

The Impact of Perceived Interactivity on Electric Vehicle Purchase Intention: Chinese Consumers' Perceived Value

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ABSTRACT:

With the rapid development of digital media, consumers are no longer merely passive recipients of product information; instead, they place greater emphasis on interactive experiences, information feedback, and autonomous control. As competition in the electric vehicle market continues to intensify, firms need not only to rely on product performance to attract consumers, but also to enhance consumers' perceived value and purchase intention through more effective forms of interaction. The findings indicate that both two-way communication and user control have significant positive effects on perceived value; two-way communication, user control, and perceived value all have significant positive effects on consumers' purchase intention; and perceived value plays a significant mediating role both between two-way communication and purchase intention and between user control and purchase intention. These findings suggest that a positive interactive experience can not only directly strengthen consumers' purchase intention, but also further reinforce it by enhancing their evaluation of the value of the product and the information provided. By incorporating perceived interactivity and perceived value into a unified analytical framework, this study reveals the underlying mechanisms through which interactive factors influence purchase intention, thereby enriching research on consumer behavior in the electric vehicle sector. Firms can promote more positive consumer purchase decisions by strengthening two-way communication mechanisms, improving the user control experience, and enhancing the effectiveness of value communication.

Keywords: perceived interactivity; two-way communication; user control; perceived value; purchase intention.

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1. Introduction

Driven by both the dual-carbon goals and industrial upgrading, electric vehicles have gradually become an important lever for the low-carbon transition in China's transportation sector. China has introduced policies under the New Energy Vehicle Industry Development Plan (2021–2035) and has continuously clarified the development direction of battery-electric vehicles.

Changes in the social consumption environment have further driven the transformation of the electric vehicle market. Digital lifestyles have changed the paths by which consumers obtain information and have also raised consumer expectations for response speed, information transparency, and a sense of participation in the experience (Pellegrino, 2024). Against this background, the marketing approach that firms once relied on, namely one-way promotion and functional publicity, can no longer effectively stimulate consumer purchase interest.

Prior research shows that perceived value influences purchase decisions and that interactive experiences shape consumer attitudes and behaviour (Yin & Liu, 2026). However, electric vehicles involve high prices, long decision cycles, complex usage scenarios, and strong technological attributes, making continuous value confirmation during interaction especially important. Existing studies still provide limited explanation of how perceived interactivity affects purchase intention through perceived value in the Chinese market.

Drawing on perceived interactivity theory and the S-O-R model, this study examines how perceived interactivity affects Chinese consumers' electric vehicle purchase intention and whether perceived value mediates this relationship. Questionnaire data from potential consumers are analysed using structural equation modelling.

The research of this paper carries both theoretical and practical significance. At the theoretical level, integrating perceived interactivity and perceived value into a unified

analytical framework helps expand the explanatory power of research on electric vehicle consumption behaviour and deepen the application of perceived interactivity in the context of high-involvement consumer goods. Only by improving interaction quality and strengthening consumer value perception can enterprises more effectively enhance purchase intention and further promote the gradual transition of the electric vehicle market from policy-driven to market-driven development.

1.1 Conceptual Background and Literature Review

1.1.1 Core Research Constructs

1.1.1.1 Perceived Interactivity

Perceived interactivity is an important variable for explaining consumer behaviour in digital consumption contexts and a key predictor of purchase decisions (Al-Geitany et al., 2023). Perceived interactivity emphasises consumers' subjective perceptions of response timeliness, process controllability, and the quality of two-way communication during interactions. Therefore, perceived interactivity has become an important perspective for understanding electric vehicle consumption decisions.

Existing research generally holds that a high level of perceived interactivity can enhance consumers' sense of participation, trust, and brand identification, and further influence their purchase intention. Other studies indicate that media richness, telepresence, and varying interaction forms shape the effects of perceived interactivity (Shaputra et al., 2023). Relevant studies based on the SOR framework also show that perceived interactivity can function as an external stimulus, driving consumers from information reception to purchase action (Joo & Yang, 2023).

Based on the above studies, this paper defines perceived interactivity as consumers' overall evaluation of interaction quality, feedback efficiency, and degree of participation during their interactions with intelligent electric vehicle products and brand digital channels. Based on this understanding, this paper further develops a

theoretical model to examine the direct effect of perceived interactivity on electric vehicle purchase intention and to analyse.

