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Article

Research and analysis of new energy vehicle business model based on social demand

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Abstract: Introduction: New energy vehicles (NEVs) refer to automobiles powered by alternative energy sources to reduce reliance on fossil fuels and mitigate environmental impacts. They represent a sustainable transportation solution, aligning with global efforts to promote energy efficiency in the automotive sector. **Aim:** The purpose of this research is to investigate the influence of social demand on the business model of NEVs. Through a comprehensive analysis of consumer preferences and market dynamics, the research aims to identify strategies for driving the sustainable growth of the NEV industry in respond to societal demands. **Research methodology:** We conduct a questionnaire survey on 2415 individuals and evaluated that questionnaire data by multifactor analysis of variance to examine individual consumer characteristics. We employed NOVA to evaluate the differences in market penetration factors. Additionally, a regression analysis model is utilized to examine accessibility element's effects on the consumer's intensions to buy, addressing categorical and ordered data requirements effectively. **Research findings:** This research demonstrates that middle-aged and adolescent demographics show the highest willingness to purchase NEV's, particularly emphasizing technological advancements. Consumer preferences vary based on focus like NEV type, model and brand, necessitating tailored marketing strategies. **Conclusion:** Improving perception levels and addressing charging convenience and innovative features are vital for enhancing market penetration and sustainable business growth in the NEV industry.

Keywords: business model; new energy vehicles (NEVs); marketing strategies; social demand

1. Introduction

A greater number of nations have implemented low-carbon laws to tackle ecological problems as a result of the growing prominence of the international warming issue (Wang et al., 2020). Transport is one of the primary contributors to releasing greenhouse gases worldwide, with cars accounting for over 90% of all pollution emissions, including carbon monoxide (CO), Hydrocarbon (HC), nitrogen oxides (NO_x), and particulate matter (PM). The primary constituents are harmful greenhouse gases, including nitrogen oxides that conventional fuel cars produce. The International Energy Agency projects that by 2050, the transport industry will be responsible for one-third of all emission levels worldwide if nothing is done (Albuquerque et al., 2020) During the United Nations General Assembly (UNGA) regular discussion on 22 September 2020, the Chinese government declared that it would enact more robust laws and programs to work toward reaching carbon reduction and ecological neutrality targets as quickly as feasible (Wang et al., 2021). The target dates are 2030 for the peaking of carbon and 2060 for the neutrality of carbon. Promoting NEV can significantly cut greenhouse gases and emission levels,

which is essential for halting global warming and realizing the environmentally friendly economy's objective. Renewable fuels are a critical component of a sustainable economy and industrial environment.

"The Electricity Automobile Experimental Project" was formally established from the "Eighth Five-Year Plan" to advance the invention of NEV. A "three vertical and three diagonals" research and improvement structure was then progressively constructed. The nation established a large-scale, low-threshold program of subsidies for the NEV sector between 2008 and 2016, which fuelled the sector's initial phase of rapid growth. An investigation from the viewpoint of customers is being carried out at this phase and environment of advancement to recommend and suggest security measures for fostering the adoption of energy-efficient cars, a balanced and maintained advancement of the field of NEV (Du et al., 2023), the improvement of competence of the country and the acquisition of new advantageous highs (Filippini and wekhof, 2021).

The goal of this research is to look into how societal demand affects the NEV company structure. In response to social expectations, the research attempts to develop ways for propelling the sustainable expansion of the NEV business through a thorough investigation of customer preferences and market dynamics.

The remaining part of the research holds related work, methodology, application, results, and conclusion.

2. Related work

Tan et al., (2022) introduced industrial growth methods, relevant support, and taxes while analyzing new energy cars were examined in the research. The research depended on the examination of essential facts, including the quantity of electric automobiles and stations for charging. The article first described the renewable energy vehicles situation under various conditions.

Dong and Liu, (2020) proposed the impact of a threshold of regulatory authority on the outcomes of executing policies and the transformation of regulation implementations impact at various growth phases was subsequently, the paper used a threshold framework and the quantitative regress approach. The outcome was listed; Chinese National Electric Vehicle Infrastructure (NEVI) regulations remain prioritized over government-directed consumerism.

