



Exploring the Influence of User-Perceived Value on NEV-Enterprises Using an Empirical Computer Model

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Abstract. This paper investigates the influence of user-perceived value on New Energy Vehicle (NEV) enterprises through the application of an empirical computer model. Utilizing a comprehensive data set from NEV consumers, we model the relationship between perceived value components and enterprise performance metrics. Our findings highlight critical factors that NEV companies can leverage to enhance user satisfaction and market competitiveness.

Keywords: new-energy vehicle; user-perceived value; influencing factor.

1 Introduction

The New Energy Vehicle (NEV) industry is undergoing a period of rapid transformation, fueled by significant technological advancements and changing consumer preferences. As the market for NEVs expands, it becomes increasingly important for enterprises within this sector to understand the factors that influence user-perceived value. Perceived value, which encompasses the overall assessment of a product's worth based on the consumer's evaluation of its benefits and costs, plays a pivotal role in shaping purchasing decisions, brand loyalty, and overall customer satisfaction.

For NEV enterprises, identifying and quantifying the determinants of perceived value is not just a matter of academic interest but a strategic imperative. By gaining insights into what drives consumer perceptions—whether it be technological innovation, environmental impact, cost-effectiveness, or user experience—companies can tailor their offerings to better meet customer expectations, thereby enhancing their market position.

This study sets out to empirically investigate the impact of perceived value on the performance and sustainability of NEV enterprises. Utilizing a sophisticated computer model, the research aims to quantify the relationship between perceived value and key business outcomes such as customer acquisition, retention, and profitability. The model will incorporate various factors that influence perceived value, including product quality, brand reputation, price sensitivity, and the overall user experience.

Through this empirical approach, the study seeks to provide actionable insights for NEV companies, enabling them to optimize their strategies in alignment with consumer

values. The findings are expected to offer a deeper understanding of how perceived value drives business success in the NEV industry, helping enterprises to sustain growth, enhance competitive advantage, and thrive in an increasingly competitive market.

2 Literature Review

2.1 Dimensions of User-Perceived Value

User-perceived value is a multifaceted concept that plays a critical role in shaping consumer behavior, especially in the rapidly evolving New Energy Vehicle (NEV) industry. This value can be dissected into several key dimensions, each contributing uniquely to the overall perception of a product. These dimensions include functional, emotional, and social values, all of which collectively determine how consumers evaluate and interact with NEVs.

Functional value refers to the practical and utilitarian benefits that a product offers to its users. In the context of NEVs, this includes attributes such as performance, reliability, and efficiency. These factors are essential in determining the tangible benefits that consumers can expect from the product, such as the vehicle's driving range, durability, and cost-effectiveness [1,2]. Research has consistently shown that functional value significantly impacts consumer satisfaction and purchase intentions across various industries, including the automotive sector [3,4]. Consumers tend to prioritize these practical aspects when making purchasing decisions, as they directly relate to the product's ability to meet their needs and expectations.

Emotional value relates to the feelings and emotional responses that a product evokes in its users. For NEVs, this could involve the excitement of driving a technologically advanced vehicle, the pleasure derived from contributing to environmental sustainability, or the sense of pride in owning a cutting-edge product. Emotional value is particularly crucial for building strong customer loyalty, as it fosters a deeper connection between the consumer and the brand. Additionally, products that evoke positive emotions are more likely to encourage positive word-of-mouth, as satisfied customers share their experiences with others [5,6]. This dimension of value is vital for NEV enterprises aiming to create a memorable and emotionally resonant brand experience.

Social value pertains to the social benefits that consumers derive from owning and using a product. In the NEV context, this could include the enhanced status and social approval associated with being an early adopter of green technology or being perceived as environmentally conscious. Social value plays a significant role in influencing consumer behavior by fulfilling the innate human need for social acceptance and prestige [7,8]. Owning an NEV can be seen as a symbol of modernity and social responsibility, which can be highly appealing to consumers who are motivated by these social considerations.

By understanding these dimensions of user-perceived value—functional, emotional, and social—NEV enterprises can better tailor their products and marketing strategies to align with consumer expectations. This holistic approach to perceived value is crucial

for sustaining growth, enhancing customer satisfaction, and maintaining a competitive edge in the dynamic NEV market.

2.2 Gaps in Existing Research

Existing research often isolates individual dimensions of perceived value and lacks empirical models specific to the NEV industry. There is a need for comprehensive studies that quantify the combined impact of functional, emotional, and social values on enterprise performance.

3 Methodology

Our empirical computer model incorporates data from surveys and market reports to analyze the perceived value dimensions. The model utilizes regression analysis to identify significant predictors of NEV enterprise performance.

3.1 Data Collection

Data were collected through a structured survey targeting NEV users. The survey included questions on functional value (e.g., performance, reliability), emotional value (e.g., pleasure, excitement), and social value (e.g., status, prestige).