1.1.1.2 Two-way Communication

Two-way communication is a core dimension of perceived interactivity and an important source shaping consumers' perceived value. This dimension mainly reflects consumers' subjective judgments regarding whether responses are timely, whether the content is effective, and whether the communication process is smooth when interacting with a brand or an intelligent system (Vyas & Vishwakarma, 2026). Existing research has already discussed the mechanisms of two-way communication from multiple perspectives. Some studies have found that timely and accurate information feedback helps increase users' trust in intelligent systems and strengthens their acceptance of functions such as remote vehicle control, intelligent assistance, and in-vehicle human-machine interaction (Wanner et al., 2022). Other studies have pointed out that stable two-way communication between brands and consumers can reinforce relational ties and further enhance consumer loyalty and their willingness to maintain ongoing attention (Chuang & Chen, 2023).

Based on the above understanding, this paper defines two-way communication as Chinese consumers' overall perception of the symmetry of information exchange, the timeliness of feedback, and the reliability of communication during their interactions with electric vehicle brands and their digital channels. This paper argues that two-way communication can further strengthen consumers' purchase intention toward electric vehicles by enhancing their perceived functional value, perceived emotional value, and safety perception.

1.1.1.3 User Control

User control is an important dimension of perceived interactivity, reflecting consumers' subjective sense of control over both the operational process and system outcomes when using intelligent electric vehicle systems (Li et al., 2025). When consumers can clearly understand

the system logic and retain the right to intervene at key points, they are more likely to develop stable psychological expectations (Gabelaia & Tracy, 2025).

Existing studies have already examined user control in the contexts of intelligent terminals and new energy vehicles. The study strikes an appropriate balance between system autonomy and user control. Research on China's new energy vehicle market also shows that customisable interaction interfaces and selectable functional configurations can strengthen users' psychological ownership and enhance their identification with use (Krauss & Wienrich, 2025).

Based on the above studies, this paper defines user control as consumers' overall evaluation of decision-making autonomy, operational controllability, and the predictability of feedback when operating intelligent electric vehicle systems. This paper argues that greater user control can improve consumers' judgments of product practicality, safety, and ease of use. It can further increase their purchase intention toward electric vehicles by strengthening their perceptions of functional value and emotional value.

1.1.1.4 Perceived Value

Perceived value reflects consumers' overall evaluation of a product after weighing perceived benefits against perceived costs, and is a core psychological variable driving electric vehicle purchase intention. Relevant studies in the new energy vehicle sector indicate that perceived value has shifted from a traditional single-price dimension to a multidimensional structure composed of functional, emotional, and social values (Ach Ainur et al., 2023).

The existing literature has extensively examined the mechanisms underlying the formation of perceived value. Studies focusing on the Chinese market also reveal that interactive processes can transform consumers' environmental awareness into green value perceptions, thereby greatly boosting their purchase intention (Huda et al., 2023). These findings explain how interaction quality translates

into long-term social value and offer relevant theoretical support.

This study defines perceived value as Chinese consumers' overall sense of benefits gained across dimensions such as product functionality, psychological and emotional experience, and social responsibility during interactions with brands. This study treats perceived value as the core mediating variable. It aims to reveal how two-way communication and user control ultimately drive consumers' purchase intention toward electric vehicles by enhancing multidimensional perceived value.

1.1.1.5 Purchase Intention

Purchase intention reflects consumers' psychological propensity and likelihood to purchase a specific product and serves as a key indicator of their actual purchasing behaviour (Li et al., 2022). Consumer psychology theory holds that purchase intention effectively links consumers' perceptual processes with their final decision-making behaviour (Tian et al., 2022). Perceptions of technological innovation and the policy environment jointly drive Chinese consumers' purchase intention. By contrast, Hongsuchon and Li (2022) emphasise the role of social norms, arguing that positive interactions within brand communities strengthen purchase intention by enhancing users' sense of belonging. In addition, Chang and Hsiao (2025) find that individuals' identification of environmental values critically moderates the translation of interactive perception into behavioural intention.

This study defines purchase intention as the behavioural tendency and decision likelihood exhibited by Chinese consumers after perceiving brand interaction and forming value judgments. It examines how perceived interactivity—namely, two-way communication and user control—drives the formation of purchase intention, with perceived value as a mediating factor.