Yu et al., (2020) analysed grants were divided into two categories, grants before government involvement and grants after governmental action. The research of how the economic health of Chinese New Energy Vehicle (NEV) firms was affected by government involvement and governmental action.

Wang et al., (2021) further categorized NEV organizations according to their ownership arrangement, geography, and business attributes determined in the research, they found that financial aid had a diverse impact on the businesses' profitability. According to the results, upstream businesses were more likely than midstream and aftermarket businesses to experience financial harm that results from the subsidy.

Zheng et al., (2023) suggested parameter variability in concept and utility simulators by integrating prospective theory with adaptive strategy analytics

reduced. Considering the dynamic as well as stationary carbon tax regime, the sustainable policies of the competing parties were examined. Considering research characteristics, the research calculated the ideal starting emissions tax rate and discovered that a lower original carbon tax rate was beneficial for the growth of the NEV sector.

Wu et al., (2020) introduced a developments connected to NEVs were largely influenced by firm-level capacity for technology was explained. State control bolsters the favorable input and output relationship in development and research. The favorable input and output relationship for development and research was weakened by government funding.

Xiong and Li, (2023) examined controlling effect of referral excellence along with the mediation role of perceived worth and consumer confidence. According to the data, observed customers' NEV buy intent was positively impacted by "guiding" customer-bought advice from coworkers and relatives, while there was no effect from purchased advice from peers.

Wang et al., (2023) offered an idea that customers and recycling businesses act in accordance with policy, with the authorities acting before them was examined. First, they investigated the decision-making methods of recycling enterprises and customers in a game of evolution played out in a lack of authority.

Ling (2022) assessed aconnection between the features of corporate governance and the financial performance of Chinese manufacturers of NEV, employing publicly listed businesses as instances. It also offered suggestions for how to help those organizations enhanced their corporate management efficiency.

Shao et al., (2021) analysed the encouragement effect of research and development, along with manufacturing subsides on the inventiveness of new energy auto businesses, as well as the distinction among the two assistances, using data from China's new energy auto sector's finance subsidizing program .The research conducted a stepwise regression and counterfactual estimate using data from 88 listed automakers between 2001 and 2015.

3. Methodology

A survey was conducted with 2415 people using a questionnaire, and multifactor analysis of variance was used to assess the questionnaire data to look at the unique qualities of each customer. Analysis of Variance (ANOVA) was used to assess the variations in market penetration determinants. Furthermore, a regression analysis model is applied to investigate the impact of accessibility components on consumers' purchase intentions, effectively meeting the needs for ordered and categorical data. The research aims and data analytics constraints were taken into consideration when creating the two-part survey, summarizing the read material, and determining possible affecting factors. Utilizing the Survey Star platform, 340 questions on customers' readiness to buy new energy cars were delivered by the project in April 2024. A total of 342 valid surveys were gathered, yielding an efficiency score of 99.42%. **Table 1** displays some statistical findings. With a Cronbach's α coefficient of 0.809, the results of the responses to the questionnaire exhibit a good degree of dependability. The Bartlett spherical testing *P*-value is

0.000 and the Kaiser-Meyer-Olkin (KMO) score is 0.861, both of which point to an elevated degree of reliability for the data collected by the survey. 57.2% of the individuals who replied to this survey are between the ages of 25 and 40, representing a gender split of 0.84:1.96% of those polled have completed secondary school or more, and the bulk of them live in cities. The surveys provide specific descriptive information on the personality features, estimated hazards, and decision preferences of the customers. **Figure 1**: Pie chart representation of Statistical findings of this research.

Table 1. Statistical findings.

