



The Impact of Branding on the Purchase Intention of Electric Vehicle Consumers in China's Zhejiang Province

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Abstract. Amid the global wave of low-carbon transition and automotive industry innovation, electric vehicles have emerged as the core of sustainable transportation development. China, the world's largest market for electric vehicle production and consumption, has achieved leapfrog development in the new energy vehicle industry through policy support, technological breakthroughs, and market cultivation—with Zhejiang Province standing out as a key domestic consumption hub for electric vehicles, buoyed by its advanced economy, leading digitalization level, and strong consumer purchasing power, where market competition is growing increasingly intense.

Against this fiercely competitive backdrop, branding has become a critical factor shaping consumers' purchasing decisions, prompting an exploration into how four key branding dimensions—brand recall, brand recognition, brand loyalty, and brand image—influence the purchase intent of electric vehicle consumers in Zhejiang Province. Drawing on survey data from 400 consumers in Zhejiang Province, the study finds that all four branding dimensions exert a significant positive impact on electric vehicle purchase intent, with brand loyalty having the strongest effect, followed by brand image, brand recall, and brand recognition in sequence.

These branding factors collectively explain 46% of the variations in purchasing intent observed among the surveyed consumers, and building on these empirical results, the paper further analyzes the mechanisms through which branding exerts its influence. Targeted practical recommendations are also put forward to assist electric vehicle manufacturers in optimizing their brand strategies and expanding their presence in regional markets.

Keywords: Branding, Electric Vehicles, Consumers, Purchase Intention

1 Introduction

Against the backdrop of the global automotive industry's transition toward green and low-carbon development, China has emerged as the core engine driving the advancement of the global electric vehicle sector, supported by its massive market scale and targeted policy incentives. As one of China's most economically dynamic and innovation-driven regions, Zhejiang Province occupies a pivotal position in this trans-

formative wave—boasting a highly urbanized transportation network, robust digital infrastructure, and a concentration of leading domestic new energy vehicle manufacturers, including BYD^[1].

As technological barriers gradually fade and market competition intensifies, the trend toward product homogenization in the electric vehicle sector has become increasingly prominent. In this context, brand awareness, a core component of brand equity, is evolving into a pivotal lever that shapes consumers' purchasing decisions. Far from being a mere recognition of brand names, brand awareness is a complex construct encompassing the strength of brand memory, psychological associations, and emotional commitment. Within Zhejiang's unique economic and cultural context, a thorough exploration of how brand awareness specifically influences consumer purchasing intentions carries significant theoretical and practical value for unraveling the micro-level operational mechanisms of China's new energy vehicle market^[2].

2 Research Hypothesis

2.1 Theoretical Framework

This study is based on consumer behavior and brand equity theories, using the CBBE model. Integrating Zhejiang's EV market reality, local consumers' cognitive habits and vehicle characteristics, it refines brand awareness into four dimensions, with purchase intent as the dependent variable, building a model to explore brand awareness' impact on purchasing decisions.

Brand recall is consumers' ability to autonomously associate and retrieve an EV brand without external cues, directly determining its entry into purchase consideration sets^[3]. Brand recognition is rapid logo-based identification, a prerequisite for brand association and foundation for brand recall.

2.2 Research Hypotheses

Based on the four core dimensions of brand awareness, Zhejiang's EV market consumption characteristics, local product competition and the established theoretical framework, this study clarifies their intrinsic relationships with consumers' purchase intent, laying a solid foundation for formulating hypotheses.

Through comprehensive analysis, this study proposes core hypotheses: brand recall, recognition, loyalty and image all positively impact Zhejiang EV consumers' purchase intent. Consumers with stronger performance in these dimensions tend to be more willing to purchase EVs.

3 Research Methods

To validate the aforementioned hypotheses, this study employs a methodology combining quantitative research with empirical analysis. For data collection, the research data were derived from a specialized questionnaire survey conducted among residents

of Zhejiang Province. Considering the province's substantial permanent population of approximately 66.5 million by the end of 2024, the study calculated the sample size using Taro-Yamane's formula at a 95% confidence level and 5% margin of error. Through a combination of convenience sampling and snowball sampling, 400 valid questionnaires were successfully collected, representing potential electric vehicle consumers across various age groups, occupations, and income brackets^[4].

