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Key Factors Shaping Purchase Intentions for New Energy Vehicles in Urumqi, China

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Abstract

Due to the increasing awareness of the United Nations' Sustainable Development Goals (SDGs) in China, there has been a notable shift in consumer behavior, with more individuals choosing to purchase new energy vehicles (NEVs) as their personal transportation. In response, the Chinese government has implemented policies to encourage NEV adoption. This study uses Urumqi as a sample area to examine the impact of personal preferences, social influences, and government policies on consumer behavior, specifically the intention to purchase NEVs in China. The research is based on the Theory of Planned Behavior (TPB). The findings reveal that consumer behavior in adopting NEVs is significantly influenced by social factors, including peer attitudes and behaviors, along with government support policies.

Keywords: *New Energy Vehicles (NEVs), Purchase Intention, Government Policies, Theory of Planned Behavior (TPB).*

Introduction

Background of this Research

New energy vehicles (NEVs) are crucial for achieving the United Nations' Sustainable Development Goals (SDGs), especially those related to sustainable cities, clean energy, and climate action. Governments worldwide are promoting NEVs to replace traditional fuel vehicles (Ferranti, 2019). China initiated policies to encourage NEV adoption even before the SDGs were established in 2015. These efforts aimed to address urban air pollution and promote sustainable energy. Initially, there was resistance from Chinese consumers due to safety and convenience concerns, but initiatives like the Healthy China 2030 program helped mitigate these fears (Dai & Menhas, 2020; Wang et al., 2020).

As the transportation sector significantly contributes to CO2 emissions, NEVs were seen as an essential solution. Although public transport in major cities transitioned to NEVs, early sales remained low, with fewer than 20,000 units sold from 2009 to 2012. However, NEV sales rapidly increased from 17,600 in 2013 to 6.886 million in 2022, an annual growth rate of over 50%. By mid-2023, sales had reached 3.75 million, with expectations of exceeding 10 million by year-end (National Bureau of Statistics of China, 2023). This study explores the factors behind the rapid increase in NEV purchase intentions in China.

Research Problem

In recent years, China's energy consumption and environmental problems have become increasingly serious. Data show that in 2017, China's private car ownership increased from 108.38 million in 2012 to 208.16 million, with an average annual growth rate of 13.9% and the rapid growth in private car ownership has greatly exacerbated energy consumption and environmental problems (Huang, X. and Ge, J. 2019). The growth in private car ownership has led to an increase in gasoline and diesel consumption from 256.56 million tons in 2012 to 287.82 million tons in 2017 making China dependent on imports for 67.4% of its oil consumption in 2017 (Huang, X. and Ge, J. 2019). Moreover, air pollution in cities is becoming increasingly serious due to the significant increase in exhaust emissions, with data showing that 70.7% of prefecture-level cities in China had poor air quality in 2017 (Huang, X. and Ge, J. 2019). To reduce petrol consumption and emissions, improve urban air quality, and achieve Sustainable Development Goals (SDGs),

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the Chinese government has implemented a series of incentives to encourage the purchase of New Energy Vehicles (NEVs). These policies include financial incentives, tax breaks, and the development of charging infrastructure (Liang & Li, 2023). In addition to the relevant policies introduced by the government, many other factors also influence the purchase intention of new energy vehicles (NEVs) in China. Studies have shown that personal factors such as monthly income, number of cars in the household, sustainability, vehicle comfort, age, and marital status can have a significant impact on consumer behavior and purchase intentions. Researchers have also found that social factors, such as having a wide range of contacts and knowing EV owners, also significantly increase purchase intentions (Habich-Sobiegalla et al., 2019).

In contrast, macro factors, such as air pollution and EV charging infrastructure, which are thought to play an important role, appear to have minor impact on willingness to buy (Habich-Sobiegalla et al., 2019). But government policies, including subsidies, license fee waivers, and prioritizing the construction of charging infrastructure, remain crucial in promoting the sales of new energy vehicles (Fan et al., 2020). Although government policies play a major role in promoting the sales of new energy vehicles, other factors such as consumer incentives and public awareness campaigns can also be effective in boosting the sales of new energy vehicles, and it has been found that new energy vehicles do not only exist to replace traditional fuel vehicles (TFVs) it also stimulates technological development in the entire automotive industry (Zheng, 2024).