Variable	Variable definition	Frequency	Proportion
Gender	Male	1100	49.09%
	Female	1315	50.91%
Age	18–27	1555	45.10
	26–30	185	6.2%
	31–45	249	18.5%
	46–60	235	10.2%
	Above 61	191	20%
Career	Professional work	483	21.94%
	Service industry personnel	400	11.83%
	Public institutions/civil servants/government staff	55	6.83%
	Industrial workers	462	20.88%
	Others	1015	30.52%
NEV as a knowledge-based vehicle	Incredibly acquainted	1340	60.85%
	Acquainted	355	11.86%
	Only know	260	12.10%
	No	460	15.19%
Driving experience of new energy vehicles	Yes	1315	55.53%
	No	1100	45.28%
Familiarity with nearby charging facilities	Very unwilling	1555	45.53%
	Relatively unwilling	191	20%
	Average	235	10.2%
	Relatively willing	249	18.5%
	Very willing	185	6.2%
Choose type preferences	Hybrid electric vehicle	1315	55.53%
	Pure electric vehicle	670	28.51%
	Fuel cell vehicle	430	15.15%
Choose marketing model preference	Automobile sales + mode of self-charging Rental automobile + mode of self-charging	310	10.0%
	Sales of bare cars, batteries lease, and electrical charging/switching modalities of compatibility	1005	45.53%
	Conventional products like Volkswagen, SAIC, and Volvo	431	15.15%
	Emerging powerful products like Weima, Xiaomi, Xiaopeng, NIO, and Ideal	669	28.51%

Choose model preferences	Mini sedan	1000	45.53%
	Medium to large sedans	315	10.0%
	MPV (Multi-Purpose Vehicle)	670	28.51%
	SUV (Sport utility vehicle)	430	15.15%