3.1 Control Variables

To isolate the unique contribution of branding dimensions and eliminate confounding effects, three control variables were incorporated into the regression model:

- 1.Price sensitivity (measured by a 5-point Likert scale)
- 2.Government subsidy awareness (measured by a 5-point Likert scale)
- 3.Environmental concern (measured by a 5-point Likert scale)

These controls ensure that the estimated effects of brand recall, brand recognition, brand loyalty, and brand image are net effects independent of price perception, policy cognition, and pro-environmental attitudes^[5].

During data analysis, descriptive statistical methods were employed to characterize the sample characteristics, while Pearson correlation analysis was utilized to examine linear relationships among variables. A hierarchical multiple linear regression model was ultimately constructed to determine the explanatory power and influence weights of each dimension of brand awareness on purchase intent. The multi-level analytical approach ensured the robustness of the research findings.

4 Result Analysis

4.1 Demographic Characteristics of Respondents

Table 1. Gender and Age Distribution of Respondents

Category	Group	Proportion (%)
Gender	Male	49.8
	Female	50.2
Age	≤25 years old	20.5
	26-35 years old	19.8
	36-45 years old	20.5
	46-55 years old	17.8
	56-65 years old	21.5

This study collected 400 valid questionnaires, with the respondent sample exhibiting a balanced demographic structure and strong regional representativeness. The sample was appropriately stratified across multiple dimensions, ensuring representation of diverse groups. The balanced demographic composition effectively minimized sampling bias, guaranteeing the reliability and generalizability of the findings, thereby accurately reflecting the overall characteristics of electric vehicle consumers in Zhejiang Province as show in table 1 and table 2.

Table 2. Educational Background and Occupation Distribution of Respondents

Category	Group	Proportion (%)
Educational Background	High school and below	26.5
	Junior college	25.8
	Bachelor degree	25.8
	Master degree and above	22.0
Occupation	Government staff	16.8
	Enterprise staff	16.5
	Professional	17.8
	Business owner	15.8
	Student	18.5
	Freelancer	14.8

4.1.1 Geographic Distribution within Zhejiang Province.

To reflect urban-rural disparities in EV charging infrastructure and brand exposure, the geographic distribution of 400 valid respondents is stratified as follows:

Hangzhou: 26.3% (n = 105)

Ningbo: 22.5% (n = 90)

Wenzhou: 15.0% (n = 60)

Other prefecture-level urban areas: 24.2% (n = 97)

Rural counties and towns: 12.0% (n = 48)

Urban respondents account for 88.0% of the total sample, which is consistent with the high urbanization level of Zhejiang Province. Urban-rural differences in charging facilities and brand touchpoints may moderate the relationship between branding dimensions and purchase intention, which is further discussed in Section 5^[6].

4.2 Descriptive Analysis of the Branding Dimension

Among these metrics, brand recall averages 3.01, showing consumers retain strong active memory of mainstream electric vehicle brands. Brand recognition averages 3.03, meaning consumers can easily identify familiar EV brands through logos and visual symbols. Brand loyalty averages 2.98, reflecting moderate emotional preference and repurchase intention toward specific EV brands. Brand image averages 2.93, indicating consumers have a clear overall perception and associations with EV brands, though they have not yet formed a highly consistent positive impression. Standard deviations across all dimensions range from 1.86 to 2.16, and these variations in consumer brand perception align with the diversity of regional consumer demographics as show in figure 1.