From the results of these studies, it is easy to realize that Chinese consumers' willingness to purchase new energy vehicles is influenced by a complex mix of personal preferences, social influences and government policies. Although personal and social factors are important, the role of government policies should not be ignored because it has direct and indirect effects on consumers' acceptance of new energy vehicles (Fan et al., 2020; Habich-Sobiegalla et al., 2019; Zheng, 2024). Therefore, this study aims to investigate the effects of individual preferences, social influences and government policies on the purchase intention of new energy vehicles in China.

Research Questions and Research Objectives

Based on the research background and the research problems discussed in the previous paragraph, there will have four research questions for this paper:

RQ1. What is the relationship between the attitudes toward NEVs and NEVs purchase intentions in Urumqi China?

RQ 2. What is the relationship between the subjective norms and NEVs purchase intentions in Urumqi China?

RQ3: What is the relationship between the perceived behavior control and NEVs purchase intentions in Urumqi China?

RQ4: What is the relationship between the government policy and NEVs purchase intentions in Urumqi China?

Therefore, in order to answer these questions, the objectives of this research would be.

RO1: To identify the relationship between the attitudes toward NEVs and NEVs purchase intentions in Urumqi China.

RO2: To examine the relationship between the subjective norms and NEVs purchase intentions in Urumqi China.

RO3: To determine the relationship between the perceived behavior control and NEVs purchase intentions in Urumqi China.

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RO4: To explore the relationship between the government policy and NEVs purchase intentions in Urumqi China.

The Scope of Research

Purchase intentions for new energy vehicles (NEVs) in China are shaped by personal preferences, social influences, and government policies. Individual factors like vehicle quality, environmental awareness, and cost significantly affect consumer behavior (Fan et al., 2020). Social influences, including reference groups and subjective norms, also play a key role, with norms strongly impacting NEV purchase decisions (Jiang et al. 2021). Government incentives and promotion strategies further influence consumer attitudes, with financial support positively affecting purchase intentions (Bian and Panyagometh, 2023).

However, despite high purchase intentions, actual purchase behavior remains low, indicating a gap between intentions and actions (Fan et al., 2020). Moreover, the impact of government policies varies across regions, with some areas showing weaker-than-expected policy effects. While personal and social factors are crucial in shaping NEV purchase intentions, bridging the gap between intentions and actual purchases and optimizing policy impact remain challenges for stakeholders in the NEV market (Li et al., 2020; Fan et al., 2020).

Hypothesis

Hypothesis 1: There is a positive relationship between attitude and purchase intention on NEV in China.

Hypothesis 2: There is a positive relationship between subjective norms and purchase intention on NEV in China.

Hypothesis 3: There is a positive relationship between perceived behavior control and purchase intention on NEV in China.

Hypothesis 4: There is a positive relationship between government policy and purchase intention on NEV in China.

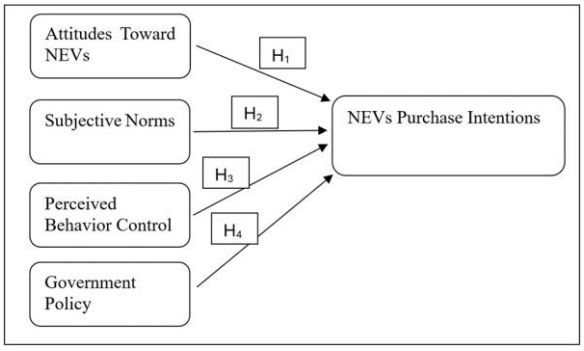

Figure 1 Conceptual Framework – Author

Methods & Materials

Proposed Methodology

This study aims to explore the complex interplay of personal preferences, social influences, and government policies on the purchase intention of new energy vehicles (NEVs) in China and to identify the links between (1) attitudes toward NEVs, (2) subjective norms, (3) perceived behavioral control and (4) government policies. This study used a quantitative method to conduct a self-administered questionnaire survey of people who have purchased or plan to purchase NEVs in Urumqi.