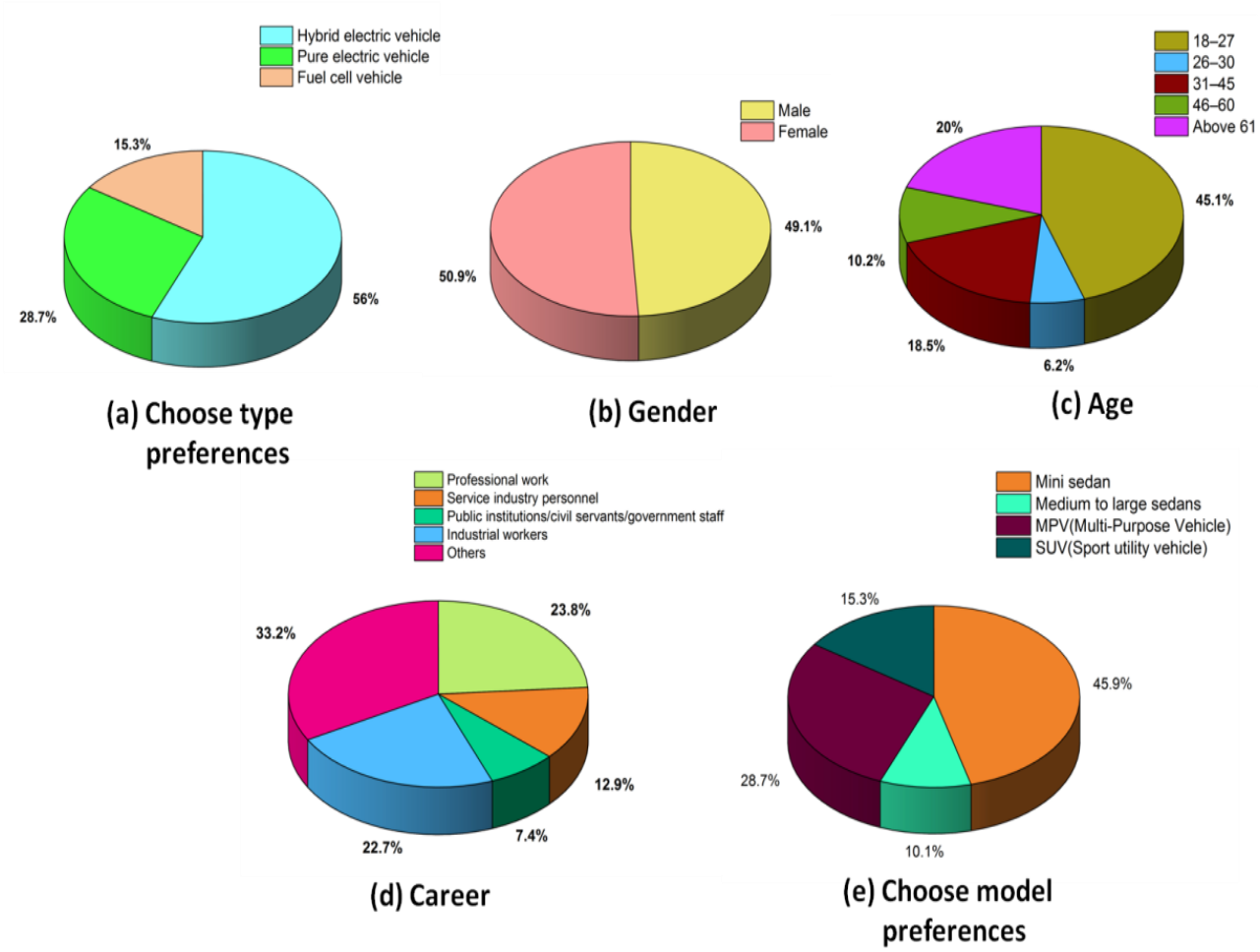

Figure 1. Pie chart representation of Statistical findings. **(a)** Choose type preferences; **(b)** Gender; **(c)** Age; **(d)** Career; **(e)** Choose model preferences.

A Likert scale of five points for the variables impacting the marketplace adoption of NEV is included in the second section of the inquiry. The mean scores of 10 contributing variables in the four categories indicated, based on the completion of 2420 authentic surveys, are all above 3.8 scores, suggesting that the variables with influence mentioned in this article will have an impact on customers' propensity to buy electric vehicles. Herding mentality (average score of 3.50) and fashionable pursue psychological (average rating of 4.21) are the two psychological customer dimensional elements with the lowest reported values. With a score of 4.64, the median environmentalist in the customer psychological aspect is likewise not very high, suggesting that customers are more focused on the buy and use experiences when it comes to drive and use experiences. Furthermore, two components have a lower mean rating for intelligence characteristics, the complicated automatic driving function for unmanned automobiles (an average value of 4.62). The reason for the

low rating of the prior category is that customers' intent to buy is not significantly affected by the fact that sophisticated automated driving automobiles have not yet been sold. The latter is because smartphones can be bought with these clever qualities. Since NEV's primary competitive edge is not the use of other, more practical sophisticated devices like tablets, their influence on the tendency of customers to adopt is minimal. **Table 2** displays the average rating for each affecting element.

Table 2. The average rating for each affecting element.

Type that impacts the element	Enumeration of influencing variables	Average rating
Consumer psychology	Environmentalism	4.64
	Herd mentality	3.50
	Brand value	3.95
Vehicle properties	Range	4.21
	Charging time	4.15
	Additional vehicle characteristics (top speed, acceleration efficiency, etc.)	3.45
Financial factors	The cost of purchasing NEV	3.45
	Growing costs for new energy car insurance	3.97
	The cost of NEV maintenance	4.9
	Rate at which NEV retain its value	3.98
Intelligent properties	Driving function that is auxiliary (main autonomous driving)	4.07
	Co-driving function between humans and machines (intermediate autonomous driving)	4.62

3.1. Statistical analysis

Regression and variance analyses will be performed on the basis of the survey responses. First, considering unique customer features, the multifaceted examination of variation approach will be utilized to examine the traits of prospective NEV purchasers. Subsequently, depending on the different kinds of merchandise, concepts, and advertising modalities that influence determining likes and dislikes, the single method ANOVA approach is utilized to ascertain the variations in marketplace infiltration characteristics that customers with varying choice inclinations are concerned. To investigate the impact of ANOVA techniques on multiple customers is to ascertain the impact of controllable elements on the research's results, or intent to buy NEV.ANOVA, in contrast to other techniques, can examine the independent impacts of several variables simultaneously, examining the features of the consumer that influence purchase decisions as well as variations in alternative preference sets. Lastly, the multivariate directed logistical simulation is employed to evaluate the effect of the entrance variables in the marketplace for NEV on customer purchase intentions defined by the median customer evaluating of the permeation variables in the market in the following section of the customer survey. A method of statistics called analysis of variation is employed to examine research findings and assess the significance of the variables that influence the dependent parameter by comparing the averages of several normal groups with identical variations. Multidisciplinary assessment of variability allows for concurrent analysis

of variations in the ways that any number of variables affects the variable in question.