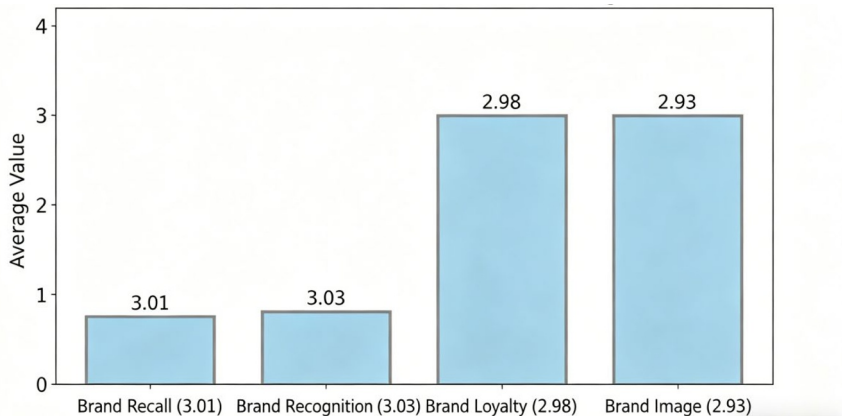


Fig. 1. Electric Vehicle Brand Dimension Averages

4.3 Regression Analysis

A hierarchical multiple linear regression was performed with purchase intention as the dependent variable. Control variables (price sensitivity, government subsidy awareness, environmental concern) were entered in Step 1, and four branding dimensions were entered in Step 2. The regression model was statistically significant ($F = 94.7$, $p < 0.001$), with $R^2 = 0.46$ and adjusted $R^2 = 0.45$, indicating that branding dimensions explain 46% of the variance in consumers' purchase intention. .

Notes: $N = 400$. VIF values range from 1.58 to 1.71, all below the critical threshold of 10, formally verifying the absence of multicollinearity. All independent variables are significant at the 0.001 level.

Standardized regression coefficients present the impact order: brand loyalty ($\beta = 0.30$) > brand image ($\beta = 0.22$) > brand recall ($\beta = 0.19$) > brand recognition ($\beta = 0.15$). All four branding dimensions exert significant positive effects on purchase intention, which fully validates the research hypotheses.as show in figure 2.

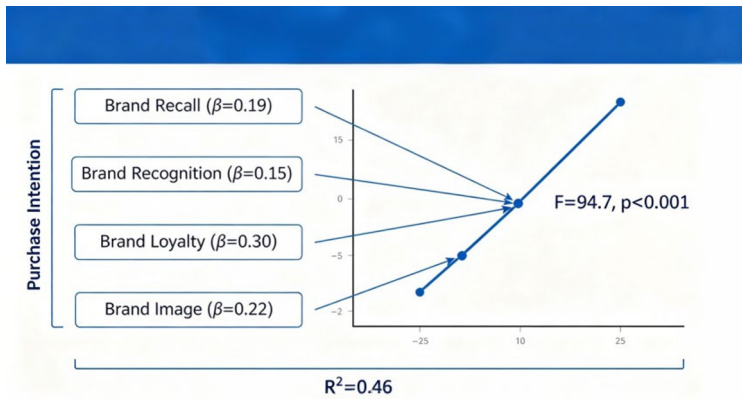


Fig. 2. Parameter Linear Analysis Chart

5 Discussion of Results

Brand building is a key factor influencing the purchasing intentions of electric vehicle consumers in Zhejiang Province, with all four dimensions exerting a positive driving effect and helping to reduce perceived risks during consumer decision-making. Among these, brand loyalty has the most significant impact: consumer trust and emotional identification translate into purchasing tendencies, fostering word-of-mouth recommendations and stable preferences, which is also the core reason why leading brands hold an advantage^[7]. Brand image ranks second; by aligning with Zhejiang consumers' demands for environmental sustainability and product quality, a positive brand image enhances purchasing willingness, while a negative image increases consumer concerns. Although brand recall and recognition have a relatively weaker influence, they serve as the foundation, enabling brands to stand out and laying the groundwork for subsequent purchasing decisions.

6 Conclusion

The relative importance of branding dimensions varies across different EV brand segments in Zhejiang's market. For domestic brands (e.g., BYD), brand loyalty and brand image present stronger effects owing to mature local service networks and high market penetration. For international brands, brand recognition and brand recall play a more critical role in improving regional familiarity. For premium EVs, brand image and emotional loyalty dominate purchase decisions; for mass-market EVs, brand recognition and basic brand recall are more decisive. Future research can adopt subgroup regression or moderation analysis to test these segment differences empirically.

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