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In order to achieve the research objectives, both primary and secondary research will be conducted. The data collected in this study will be analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to explore the relationship between the constructs. The PLS-SEM methodology used in this study follows the two-step procedure of Anderson and Gerbing, which was also adopted by Hair et al. (2019), whereby a measurement model is estimated prior to estimating the proposed structural model.

The primary study consists of four aspects: determining the appropriate research paradigm; identifying the study population; collecting data from the sample; and analyzing the collected data. The number of questionnaires to be distributed will be determined based on the design proposed by Krejcie and Morgan in 1970. The secondary research was conducted through an extensive literature search and review, with the objective of identifying the context of the study and relevant studies conducted in the field in the past. By conducting an in-depth review of academic journals, a framework for the study was developed and the most suitable and appropriate measures were utilized to make the study actionable.

Theory

The Theory of Planned Behavior (TPB) or Technology Acceptance Model (TAM) is an extended version of the Theory of Rational Behavior, first proposed by Ajzen. The psychological framework, which aims to predict and explain human behavior, is based on the theory of rational behavior, and incorporates the concept of perceived behavioral control. According to this theory, behavioral intentions are the primary determinants of an individual's behavior. Ajzen's research has found that three key factors influence this theory: perceptions of behavior, subjective norms, and perceived behavioral control. This framework is commonly used in marketing and other areas of research to understand behaviors such as consumer purchase decisions.

The theory of planned behavior (TPB) has been widely used to understand the purchase intention of new energy vehicles (NEVs). The theory of planned behavior suggests that attitudes, subjective norms, and perceived behavioural control affect an individual's behavioral intention, which in turn predicts actual behaviour. In the case of NEVs, these factors have been used in various studies to predict consumers' purchase intention. Some studies have found that the three TPB constructs of attitude, subjective norms, and perceived behavioural control can significantly predict NEV purchase intention (Ackaah et al., 2021; Cheng, et al. 2024; Handarujati, 2024; Kong et al. 2020; Solekah et al., 2023; Wu et al., 2021). It is worth noting that perceived behavioural control tends to have a significant impact on behavioral intention to purchase NEVs (Handarujati, 2024; Kong et al. 2020). In addition, past behavior and role identity have also been identified as additional factors that can enhance the predictive power of the TPB model. In contrast, one study found that when actual purchase behavior was included in the model, attitude antecedents became less important, suggesting that past behavior may have a more direct influence on future purchase behavior than attitudes (Kong et al. 2020). Based on the existing research, it can be concluded that the TPB is a robust framework for understanding NEV purchase intention, and its core constructs consistently predict purchase intention across different contexts. The inclusion of past behaviour and role identity as additional predictors suggests that the TPB can be extended to provide a more comprehensive understanding of consumer behavior in the NEV market. These findings highlight the importance of perceived behavioral control in forming purchase intention and suggest that interventions aimed at enhancing consumers' perceived control could be effective in promoting NEV adoption (Ackaah et al., 2021; Handarujati, 2024; Kong et al. 2020; Solekah et al., 2023; Wu et al., 2021).

The Theory of Planned Behavior (TPB) is also often used in studies related to understanding the purchase intentions of new energy vehicles (NEVs) in China. Wu et al. (2021) used the Theory of Planned Behavior (TPB) to identify a range of factors influencing these intentions in their study such as perceptions of the NEVs, subjective norms, perceived behavioral control, knowledge of the environment, and environmental concerns (Wu et al. 2021). It was also found that previous consumption behavior did not positively influence consumers' NEV purchase intentions, suggesting that other factors in the TPB framework such as attitudes towards new energy vehicles may have a greater influence on whether consumers purchase Chinese new

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energy vehicles (Fengfan & Yee, 2023). These studies confirm the importance of attitudes, subjective norms, and perceived behavioral control in studying the purchase intention of Chinese new energy vehicles (NEVs). Therefore, TPB is a valuable framework for understanding Chinese NEV purchase intentions.

Research Design

In China, quantitative studies on new energy vehicle (NEV) purchase intentions involve systematic empirical investigations of consumer behavior and attitudes using statistical, mathematical, or computational techniques. Previous studies have used a variety of quantitative methods, such as questionnaires and structural equation modelling (SEM), to analyze the factors that influence consumers' intentions to purchase new energy vehicles (Bian & Panyagometh, 2023; Dong, 2021; Wang et al. 2023). These studies have highlighted that there are complex interactions among factors including environmental awareness, perceived product attributes, government policies, and individual psychological characteristics that influence purchase intentions.