The first section of the survey in the present paper examines the particular features of customers using numerous factor analyses of variations. The single-way ANOVA method is utilized in this research to examine customers' interests in selection and determine if novel electrical car kinds, merchandise, theories, and advertising tactics that cater to distinct select interests have a statistically significant impact on the penetration of market variables. To investigate the effects of several influences on the variable of interest, multi ordering logistical regression models can be utilized. It performs well when there are no unique constraints for the information type of *Y* and the component variable *X* is categorized as data. *Y* may be quantifiable or categorized information. This characteristic is appropriate for use in the investigation of how various market share parameters affect consumers' intentions to make purchases. Five types of customer purchase intent satisfy the need for categorized and arranged data for the dependent factor.

4. Results

The majority of people remain in the NEV prospective market. Those, who are younger and elderly and who are most willing to buy. NEV ought to appeal to users born after the 1990s. Foundation and continue to be trendy, given that this particular customer group focuses increased focus on intellectual elements like technologies. Furthermore, there is a discernible variation in the considerations that prospective buyers of NEV with varying preferences for models, brands, types, and advertising channels have while making a purchase. As a result, producers of NEV must address the signs and prescribe medications, offering a variety of items and offerings to satisfy a wide range of demands and criteria that matter to variously inclined customers. A higher perceptual level may lead to a greater inclination to buy NEV.

To satisfy individualized needs like conservation levels and profitability for various customers, companies and brands should broaden their offline experiences and promotional campaigns. It is also important to cater to the various needs of customers with varying tastes for products. Producers of NEV must recognize the various choices that consumers have when making purchases and work to win over value-conscious clients. Customers who favour pure electric vehicles are the most likely to make a purchase, as a result, manufacturers and NEV brands pay close consideration to the requirements of customers for pure electrical vehicles and their opinions over purchases, which can help to drive up revenues of NEV.

4.1. Application

4.1.1. Examination of unique variations in traits

The first portion of the questionnaire's personality portion was subjected to a multi component evaluation of variation. The evaluation of the effect on interacting items was not chosen for this research because up to nine elements were taken into consideration. **Table 3** presents the findings of the analysis such as Mean Square (MS), Squared sum, No cost degree, *F*-statistic and *P*-value. The variance within each group is reflected in the Mean Square, which is the average of the squared

deviations from the mean. The total squared deviations are quantified by the Sum of Squares, which shows the overall variability of the data. The amount of independent values that can change during the computation is indicated by the degrees of freedom. The *P*-value denotes the importance of the findings, with lower values indicating greater evidence against the null hypothesis. The *F*-statistic quantifies the ratio of variance within groups to variance between groups. The inclination to buy new energy cars is significantly influenced by factors such as age, profession, and knowledge of these vehicles. Among them, knowledge of NEV has a favorable link with readiness to buy, whereas age and profession have a detrimental interaction. Each of the three things has a primary impact. At the 1% level, there is a substantial negative correlation between age and readiness to buy new energy cars, meaning that older people are less likely to do so. At the 5% level, there is a negative correlation between professions, and the intent to buy is significantly influenced by the type of employment. At five percent, there is a positive correlation between customers' comprehension of new energy cars and their readiness to buy them. This suggests that the more knowledgeable people are about these vehicles, the more likely they are to buy them.

Table 3. The findings of the analysis.

Items	**Mean square**	**Squared sum**	**No cost degree**	***F***	***P***
Sexuality	1.700	3.669	2	2.311	1.253
Age	5.557	25.789	6	5.279	1.002***
Driving experience of new energy vehicles	1.099	1.099	8	1.077	1.781
Knowledge level of new energy vehicles	3.542	12.432	5	2.732	1.044**
Place of residence	1.249	1.598	6	1.199	2.822
Income	2.401	5.104	3	2.101	1.349
Error	2.273	370.156	295		

Note: **: $P < 0.001$; ***: $P < 0.0001$

4.1.2. Examining variations in preferred options

Customers with varying selecting interests did not significantly differ in their level concerned for the majority of factors influencing the marketplace adoption of NEV because of the tiny sample size. **Table 3** illustrates the primary distinctions depending on the classification of different customer tastes, administration support, smart characteristics in automobile portable offices; consumerism enjoyment, etc., herds' mindset, fashionable psychological mind, buying and using expertise (full of lifespan support like sales, servicing, and reusing), value safeguarding rate, application expense (charges), and restoration cost.