1.2 Hypothesis Development

1.2.1 Effects of Two-Way Communication and User Control on Purchase Intention

Two-way communication reflects the depth of information exchange, real-time interaction, and emotional resonance between electric vehicle brands and consumers. Existing studies generally regard two-way communication as a core factor driving purchase intention. Asyraff et al. (2024) note that high-quality brand interactions and user-generated content (UGC) can effectively reduce consumers' perceived risk. In addition, Asyraff et al. (2024) argue that real-time communication in live-streaming contexts can significantly stimulate audiences' purchase desire.

This study argues that two-way communication is an important force driving the conversion of electric vehicle purchases. This mode of communication helps consumers gain a deeper understanding of intelligent driving technologies, thereby alleviating their psychological anxiety about driving range and battery safety. Therefore, this study proposes the first hypothesis.

H1: Two-way communication has a significant positive effect on purchase intention.

User control reflects the degree to which consumers can achieve self-direction, freedom of choice, and personalised customisation when using digital touchpoints or physical electric vehicle products. At the same time, other empirical findings indicate that a high level of user control can directly drive purchase decisions (Yang et al., 2022).

The research of Liao et al. (2025) demonstrates that in augmented reality (AR) car-viewing or virtual test-drive scenarios, a stronger sense of behavioural control can significantly enhance users' purchase intention. Karthikeyan and Aruna (2025) propose that personalised settings and active control functions on intelligent terminals can induce immersive experiences and translate them into purchasing behaviour. The research by Green (2024) emphasises that perceived controllability is a key factor in reducing technological resistance, enhancing psychological ownership, and increasing purchase intention. Therefore, this study proposes the second hypothesis.

H2: User control has a significant positive effect on purchase intention.

1.2.2 Effects of Two-Way Communication and User Control on Perceived Value

Two-way communication reflects the degree of equality in information exchange, real-time feedback, and emotional interaction between electric vehicle brands and consumers. An empirical study by Sun et al. (2025) found that high-frequency, high-quality communication mechanisms can effectively reduce information asymmetry, thereby enhancing consumers' trust in the product. This study argues that two-way communication mainly exerts its effects through three dimensions: information feedback quality, social presence, and emotional connection.

In the context of intelligent connected vehicles, two-way communication includes the instant responses of in-vehicle voice assistants and value cocreation interactions on brand mobile applications. Liu et al. (2024) note that information exchange based on the principle of reciprocity enables consumers to experience the brand's personified care, which, in turn, helps them build a stable value evaluation system in a complex digital and intelligent environment. Therefore, this study puts forward the third hypothesis.

H3: Two-way communication has a significant positive effect on perceived value.

User control refers to the degree to which consumers can autonomously direct the interaction process, adjust interface flexibility, and choose functions when operating intelligent systems or engaging in brand interactions. A study by Zhou et al. (2024) shows that active control can significantly strengthen users' perceptions of system usefulness and ease of use, thereby increasing their evaluation of functional value.

This study focuses on user control over the customizability of intelligent interfaces, the intervenability of assisted-driving systems, and consumers' autonomous choice over digital services. In addition, flexible control pathways

can stimulate users' psychological ownership of the brand. Research by Rohden and Espartel (2024) confirms that a sense of control effectively reduces users' perceptions of technological risk and thereby improves their overall value judgments. Therefore, this study proposes the fourth hypothesis.

H4: User control has a significant positive effect on perceived value.

1.2.3 Effect of Perceived Value on Purchase Intention

Perceived value refers to consumers' overall evaluation of electric vehicles, formed after they compare their expected benefits and costs. The S-O-R framework holds that perceived value, as a consumer's internal psychological judgment, directly influences subsequent behavioural responses. Research on new energy vehicles also supports this conclusion. Ahmed et al. (2025) further note that perceived value in digital and intelligent consumption contexts serves as a key mediating factor between the interactive experience and purchase decisions.

This study argues that the perceived value of electric vehicles comprises functional, emotional, social, and green value. When Chinese consumers evaluate electric vehicles, they pay attention not only to practical attributes such as driving range and intelligent features, but also to the technological image and environmental significance that the brand conveys. Therefore, this study proposes the fifth hypothesis.