Notably, some studies have emphasized the importance of functional and symbolic attributes of new energy vehicles (Wang & Tian, 2023), while others have highlighted the role of environmental concerns and perceived risks (Liu et al., 2021; Shanmugavel & Alagappan, 2023). In addition, the impact of government policies and incentives is a recurring theme, although their effectiveness has been controversial (Bian & Panyagometh, 2023; Dong, 2021; Wang et al.) Quantitative research on purchase intentions for new energy vehicles in China will provide valuable insights into the factors and potential barriers to consumer acceptance of new energy vehicles. These findings are critical for stakeholders, including automakers and policymakers, to formulate strategies that promote the diffusion of new energy vehicles and contribute to the achievement of development goals. Together, these studies highlight the multifaceted nature of the consumer decision-making process and the need for a nuanced understanding of new energy vehicle market dynamics (Bian & Panyagometh, 2023; Dong, 2021; Vafaei-Zadeh et al., 2022; Wang & Tian, 2023; Wang et al.)

Sampling Design

The people (individuals) who buy or plan to buy new energy vehicles in Urumqi are used as respondents. Due to time constraints, this study will use a non-probability sampling method to sample acquaintances, relatives, colleagues, and the general public those who were visiting car shop. The reason to choose Urumqi as the research area is: It is my hometown, which makes me collect data easier than another place. Urumqi as one of the big cities in north-west China is worth to study with. And there has no study of NEVs Purchase Intentions in Urumqi have been done in before.

Based on the G*Power 3 analysis, for present research is 129 with F test being selected for Linear Multiple Regression statistical test (Effect size, f 2 = 0.15, Probability of error, $\alpha = 0.05$, Power level $(1 - \beta) = 0.95$ and number of predictors = 4). According to Hair, Hult, et al (2019), the commonly used power level of 80% is acceptable for social science research and the specific level of complexity of the PLS path model. In the current study, since the maximum number of independent variables in the measurement and structural models is four, to detect an R2 of at least 0.25 with a 5 % probability of error the researcher would need forty-one observations. As a result, for a better result the sample size for this research would be 190 which is easier to collect in a short period and also larger than the minimum requirement.

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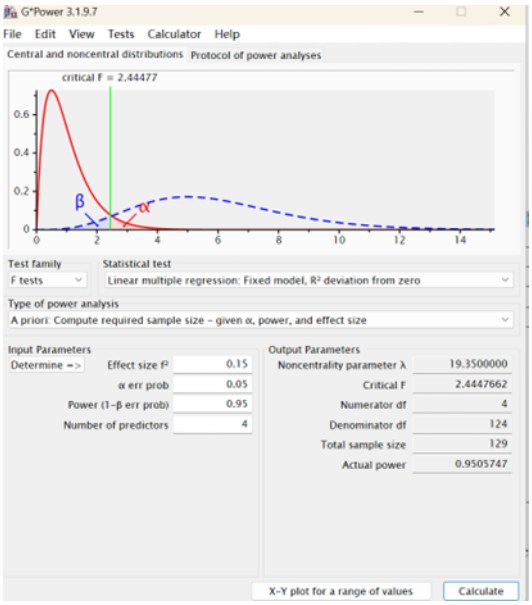

Figure 2 G*Power sample size result from G*Power software.

Results

Pilot Study

Pilot studies are commonly used in marketing research as preliminary investigations to refine and test the feasibility of the research design, methodology, and tools before a full-scale study is conducted. It identifies potential problems and allows researchers to make necessary adjustments to ensure the reliability and validity of the formal study. Failure to conduct a pilot study, on the other hand, may result in a flawed research process and design development, leading to failure of the study. Not only that, but pilot studies also allow marketing-related research to adapt to changing environments, such as conducting online surveys during the COVID-19 pandemic (Larka, 2022). A pilot study is an essential step in marketing research because it improves the design and methodology of the study, leading to more reliable and credible conclusions.