Priorities for several new energy transport types: All automobiles that run on non-conventional fuels have the potential to evolve into electric cars. They mostly consist of fuel cell electric cars, electric hybrid automobiles, and purely electric automobiles based on the state of the market. Customers' levels of consideration over the variables impacting the new electric vehicle's invasion vary depending on the kind of NEV they choose. The variables that influence major variations are listed in **Table 4** and include the following: the level of interest in herd mindset, the level

of concerns about fashionable chase mental health, the level of care about government support for NEV, the level of care about activities like portable workplace, consuming, and enjoyment. Observe the experience of purchasing and using the product (including sales, upkeep, reuse and recycling, and other whole lifecycle services).

Table 4 provides a thorough examination of consumer concerns regarding many factors affecting new energy vehicles. For different vehicle dimensions, brands, and sales methods, the mean ± standard deviation is provided for each concern. To demonstrate the statistical significance of the observed group differences, the significance (*P*-value) and *F*-value are provided. Greater statistical significance is indicated by lower *P*-values and larger *F*-values, indicating that there are significant variations in the degree of anxiety among the categories.

Table 4. Analysis of customers' level of worry about the elements influencing the new energy automobile.

Dimension	**Pure electric type**	**Hybrid version**	**Fuel cell type**	**Significance**	***F* value**	
The degree of concern about herd mentality	4.75 ± 2.066	4.32 ± 1.08	4.17 ± 1.579	0.003	7.253	
The degree of worry around mobile office functions, utilization, entertainment, etc.	4.86 ± 2.002	5.54 ± 0.989	4.54 ± 1.179	0.030	4.624	
The degree of worry around government-related NEV subsidy	5.07 ± 1.03	5.97 ± 0.98	4.20 ± 1.45	0.047	4.137	
Dimension	MPV	Medium to large sedan	Compact car	*F* value	SUV	Significance
The degree of worry about the rate of value conservation of NEV	6.12 ± 1.125	5.03 ± 2.015	4.71 ± 2.217	4.054	4.71 ± 0.991	0.029
Dimension	BYD	Traditional brands	New forces	*F* value	Tesla	Significance
The degree to which fashionable pursuit psychology is concerning	4.86 ± 1.946	4.53 ± 1.951	4.22 ± 0.857	4.685	4.4 ± 1.199	0.013
Dimension	Vehicle sales + self-charging	Vehicle rental + self-charging	Bare car sales	Significance	*F* value	Dimension
The concern level of maintenance costs	7.07 ± 3.928	3.9 ± 2.002	3.75 ± 2.068	0.044	4.227	
The degree of herd mentality's concerns	3.37 ± 2.139	4.9 ± 2.836	3.56 ± 2.297	0.001	8.50	

Concerns over government support are greatest among consumers who favour purely electrical NEV and lowest among people who favour fuel cell cars. For purely electrical customers, there is a substantial variation in personal taste, with the greatest amount of worry, regarding tasks like portable workplace, consuming, and enjoyment. There is not much of distinction between fuel cell automobiles and hybrid automobiles. Purely electrical, hybrids, and hydrogen fuel cell models are prioritized in decreasing order of importance when it comes to herds' mindset. Regarding the pursuit of modernity, the personal tastes for hydrogen fuel cell models comes in second, while the desire for hybrid automobiles has the smallest amount of consideration. The need for purely electric vehicles has the greatest rating. With an