H5: Perceived value has a significant positive effect on purchase intention.

1.2.4 Mediating Role of Perceived Value

Two-way communication is an important means for brands to build trust and convey product information, but this interaction alone does not necessarily translate into purchase intention. The above indicates that when consumers move from interactive participation to purchase intention, they typically go through a mediating process of value internalisation.

In the context of electric vehicle consumption, when potential users experience

professional support and emotional respect in real-time communication with a brand, they can more easily form positive judgments about the product's functional value and social value. This value judgment can reduce consumers' uncertainty about new technologies and strengthen their identification with the brand (Marmat, 2025). Therefore, this study proposes the sixth hypothesis.

H6: Perceived value mediates the relationship between two-way communication and purchase intention.

The influence of user control on purchase intention primarily manifests through an enhancement of consumers' sense of self-efficacy. Studies by Gao et al. (2026) find that greater control can enhance interactive immersion and strengthen users' psychological ownership. Research by Gao et al. (2024) shows that, in smart cockpit scenarios, users' autonomous configuration of interfaces and precise control over functions can strengthen their perception of emotional value.

In the context of electric vehicle consumption, if brands give users greater rights to personalised customisation and system intervention, consumers can more easily view the product as fitting their lifestyle and, on that basis, form higher evaluations of utilitarian and hedonic value. Therefore, this study proposes the seventh hypothesis.

H7: Perceived value mediates the relationship between user control and purchase intention.

1.3 Research Framework

The study develops a mechanism model of the relationships among perceived interactivity, perceived value, and purchase intention in the context of electric vehicle consumption. It conducts an empirical test of the model. The research team defines electric vehicle purchase intention as a decision tendency shaped by the joint influence of technological interactive experience and psychological value evaluation.

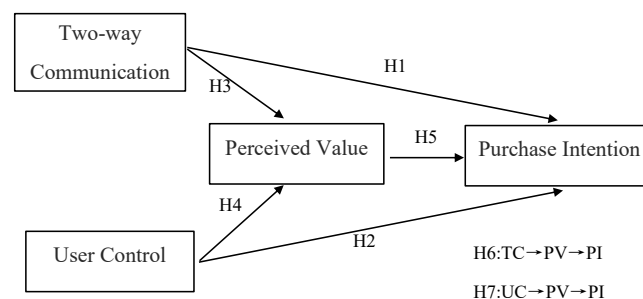


Figure 1.1 Research Framework

Based on the research framework, the study analyses the direct effects of two-way communication and user control on purchase intention. It tests the mediating role of perceived value in the relationship between interactive characteristics and purchase intention. The findings provide empirical support for electric vehicle enterprises to optimise interactive marketing strategies.

2. Methodology

2.1 Participants

The study selects young potential electric vehicle consumers in China's first-tier and

second-tier cities as the survey population. The population shows a high level of acceptance of digital technology and a relatively consistent digital lifestyle, aligning well with the research context of perceived interactivity.

From October 2025 to March 2026, the research team conducted surveys and collected data in five representative core cities in China. The research team conducted quota sampling based on the target population proportions in each city and combined online questionnaires with offline field visits to collect samples.

The study obtained 619 initial samples in total. The sample sizes for the five cities were 142, 163, 125, 109, and 80, respectively. The sample distribution across the five cities generally matched the spatial distribution of the target population, indicating strong regional representativeness. The sample size also meets the basic requirements of multivariate statistical analysis.

2.2 Instruments

The study uses a structured questionnaire to measure the core variables and applies a five-

point Likert scale for scoring. The questionnaire comprises two parts: sample characteristics and core variables. The second part measures four constructs, namely two-way communication, user control, perceived value, and purchase intention, and includes a total of 12 measurement items. The research team uses the items to assess the influence of digital marketing contexts on consumer psychology and behaviour.