Constructs	No. of Items	Cronbach's Alpha
Biographic profile	5	0.764
Attitudes	3	0.766
Subjective norms	4	0.815
Perceived behavior control	4	0.768
Government policy	3	0.761
Purchasing intentions	4	0.854

Table 1 Pilot testing result- Reliability of the constructs (followed Source: Hair et al. 2019)

Demographic Profile

Demographic profile questions typically involve categorical or nominal data, such as age groups, gender, and education levels. Partial Least Squares Structural Equation Modeling (PLS-SEM) generally requires continuous data or, at a minimum, ordinal data that can be treated as continuous. This requirement is due to the statistical techniques used in PLS-SEM, such as regression and factor analysis, which assume that

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data is measured at interval or ratio levels. Consequently, the data from the demographic profile section can only be appropriately analyzed using SPSS.

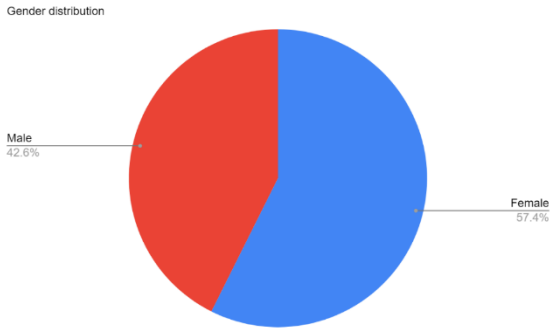

Figure 3 gender distribution

The gender distribution of this questionnaire shows female responders are slightly more than male responders.

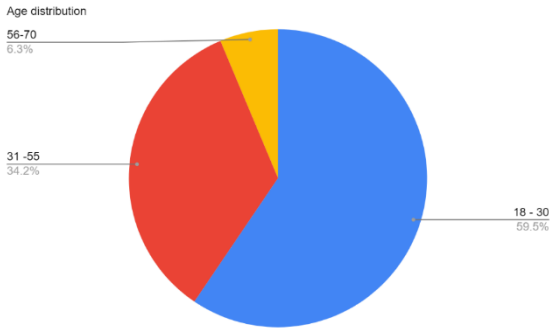

Figure 4 Age distribution

Age distribution shows that almost 94% of respondents are young adults and working adults.

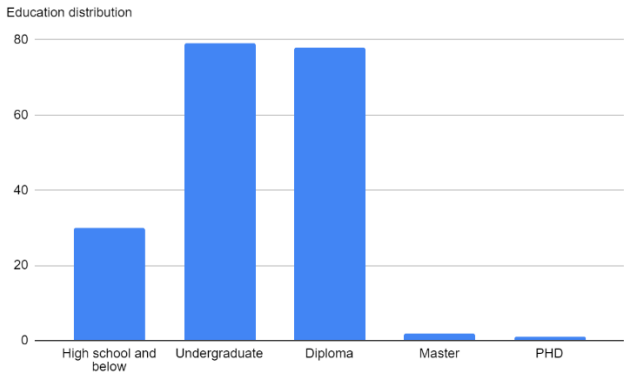

Figure 5 Education distribution

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Education distribution shows that more that 50% of the respondents have a higher education experience.

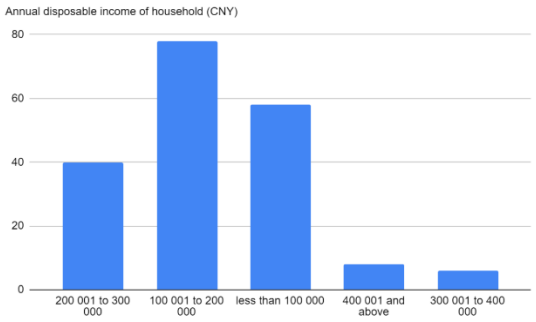

Figure 6 Annual disposable income of household

The annual disposable income of household shows that most responder's family have 0 to 200000 in their family to spend every year.

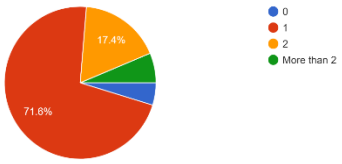

Figure 7 Number of cars owned by the household

Number of cars owned by the household shows that most of the responders have at least one car in their family.