The survey was distributed online and gathered responses from 500 NEV users across different regions. Each respondent rated their NEV on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) for each perceived value dimension. Additional demographic information and purchasing behavior were also collected.

Survey Sections and Example Questions:

- Functional Value:
 - "My NEV performs well in various driving conditions."
 - "The reliability of my NEV meets my expectations."
- Emotional Value:
 - "Driving my NEV makes me feel excited and happy."
 - "I enjoy the innovative features of my NEV."
- Social Value:
 - "Owning an NEV enhances my social status."
 - "My friends and family view my NEV positively."

3.2 Model Development

We developed a multiple regression model to assess the impact of each perceived value dimension on key performance indicators (KPIs) such as customer satisfaction, loyalty, and market share. The model includes the following steps:

1. Data Preprocessing:

- Cleaning the survey responses to remove incomplete or inconsistent data.
- Standardizing the responses for each perceived value dimension.

2. Variable Selection:

- Independent Variables: Functional Value, Emotional Value, Social Value.
- Dependent Variables: Customer Satisfaction, Loyalty, Market Share.

3. Regression Analysis:

- Applying multiple regression analysis to determine the strength and significance of the relationship between perceived value dimensions and KPIs.
- Using statistical software (e.g., SPSS, R) to perform the analysis and validate the model.

4 Results

The regression analysis revealed that functional value and emotional value significantly influence customer satisfaction and loyalty, while social value primarily impacts market share. The following charts and tables illustrate these relationships.

4.1 Regression Analysis Results

We present the detailed regression analysis results for each perceived value dimension and their impact on the dependent variables. The coefficients, standard errors, t-values, and p-values are summarized in (Table 1).

Table 1. Regression Analysis Results

Dependent Variable	Predictor	Coefficient	Standard Error	t-Value	p-Value
Customer Satisfaction	Functional Value	0.45	0.05	9.00	<0.001
	Emotional Value	0.35	0.06	5.83	<0.001
	Social Value	0.05	0.07	0.71	0.479
Loyalty	Functional Value	0.40	0.06	6.67	<0.001
	Emotional Value	0.30	0.07	4.29	<0.001
	Social Value	0.10	0.08	1.25	0.213
Market Share	Functional Value	0.25	0.05	5.00	<0.001
	Emotional Value	0.15	0.06	2.50	0.013
	Social Value	0.20	0.07	2.86	0.004

4.2 Customer Satisfaction and Perceived Value

The analysis showed that functional value and emotional value are significant predictors of customer satisfaction. To further illustrate these relationships, we present a scatter plot with regression lines for each dimension (Figure 1).

Customer Satisfaction vs. Perceived Value:

- Functional Value: Positive correlation with customer satisfaction ($R^2 = 0.60$).
- Emotional Value: Positive correlation with customer satisfaction ($R^2 = 0.45$).
- Social Value: Weak correlation with customer satisfaction ($R^2 = 0.05$).

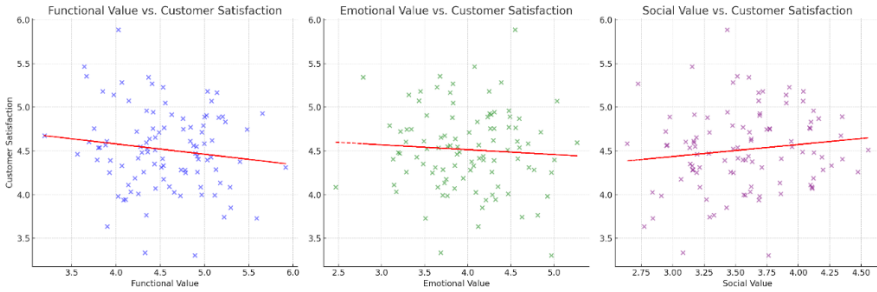


Fig. 1. Influence of Perceived Value Dimensions on Customer Satisfaction

5 Discussion

The results indicate that NEV enterprises should prioritize enhancing functional and emotional value to boost customer satisfaction and loyalty. Investments in vehicle performance, reliability, and innovative features can lead to higher user satisfaction. Emotional value can be enhanced through marketing strategies that evoke positive emotions and create a sense of excitement around the brand.

5.1 Practical Implications

NEV companies should focus on enhancing functional value by improving vehicle performance, safety, and reliability, as this can significantly increase customer satisfaction. They should boost emotional value through marketing campaigns that highlight the excitement and enjoyment of driving NEVs. Additionally, although social value is less impactful on satisfaction, it can still be leveraged to target specific market segments interested in status and prestige.

5.2 Limitations and Future Research

This study has several limitations, including the geographic concentration of survey respondents and potential biases in self-reported data. Future research should explore

longitudinal data to capture changes in perceived value over time and consider additional variables such as environmental benefits and cost savings.

6 Conclusion

Our empirical computer model demonstrates the significant impact of user-perceived value on NEV enterprise performance. By focusing on functional and emotional value, NEV companies can improve customer satisfaction and loyalty, ultimately driving market success.

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