Table 2.1 Survey Questionnaire

Construct	Measurement Items	References
two-way communication (TC)	Electric vehicle brands proactively engage with me through multiple channels, responding promptly to my queries and needs.	Sharma et al. (2025)
	I can engage in two-way communication with electric vehicle manufacturers and other owners, sharing my experiences and accessing product information.	
	The pre-sales consultation and post-sales feedback processes for electric vehicles feature open lines of communication and high interactivity, allowing me to be fully involved in discussions about the product.	
user control (UC)	I have a high degree of control over the electric vehicle's settings, operating modes and personalised experience.	Song et al. (2023)
	When faced with electric vehicles from different makes and models, I can flexibly select and compare them based on my needs and make a purchasing decision.	
	I can independently manage and control the usage status and charging schedule of my electric vehicle via the official app, the in-car system and other devices.	
perceived value (PV)	In terms of value for money, electric vehicles offer performance and specifications that are commensurate with their price, making them highly practical. Buying and using an electric vehicle brings me a sense of emotional fulfilment (such as aligning with environmental values and enjoying the technological experience).	Alanazi (2023)

purchase intention (PI)	Compared with traditional petrol and diesel vehicles, electric vehicles offer clear overall advantages in terms of running costs and user experience.	Deng et al. (2024)
	I have definite plans to buy an electric car within the next one to three years.	
	I would recommend electric cars to my family and friends, as I recognise their value and the benefits of owning one.	
	Compared to other types of transport, I would prefer to buy an electric car for my daily commute.	

2.3 Sample and Data Collection

The study sets the sampling standard using the Krejcie and Morgan (1970) sample size model. The above sample-size model indicates that a study requires at least 384 samples when the population size is large. After data collection, the researchers checked each questionnaire individually and removed samples with patterned responses and missing key information. The sample size exceeds the minimum requirement of the classical model and therefore meets the statistical requirements of the subsequent empirical analysis. The research team then carried out model testing to improve the reliability and robustness of the results.

3. Results

3.1 Construct Reliability and Validity

The study uses Cronbach's α (Al-Muzahimi et al., 2025), composite reliability, and average variance extracted to assess the scale's reliability and validity. The theoretical model includes four first-order latent variables, and the researchers assign three measurement indicators to each, yielding 12 observed items in total. The results show Cronbach's α values for the latent variables ranging from 0.818 to 0.842, all above 0.80, indicating strong internal consistency in the scale. Composite reliability values for the latent variables range from 0.853 to 0.858, and all reach commonly accepted thresholds, further supporting scale reliability. Measurement indicators for the constructs, therefore, show strong convergence, and the scale structure remains stable.

Table 3.1 Reliability and Validity Test Table

Factors	Variable	Factor Loadings	Cronbach'a	CRValue	AVEValue
Two-Way Communication (TC)	TC1	0.827	0.834	0.855	0.663
	TC2	0.835			
	TC3	0.780			
User Control (UC)	UC1	0.827	0.818	0.858	0.668
	UC2	0.803			
	UC3	0.821			
Perceived Value (PV)	PV1	0.824	0.819	0.854	0.662
	PV2	0.830			
	PV3	0.786			
Purchase Intention (PI)	PI1	0.799	0.842	0.853	0.660
	PI2	0.836			
	PI3	0.801			

3.2 Factor Analysis

The study uses exploratory factor analysis to examine the scale structure. The researchers first apply the KMO and Bartlett's test of sphericity (Thao et al., 2022) to determine whether the data meet the assumptions of factor analysis. The results show a KMO value of 0.871, exceeding the commonly accepted threshold of 0.70 and indicating a strong correlational foundation among the measurement indicators. Based on the results, the research team confirms that the sample data meet the statistical conditions for factor extraction.

After completing the suitability tests, the researchers further conduct factor extraction and explanatory power analysis. The researchers use principal component analysis to extract latent factors and summarise the information structure of the original variables. The research team makes a comprehensive assessment of the scale structure by combining the KMO value, Bartlett's test results, and the cumulative variance contribution rate. The analysis provides a reliable data foundation for subsequent tests of the relationships among perceived interactivity, perceived value, and purchase intention.