The number of female respondents was slightly higher than the number of male respondents, but the difference was negligible. Nevertheless, the online survey yielded a demographic composition where 94% of participants were either young or working adults, indicating that the study predominantly represents the perspectives of a relatively youthful cohort. The results are only applicable to older age groups due to this limitation. Furthermore, more than 50% of the participants possessed a higher level of education, suggesting that the sample consisted of highly educated individuals. Education has the potential to influence people's attitudes and behaviors, particularly in relation to the adoption of technology, environmental consciousness, and economic considerations. This could potentially result in a more pronounced bias in the collected data. Given the respondents' youth, it is likely that the majority of individuals have a disposable income ranging from 0 to 200,000. This indicates that the sample may not accurately represent wealthier demographics, potentially impacting survey findings regarding purchasing power or economic sensitivity. According to the data, the majority of respondents possess at least one vehicle in their household. This implies that the respondents have a fundamental comprehension of car ownership, and the survey findings may not accurately represent individuals who do not possess a car.

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Reflective Measurement Model

Construct Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Attitude	0.766	0.838	0.865	0.685
Government policy	0.761	0.776	0.862	0.676
Perceived behavioral control	0.768	0.803	0.849	0.586
Purchase Intention	0.854	0.855	0.901	0.695
Subjective norms	0.815	0.854	0.877	0.641

Table 2 Construct Reliability and Validity

This table shows that all Cronbach's alpha is smaller than Composite reliability (both rho-a and rho-c), and the AVE are all larger than 0.5, which means those indicators has generalizable.

Discriminant validity- heterotrait-monotrait (HTMT)

	Heterotrait-monotrait ratio (HTMT)
Government policy <-> Attitude	0.337
Perceived behavioral control <-> Attitude	0.370
Perceived behavioral control <-> Government policy	0.977
Purchase Intention <-> Attitude	0.337
Purchase Intention <-> Government policy	0.424
Purchase Intention <-> Perceived behavioral control	0.399
Subjective norms <-> Attitude	0.320
Subjective norms <-> Government policy	0.424
Subjective norms <-> Perceived behavioral control	0.346
Subjective norms <-> Purchase Intention	0.447

Table 3 Discriminant validity- heterotrait-monotrait

	Attitude	Government policy	Perceived behavioral control	Purchase Intention	Subjective norms
Attitude	0.828				
Government policy	0.265	0.822			
Perceived behavioral control	0.289	0.757	0.766		
Purchase Intention	0.281	0.350	0.342	0.834	
Subjective norms	0.268	0.333	0.290	0.385	0.801

Table 4 Fornell and Larcker criterion

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Based on Fornell and Larcker criterion subjective norms has lowest rate with other variables

Reflective Structural Model Evaluation

Path Coefficients

	Path coefficients
Subjective norms -> Purchase Intention	0.268
Attitude -> Purchase Intention	0.139
Perceived behavioral control -> Purchase Intention	0.129
Government policy -> Purchase Intention	0.126

Table 5 Path Coefficients

All path coefficients are positive means that all four factors have positive affect on purchase intention, subjective norms have the biggest path coefficients.

All four factors have a positive impact on purchase intention, with subjective norms having the largest coefficient, indicating that social influence is the most important predictor. This finding highlights the importance of social and cultural factors in influencing Chinese consumers' purchase of new energy vehicles.

VIF

	VIF
Attitude -> Purchase Intention	1.139
Government policy -> Purchase Intention	2.426
Perceived behavioral control -> Purchase Intention	2.393
Subjective norms -> Purchase Intention	1.171

Table 6 VIF

The VIF value is less than 5, indicating low multicollinearity, which proves that the model estimates are relatively stable and will not be distorted by collinear predictors.

R^2

	R-square	R-square adjusted
Purchase Intention	0.231	0.214

Table 7 R^2

R^2 of purchase intention is smaller than 0.25, which means the predictor variables have little or no explanatory power. The R^2 value is 0.231, indicating that the model can only explain a small portion of the variation in purchase intention. This suggests that other factors not included in the model may play an important role in influencing purchase intention, and therefore need to be further explored and more variables added. At the same time, this result may also be due to the small sample size.