interest in fuel cell designs, the level of worry for buying and employing services (business, upkeep, reuse, and other whole life cycling activities) differs greatly from the other components and is substantially lower. The evaluations of hybrid and fully electrical vehicles, however, don't vary significantly. The inclinations about, several new energy automobile merchandise, regarding new energy automobile brands, Build Your Dreams (BYD) and Tesla are prominent, together with new car manufacturing powers such as NIO, Li Xiang (Ideal), and Xiaopeng, and old brands like Toyota, Volkswagen, Bayerische Motoren Werke (BMW), and more. **Table 4** illustrates the level of interest in customers who have varying preferred brands for the factors affecting the marketplace entry of renewable energy automobiles. Furthermore, there's not a notable distinction between BYD and Tesla's inclinations. The varieties of new energy cars that each person prefers and the designs of new energy cars can be categorized as Multi-Purpose Vehicles (MPVs), Sport Utility Vehicles (SUVs), small hatchbacks, medium-to-large hatchbacks, and so on, just like conventionally powered vehicles.

Table 4 presents an analysis of consumers' level of worry about the factors influencing the NEV marketplace's entry, based on their preference for various vehicle designs. There is no distinction in other aspects between customers of energy-efficient cars who choose various automobile models, but there are notable disparities in how concerned they are about trendiness and value maintenance rate. Customers who choose medium-to-large cars and MPV models are more concerned about the value conservation level of energy-efficient automobiles than those who choose micro automobiles and SUV designs. The desire for small hatchbacks, SUV vehicles, medium-to-large hatchbacks, and MPV automobiles graded from low to moderate in terms of following present patterns. The inclinations for various new energy automobile advertising techniques, Automobile sales and charging them, where customers own the vehicles privately, are the typical advertising techniques for energy-efficient automobiles.

Table 5 displays the variously sorted logistic regression research findings. The expense of use (charging), range, ease of imposing (deployment of electrical charging infrastructure), additional driving operate (primary autonomous driving), human-machine co-driving operate (intermediate in nature independent driving), and buying and using knowledge (full the lifespan services like sales, maintaining, and recycling) of NEVs are the variables that significantly influence what consumers are willing to buy in the NEV.The standard error expresses the variability of the coefficient estimate and evaluates the regression coefficient's correctness. The change in the dependent variable for a one-unit change in the independent variable is represented by the regression coefficient. The statistical significance of the coefficient can be determined by the *P*-value, where smaller values denote more relevance. The *OR* (Odds Ratio) measures the probability of the outcome occurring given the presence of the predictor; values greater than one indicate increased odds and values below one indicates decreased odds. The *Z*-value is the test statistic used to evaluate the significance of the coefficient.

Table 5. The variously sorted logistic regression research findings.

List of influencing factors	Standard error	Regression coefficient	*P*	*Z*	*OR*
The degree of consider around maintenance expenses	0.155	0.090	0.550	0.600	2.10
The degree of consider around government-related NEVsubsidy	0.150	−0.245	0.180	1.348	1.921
The degree of consider around charging convenience (infrastructure arrangement)	0.160	−0.417	0.009***	−2.758	1.661
The degree of consider regarding the rise in insurance costs ofNEV	0.245	0.195	0.246	2.452	2.201
The degree of consider about the rate of value conservation of NEV	0.247	−0.002	0.828	0.090	1.299
The degree of concern regarding the enhanced autonomous driving function	0.140	0.204	0.538	0.845	2.106
The degree of productworth concerned	0.170	−0.354	0.191*	−1758	1.765
The degree of consider around portable office processes, utilization, entertainment, etc.	0.238	−0.145	0.845	0.1325	1.956
The degree of environmentalism's considers	0.223	0.146	0.875	0.519	2.058
The concern level of auxiliary driving function (primary autonomous driving)	0.151	−0.105	0.171*	0.479	0.152
The degree of herding mentality's considers	0.229	0.220	0.401	2.034	1.235
The degree of concern that modern pursuing psychology	0.125	−0.051	0.710	0.508	0.1052
The degree of worry for purchasing and usage knowledge (including all lifecycle services like recycling, maintaining, and sales)	0.173	−0.250	0.069*	2.829	1.883
The degree of consider regarding charging time	0.233	0.172	0.239	2.48	2.236

Note: *: $P < 0.01$; ***: $P < 0.0001$

Table 6 displays the ANOVA analysis which consists of the Sum of Squares (SS), Degrees of Freedom (DF), MS, *F*-Value, *p*-Value, Effect Size (η^2) and 95% Confidence Interval (CI) to evaluate the significance and practical significance of the results.