Table 3.2 Results of the Scale Validity Test

Variable	TC	UC	PV	PI
TC1		.827		
TC2		.835		
TC3		.780		
UC1			.827	
UC2			.803	
UC3			.821	
PV1				.824
PV2				.830
PV3				.786
PI1	.799			
PI2	.836			
PI3	.801			
KMO	.871			
χ^2	2076.578			
df	66			
Sig.	.000			
Eigenvalue	5.088	1.465	1.264	1.166
Percentage of Variance	42.4	12.206	10.532	9.716
Cumulative Percentage	Variance 42.4	54.606	65.138	74.854

3.3 Correlation Analysis

The study examines the degree of association and conceptual boundaries among the core constructs in the theoretical model through discriminant validity testing and Pearson correlation analysis. The researchers calculate correlation coefficients for the four first-order latent variables and 12 measurement items and, on this basis, analyse the direction, strength, and significance of the relationships among the variables. The results show significant positive correlations among all core latent variables. Specifically, two-way communication exerts a

significant positive effect on purchase intention, with a correlation coefficient of 0.475 ($p < 0.01$). Similarly, user control also positively and significantly influences purchase intention, with a correlation coefficient of 0.427 ($p < 0.01$). and perceived value is also significantly and positively correlated with purchase intention, with a correlation coefficient of 0.461 ($p < 0.01$). The above results are consistent with the research hypotheses and provide a statistical basis for subsequent tests of the structural path from perceived interactivity to perceived value to purchase intention.

Table 3.3 Results of the Correlation Analysis between Variables

		TC	UC	PV	PI
TC	Pearson's Correlation	1	.423**	.411**	.475**
	Significance(Two-tailed)		.000	.000	.000
	Number of Cases	387	387	387	387
UC	Pearson's Correlation	.423**	1	.343**	.427**
	Significance(Two-tailed)	.000		.000	.000
	Number of Cases	387	387	387	387
PV	Pearson's Correlation	.411**	.343**	1	.461**
	Significance(Two-tailed)	.000	.000		.000
	Number of Cases	387	387	387	387
PI	Pearson's Correlation	.475**	.427**	.461**	1
	Significance(Two-tailed)	.000	.000	.000	
	Number of Cases	387	387	387	387

**, At the 0.01 level (two-tailed), the correlation is significant.

*, At the 0.05 level (two-tailed), the correlation is significant.

3.4 Model Construction

The study uses a structural equation model to test the path relationships among latent variables and to examine the overall explanatory power of the theoretical model. The researchers use Amos to construct the structural model and estimate path coefficients from the sample data to test the research hypotheses.

After model estimation, the research team further evaluates model fit, as these results reflect the degree of consistency between the theoretical framework and the observed data. The model's chi-squared-to-degrees-of-freedom ratio is 0.957, indicating a good overall fit. The model's NFI is 0.978, which exceeds the commonly used reference value of 0.90, indicating substantial improvement over the baseline model. The

RMSEA is 0.001, far below 0.05, indicating a small residual and a high degree of consistency

between the sample covariance structure and the theoretical specification.

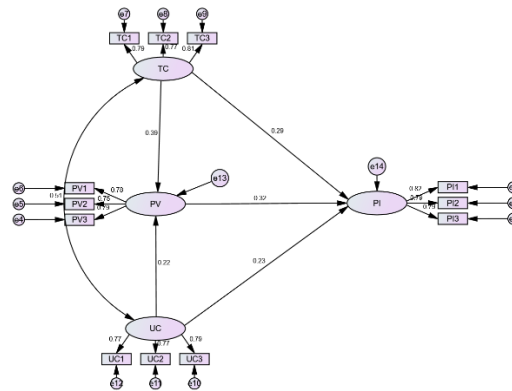


Figure 3.1 Structural Equation Model

Based on the above indices, the research team concludes that the theoretical model fits the sample data well and that the model as a whole attains an acceptable level of fit. These results

provide a statistical foundation for subsequent analyses of the direct, mediating, and path effects among the latent variables.

Table 3.4 Goodness-of-Fit Indices for the Structural Equation Model (n=387)

Measurement model	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA
Evaluation indicators	<5	>0.90	>0.90	>0.90	>0.90	<0.08
Outcome model	0.957	0.980	0.968	0.978	1.000	0.001

3.5 Analysis of Main Effects and Mediating Effects

After confirming that the structural equation model provided a good fit, this study further examined the main effects among the four core variables using regression estimates, standard errors, critical ratios, and significance levels. Table 4.5 shows that the standardised

regression coefficients for the paths ranged from 0.217 to 0.391, all of which were positive. The statistical test results further show that the p-values for all paths ranged from 0.005 to 0.023, all below 0.05, indicating that all main effects were statistically significant. These findings provide empirical support for the research hypotheses, and H1, H2, H3, H4, and H5 were all supported.

