy Foundation.* https://www.efchina.org/Blog-en/blog-20220905-en#:~:text=The%20new% 2014th% 20RE%20FYP,share%20could%20exceed%2050%20percent