Q^2

	SSO	SSE	Q^2 (=1-SSE/SSO)
Attitude	570.000	347.981	0.390
Government policy	570.000	369.825	0.351
Perceived behavioral control	760.000	518.312	0.318

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Purchase Intention	760.000	394.735	0.481
Subjective norms	760.000	453.060	0.404

Table 8 Q2

The positive Q^2 value indicates that the model has predictive relevance, but since the value is between 0.25 and 0.5, it indicates that the predictive relevance is medium.

f^2

	f-square
Attitude -> Purchase Intention	0.022
Government policy -> Purchase Intention	0.009
Perceived behavioral control -> Purchase Intention	0.009
Subjective norms -> Purchase Intention	0.080

Table 9 f2

The f^2 between subjective norms and purchase intention is larger than 0.02, between attitude and purchase intention is larger than 0.02, between government policy, perceived behavioral control and purchase intention are smaller than 0.02, which means that the relationship between government policy and purchase intention, perceived behavioral control and purchase intention have small mediation. The relationship between subjective norms and purchase intention, the relationship between attitude and purchase intention have medium mediation.

Discussion

Discussion of the results

This investigation contributes to the comprehension of the variables that affect the adoption of new energy vehicles by Chinese consumers. The findings demonstrate the critical importance of government regulations and social norms. The findings indicate that consumers' decisions to adopt new energy vehicles are significantly influenced by social factors, including the attitudes and behaviours of their peers and the existence of government support policies. These factors not only stimulate initial interest in NEVs but also ensure the long-term consumer acceptance and integration of NEVs into the broader automotive market.

The research demonstrates that, although technological advancements and environmental concerns are significant, they are insufficient to encourage the widespread adoption of new energy vehicles. The significance of community-driven initiatives and campaigns that can enhance positive perceptions of NEVs is underscored by the influence of social norms, which is the process by which consumers are influenced by the behaviour and attitudes of those around them. Furthermore, government regulations, such as infrastructure development, subsidies, and incentives, are essential in reducing the obstacles to the adoption of new energy vehicles and facilitating the decision-making process for consumers to make environmentally friendly choices.

These findings underscore the necessity of promoting NEVs from a variety of perspectives for policymakers and businesses. It is imperative to conduct public education and awareness campaigns that are consistent with cultural and social values, in addition to continuing to invest in technology and infrastructure. In order to address the rapidly evolving market environment, policymakers must ensure that regulations are dynamic and capable of adapting in a timely manner to new challenges and opportunities.

Continuous research is essential to guarantee the long-term success of new energy vehicles in China. This will enable stakeholders to remain a step ahead of market trends and consumer preferences, and to adjust strategies and policies as necessary. China has the potential to be a leader in the development of a more

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sustainable and environmentally friendly automotive industry by addressing the gaps identified in this study and applying the knowledge acquired.

Results of the hypotheses

The f^2 value indicates that subjective norms have the greatest impact on purchase intention, while attitudes, government policies, and perceived behavioral control have a weaker impact. This is consistent with the results of the path coefficient study and highlights the role of social influence in the decision to purchase new energy vehicles. At the same time, all path coefficients are positive means that all four factors have positive affect on purchase intention, subjective norms have the biggest path coefficients. Therefore, the summary of results of the hypotheses would be:

Hypotheses	Results
Hypothesis 1: There is a positive relationship between attitude and purchase intention on NEV in China.	Supported (medium)
Hypothesis 2: There is a positive relationship between subjective norms and purchase intention on NEV in China.	Supported (medium)
Hypothesis 3: There is a positive relationship between perceived behavior control and purchase intention on NEV in China.	Supported (weak)
Hypothesis 4: There is a positive relationship between government policy and purchase intention on NEV in China.	Supported(weak)

Table 10 Results of the hypotheses

Conclusion

Contribution

This research significantly contributes to understanding Chinese consumers' purchase intentions for new energy vehicles (NEVs), particularly in the Urumqi region. The study provides valuable insights into the factors influencing NEV adoption, with a special focus on subjective norms and social influence, despite limitations such as sample size and regional specificity. Notably, subjective norms emerged as the most significant predictor of NEV purchase intentions, highlighting the importance of social and cultural factors in this emerging market. Subjective norms refer to the social pressures individuals face when deciding whether to engage in certain behaviors, such as purchasing NEVs. In Urumqi, a region with unique cultural and social dynamics, this emphasis on subjective norms is especially relevant. The study sheds light on how local social and cultural factors impact consumer behavior, offering insights not fully captured by studies in more economically developed or culturally homogeneous regions of China. This regional focus underscores the need for localized strategies to promote NEVs across China.