Table 3.5 Analysis of Main Effects of Variables

Hypothetical	Path	Path Coefficient	95% Confidence Interval	P	Conclusion
H1	TC → PI	0.391	0.252, 0.482	0.023	Support
H2	UC → PI	0.217	0.095, 0.334	0.012	Support
H3	TC → PV	0.294	0.149, 0.431	0.012	Support
H4	UC → PV	0.230	0.117, 0.348	0.015	Support
H5	PV → PI	0.316	0.213, 0.488	0.005	Support

After completing the main effect tests, this study further examined the mediating role of perceived value in the relationship between perceived interactivity and electric vehicle purchase intention. Table 4.6 shows that the coefficients for the two mediating paths are 0.096 and 0.120, respectively, and both are positive.

The statistical test results show that the p-values of the two paths are 0.006 and 0.010, respectively, both below 0.05. The above indicates that perceived value plays a significant mediating role between interactivity and purchase intention. The results, therefore, support H6 and H7.

Table 3.6 Analysis of Mediating Effects

Hypothetical	Path	Path Coefficient	95% Confidence Interval		P	Conclusion
H6	TC→PV→PI	0.120	0.052	0.228	0.006	Support
H7	UC→PV→PI	0.096	0.043	0.168	0.010	Support

4. Discussion

This study constructs and tests a mechanism model of the relationships among perceived interactivity, perceived value, and electric vehicle purchase intention in the context of digital marketing. This paper defines purchase intention as consumers' decision tendency, shaped by interactive technological experiences and psychological value evaluations. Using a quantitative approach, the empirical analysis systematically tests the relationships among four core variables: two-way communication, user control, perceived value, and purchase intention.

The research findings show that high-quality interactive experiences can significantly increase consumers' purchase intention, and perceived value mainly drives this effect. SOR theory explains electric vehicle purchase behaviour in digital and intelligent consumption environments quite effectively.

4.1 Two-Way Communication and User Control Exert a Positive Influence on Perceived Value

Existing empirical studies consistently show that two-way communication can significantly enhance consumers' perceived value. Research on digital marketing further indicates that two-way communication is an important antecedent of consumers' value evaluation. The above suggests that continuous, timely information exchange between brands and users improves

consumers' overall assessment of the benefits products and services offer.

In the context of electric vehicle consumption, two-way communication influences perceived value mainly through informational support and emotional support. Studies by Rainieri et al. (2023) show that professional answers, personalised care, and immediate feedback can ease consumers' cognitive anxiety when they encounter battery, motor, and electronic control systems, as well as autonomous driving technologies. Therefore, two-way communication can enhance consumers' overall perceived value by improving their information-acquisition and emotional experiences.

Existing studies also show that user control can significantly enhance consumers' perceived value. This effect becomes even more salient in the context of electric vehicles. When consumers can independently adjust parameters and manage the interaction process during virtual vehicle viewing, smart cockpit experiences, or in-vehicle system settings, they can more easily develop an immersive experience.

The above phenomenon happens because a higher level of control reduces consumers' cognitive load when processing complex, intelligent information and strengthens the fit between the product and their personal needs. In sum, both two-way communication and user

control can strengthen consumers' positive cognition of electric vehicles by improving their value judgments.

4.2 Two-Way Communication and User Control Exert a Positive Influence on Purchase Intention

Two-way communication is an important antecedent of Chinese consumers' electric vehicle purchase intention. Unlike one-way automobile promotion, digital marketing enables timely responses and active participation. High-quality communication meets consumers' cognitive and emotional needs, improves information acquisition, strengthens brand connection, and increases purchase intention (Gunawan et al., 2024).

User control also significantly increases electric vehicle purchase intention. AR tools and intelligent configuration systems give consumers greater autonomy over the pace, content, and configuration of the decision process. This control strengthens value judgments and purchase motivation (Yang & Young, 2025).

4.3 Perceived Value Exerts a Positive Influence on Purchase Intention

Previous studies show that perceived value can significantly increase Chinese consumers' purchase intention toward electric vehicles. Consumer behaviour theory views perceived value as a key link between interactive experience and purchase decision-making. The above suggests that electric vehicle consumption involves not only consumers' judgments of product functions but also their overall evaluations of utility and psychological benefits.