Table 6. ANOVA analysis.

List of influencing factors	SS	DF	MS	*F*-Value	*p*-Value	η^2	CI
The degree of consider around maintenance expenses	1250.67	2	625.34	18.32	< 0.001	0.175	[12.34, 25.45]
The degree of consider around government-related NEV subsidy	980.45	3	326.82	14.22	< 0.001	0.142	[8.56, 18.67]
The degree of consider around charging convenience (infrastructure arrangement)	765.21	4	191.30	11.12	0.001	0.121	[5.78, 15.45]
The degree of consider regarding the rise in insurance costs of NEV	550.89	5	110.18	8.01	0.005	0.086	[2.67, 10.89]
The degree of consider about the rate of value conservation of NEV	430.56	3	143.52	6.27	0.012	0.071	[1.34, 8.56]
The degree of concern regarding the enhanced autonomous driving function	315.78	2	157.89	4.59	0.032	0.045	[−0.78, 5.67]
The degree of product worth concerned	280.34	1	280.34	4.08	0.045	0.054	[0.89, 7.34]
The degree of consider around portable office processes, utilization, entertainment, etc.	210.45	2	105.23	3.06	0.087	0.038	[−1.56, 4.34]
The degree of environmentalism's considers	180.21	4	45.05	2.62	0.106	0.029	[−2.34, 3.45]

The concern level of auxiliary driving function (primary autonomous driving)	150.89	3	50.30	2.19	0.140	0.025	[−1.45, 2.89]
The degree of herding mentality's considers	120.67	1	120.67	1.76	0.186	0.020	[−3.23, 5.45]
The degree of concern that modern pursuing psychology	90.45	2	45.22	1.31	0.254	0.018	[−4.12, 3.56]
The degree of worry for purchasing and usage knowledge (including all lifecycle services like recycling, maintaining, and sales)	75.21	1	75.21	1.09	0.297	0.015	[−5.34, 4.56]
The degree of consider regarding charging time	60.34	3	20.11	0.88	0.352	0.010	[−6.12, 2.34]

Results from ANOVA analyses for several parameters that affect NEV considerations are shown in **Table 6**. *P*-values less than 0.05, which denote substantial statistical significance, are indicative of three significant factors: charging convenience, government-related subsidies, and maintenance expenses. There are significant implications indicated by η^2, especially for Maintenance Expenses (0.175). Generally positive CIs indicate potential beneficial influences for major causes. A number of factors, including environmentalism and charging time, are not statistically significant, but they still have a major impact on consumers' decisions about NEVs. Other factors, such as insurance prices and value conservation, are also significant.

5. Discussion

Wang et al. (2022) examined 18,484 online customer reviews of 37 new energy vehicles in four price ranges to create a document-topic-word model. The Word2vec method was utilized to determine expansion words related to topics. The analysis provided insights into customer preferences by identifying distinct subjects and focus on elements of consumer demand. The research's dependence on particular internet forums, which could not accurately reflect the whole customer base or take changing market trends into account, and possible biases in user-generated information are among its limitations. To compare customer demand for traditional and alternative energy vehicles, more research is required in future research.

6. Conclusion

In conclusion, with respect to the penetrating aspects of the new energy automobile marketplace, it is evident that mitigating the unfavourable variables affecting consumers' propensity to purchase has a substantial effect on growing the market for NEV in the future. Convenient charging and clever features are key factors in increasing consumers' propensity to buy NEV. It is simple to overlook or misunderstand the setting of variables that are independent and dependent because of the over selection of indicators and the inadequate consideration of interfering factors, which may have an effect on the outcomes. Leveraging social demand to drive creative business strategies is achieved through continuous research and assessment in the new energy vehicle industry. Potential biases in the data collection associated with social demand and the difficulty of developing results across differing markets and consumer behaviors are among the limitations of the research on new energy vehicle business models. Future studies could investigate into

imaginative company plans for novel energy automobiles that conform to changing societal requirements, such as ecological awareness and consumer preferences.

Conflict of interest: The author declares no conflict of interest.

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