The findings broaden the current body of research by emphasizing social influences as critical determinants of NEV adoption among Chinese consumers. Previous studies have mainly focused on economic factors, such as price and incentives, or technical aspects like vehicle performance and environmental benefits. However, this research shifts attention to the social environment, arguing that the attitudes and behaviors of family members, peers, and broader social networks significantly influence purchasing decisions.

This study also makes a valuable contribution by focusing on a specific demographic: young, highly educated individuals. This group is likely to be early adopters of NEVs due to their environmental awareness, technological expertise, and disposable income. The findings suggest that this demographic is particularly susceptible to social influence, given their active engagement in peer networks, social media, and other information exchange platforms. These insights provide marketers and policymakers with valuable guidance on how to tailor their strategies to appeal to this influential group, whose impact on market trends is expected to grow as China's middle class expands and education levels rise.

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Overall, this study enhances the literature on NEV adoption in China by focusing on the importance of subjective norms and the role of educated young consumers. It lays the groundwork for effective NEV promotion strategies in a rapidly developing market and provides practical insights for policymakers and marketers. The focus on Urumqi adds a valuable regional perspective, emphasizing the need to consider local social and cultural factors when formulating NEV promotion strategies. Understanding the social factors influencing consumer behavior is essential to facilitate widespread NEV market adoption in China's evolving automotive sector.

Limitations

While this study provides valuable insights into the factors influencing the purchase intention of new energy vehicles (NEVs) in China, several limitations affect its generalizability and validity. The most significant limitation is the time constraint, which led to the exclusive use of an online questionnaire for data collection. Although efficient, online surveys may introduce biases by over-representing younger, more educated, and tech-savvy individuals, while under-representing older or rural populations with limited internet access. Time constraints also limited the sample size, reducing the study's statistical power and ability to perform more complex analyses that could offer deeper insights into consumer behavior.

Another limitation lies in the study's simplified research model, which focuses on a limited number of variables—subjective norms, perceived behavioral control, and purchase intention—without fully exploring the complex interplay of factors that influence consumer decisions. This simplification overlooks potential interactions, such as the influence of personal values, economic incentives, and environmental concerns. Moreover, relying on self-reported data could introduce response biases, like social desirability bias, where respondents may overstate their willingness to adopt environmentally friendly technologies.

Finally, the study's focus on a single region, Urumqi, limits the generalizability of its findings to other regions of China with different economic conditions, cultural norms, and government policies. Future research should expand the geographic scope and address these limitations by including more diverse samples, a broader range of variables, and more comprehensive data collection methods to better understand consumer behavior in China's evolving NEV market.

Future Studies

Future research should expand this study by including a more representative sample that covers a wider range of age groups, income levels, and educational backgrounds. While this study focuses on young, educated adults, a broader demographic analysis could offer deeper insights into the diverse factors influencing NEV purchase intentions across China. Examining variables such as age, income, and education could help identify differences in priorities, such as cost or technology adoption, which could inform targeted marketing and policy strategies.

Additionally, the low R^2 values observed suggest that other unexplored factors may significantly influence purchase intentions. Future studies should explore environmental, economic, and psychological factors, such as climate conditions, government subsidies, brand loyalty, risk perception, and trust in government policies, to provide a more comprehensive view of consumer behavior.

Incorporating moderating or mediating variables, such as geographic location or technological optimism, could help clarify the conditions under which specific factors influence purchase intentions. Longitudinal studies could further enhance understanding by capturing changes in consumer attitudes over time, reflecting developments in infrastructure, technology, or policies.

Cross-cultural comparisons could provide a global perspective on NEV adoption, revealing both universal drivers and culturally specific influences. Finally, incorporating qualitative methods like interviews or focus groups could offer richer insights into consumer motivations and barriers. This comprehensive approach will help develop more effective strategies to promote sustainable transport.

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