More specifically, a higher level of perceived value can further transform consumers' latent needs into clear purchase intentions. Su and Wan (2024) find that positive value evaluations can reduce consumers' perceived risk and anxiety when they face new energy technologies and can strengthen their trust in brands. Perceived value can translate external interactive stimuli into internal purchase motivation, thereby increasing consumers' purchase intention.

4.4 The Mediating Role of Perceived Value

Empirical results indicate that SOR theory applies to digital marketing contexts for electric vehicles. This study finds that two-way communication and user control shape Chinese consumers' perceived value, which, in turn, guides their purchase intentions.

Perceived value significantly mediates the relationship between two-way communication and purchase intention. Consumers evaluate interaction quality rather than responding mechanically to marketing information. Responsive communication builds trust and security, transforming information reception into favourable value judgments and stronger purchase intention (Alsadoun & Alnasser, 2025).

Perceived value also mediates the relationship between user control and purchase intention. Digital technology increases purchase intention when consumers experience meaningful control and consequently evaluate the product more favourably. Functional e-service design can strengthen user control, perceived value, and satisfaction (Ahmad et al., 2025). Overall, perceived value connects two-way communication, user control, and purchase intention. Interaction stimuli that brands provide can generate sustained purchase motivation only when consumers translate them into genuine value judgments. The formation of electric vehicle purchase intention depends not only on interactive attributes, but also on consumers' active construction of value meaning.

5. Conclusion

5.1 Research Contributions

This study makes theoretical and practical contributions in three main respects. First, this study introduces perceived interactivity theory into electric vehicle consumption research and extends its explanatory scope in digital marketing contexts. This study examines how these two interactive characteristics influence Chinese consumers' purchase intention, and thus enriches the analytical perspectives of green consumption and automobile marketing research.

Second, this study deepens our understanding of the mediating role of perceived value. The findings show that perceived value links interactive stimuli with purchase decisions. Only when consumers form positive value judgments during the interaction process do they strengthen their psychological sense of security, reduce their uncertainty about new technologies, and further increase their purchase intention. Finally, this study reveals the decision-making mechanism of potential electric vehicle consumers in the Chinese context. This finding provides new empirical evidence on Chinese consumers' car purchase decisions in the context of the low-carbon transition. The result provides firms with a useful reference for optimising interactive marketing strategies.

5.2 Research Implications

The findings of this study offer three implications for the electric vehicle industry and digital marketing practice. Firms can optimise online interactive platforms to align with Chinese consumers' preferences and enhance offline test-drive and scenario-based experiences, thereby reducing consumers' cognitive biases and uncertainty about new energy technologies. Second, firms should improve both information efficiency and emotional support throughout the marketing process. The findings show that perceived value serves as an important mechanism in promoting purchase intention. Firms can design user-participation mechanisms around real travel scenarios and encourage consumers to turn technological interest into purchase intention.

Finally, governments and firms should work together to improve the interactive ecosystem. Governments should optimise policies to promote new energy vehicles and guide firms to

strengthen digital interactive infrastructure. Firms should improve mechanisms for community sharing, user feedback, and content co-creation to increase market penetration and promote the diffusion of green mobility.

5.3 Research Limitations and Future Research

The study still has three limitations. First, the study uses a relatively narrow contextual setting. The paper mainly examines perceived interactivity in online settings. Still, electric vehicle purchasing also involves online information search and offline test-drive experience, and different channels may play different roles in information delivery and value formation. Future research can include live-streaming and integrated dealership scenarios to examine the boundary conditions of the findings.

Second, the sample remains underrepresented. The sample mainly comprises young consumers in first- and second-tier cities, and these young consumers generally share similar levels of technology acceptance and digital usage habits. Different regional, age, and income groups may respond differently to interactive feedback and perceived value. Future research can expand sample coverage and further examine the moderating effects of demographic variables.

Finally, the variable design still leaves room for extension. The paper primarily focuses on perceived interactivity, perceived value, and purchase intention, but electric vehicle purchase decisions also involve factors such as range anxiety, perceptions of subsidies, and technology fatigue. Future research can include more contextual variables and psychological variables to build a more comprehensive explanatory framework.

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7. Author Declaration

The author guarantees that this work is original and free from any conflict of interest.