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Original Research

Green Environment via Theory of Consumption Values: Impact of Attitude Towards Environment and Green Product Quality on Green Purchase Intention

Zhen Dong*, Minghao Huang

Business School, Seoul School of Integrated Sciences & Technologies, 46 Ewhayeodae 2-gil, Fintower, Sinchon-ro, Seodaemun-gu, Seoul, 03767, South Korea

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Abstract

This study delves into the influence of consumption values on green purchase intentions within the Chinese automobile industry, focusing on adopting electric vehicles (EVs) as a more sustainable alternative to traditional petrol vehicles. The objective was to examine how functional, social, and emotional values affect consumers' attitudes toward environmental issues and their subsequent intention to purchase green products. Utilizing a quantitative research methodology, data were gathered and analyzed through structural equation modeling to assess the influence of consumption values on attitudes toward environmental issues and green purchase intention. The results indicated that functional value had a strong positive effect on environmental attitudes, significantly influencing green purchase intentions. Social and emotional values also contributed positively to shaping environmental attitudes, suggesting that these factors play a crucial role in the decision-making process for potential EV consumers. The study's novelty lies in integrating the theory of consumption values with green purchase behavior, particularly within the burgeoning Chinese EV market. It provides a nuanced understanding of the predictors of green purchase intentions, offering valuable insights for manufacturers and policymakers looking to foster a more sustainable automotive industry. The findings underscore the importance of aligning product offerings with consumer values to accelerate the transition towards environmentally friendly vehicles.

Keywords: Green product quality, green purchase intention, theory of consumption values, Chinese automobile industry

*e-mail: Dzpaper9@163.com

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Introduction

Consumer preferences (e.g., repurchase intention, word of mouth, and willingness to pay more) have been significantly impacted by the growing concern for environmental sustainability, which has ushered in a period where demand for green products is rising [1, 2]. This paradigm shift is especially evident in industries where environmental concerns are of utmost importance, such as the Chinese industries [3, 4]. A mix of utilitarian, social, and affective values frequently influences consumers' inclination toward environmentally conscious products and, in turn, influences how they view environmental issues. Liao, Wu, and Pham [5], Amin and Tarun [1], and Lin and Huang [2] are just a few of the studies that have thoroughly examined the dynamics of consumer behavior in the context of green products, highlighting the importance of consumption values. Furthermore, the foundation for comprehending green purchase intentions is laid by the research of Mohd Suki [6] and Cheung and To [4], which emphasize the crucial relationship between these values and consumer attitudes toward environmental issues.

The significance of comprehending consumer behavior in markets for green products has been emphasized by Khan and Mohsin [7] and Sharma and Foropon [8]. However, their conclusions are limited to particular industries and cultural contexts. Substantial research gaps exist regarding a detailed understanding of how particular consumption values affect attitudes toward environmental issues. Several earlier studies, including Mohd Suki and Mohd Suki [9], Ali et al. [10], and De Silva, Wang, and Kuah [11], have provided insights into the broad patterns of green consumer behavior, but more evidence is needed to clarify whether such patterns apply to specific industries. The Chinese auto sector is one such industry that has substantial environmental impact and is reflective of the Chinese market's distinct consumer dynamics. Available literature provides only a limited understanding of how functional, social, and emotional values affect attitudes toward environmental issues in the context of the Chinese automobile industry. This gap is notable considering this industry's increasing significance for global environmental sustainability. The significance of these values in influencing green purchase intentions – as explored by Woo and Kim [12] and Awuni and Du [3] – remains understudied. Due to this oversight, industry stakeholders are less able to adapt their strategies to the changing needs of consumers who care about the environment. Thus, addressing the research gap on how values influence attitudes, intentions, and economic decision-making with a focus on the Chinese automobile industry is needed.

By investigating the effects of functional, social, and emotional values on attitudes toward environmental issues and their consequent influence on green purchase intentions in the Chinese vehicle industry, this research seeks to close the gaps outlined above. Doing so will provide a more comprehensive understanding of the elements influencing consumer behavior in this industry. The practical implications of the study's findings for Chinese automobile industry manufacturers, marketers, and policymakers will allow them to develop strategies that align with the changing consumption patterns of environmentally conscious consumers. As demonstrated by the studies by Paul, Modi, and Patel [13] and Varshneya, Pandey, and Das [14], the research also adds industry-specific insights to the knowledge already available on green consumer behavior, further advancing the academic discourse. By filling the above gaps, the study offers the following research objectives:

1. To examine the impact of functional, social, and emotional values on attitudes toward environmental issues in the Chinese automobile industry.
2. To test the impact of attitude towards environmental issues on green purchase intention in the Chinese automobile industry.
3. To test the moderating role of green product quality between attitude towards environmental issues and green purchase intention in the Chinese automobile industry.

Literature Review and Theoretical Framework

Theory of Consumption Values (TCV)

According to Sheth, Newman, and Gross's [15] Theory of Consumption Values (TCV), a consumer's choice is determined by various consumption values that impact their decision-making process. These three values – emotional, social, and functional – provide a framework for comprehending how customers behave when buying environmentally friendly goods. Intentions to make green purchases are significantly predicted by the functional value of a product's perceived quality and usefulness [9-11]. Research has shown that functional value and consumers' attitudes toward environmental issues are positively correlated, which increases their intentions to make green purchases [7, 8, 12]. Examples of these studies are those conducted by Lin and Huang [2] and Wang, Ma, and Bai [16]. This is especially true for the Chinese car industry, where functionality includes the vehicle's performance and its environmental effect. Functional value-driven buyers are likelier to select environmentally conscious automobiles with a smaller environmental impact and improved operational efficiency [3].

In contrast, a consumer's perceived social gains or losses from using a product are reflected in its social value. According to studies by Amin and Tarun [1] and Cheung and To [4], social value greatly influences consumer behavior. Having green products can improve one's social standing. Social value may be significant in the Chinese car market because consumers want to appear ethical and environmentally conscious

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to their peers, influencing their propensity to make green purchases.

Finally, the affective states or feelings a product evokes are the source of its emotional value. Research by Khan and Mohsin [7] and Sharma and Foropon [8] shows that emotional value can be a potent force behind consumer behavior. A consumer's attitude toward environmental issues and, consequently, their intention to purchase green products can be reinforced by the positive emotions associated with supporting environmental conservation by purchasing eco-friendly vehicles [13, 14]. In consumer markets like China, where environmental awareness is rising and emotional appeal significantly impacts purchase decisions, this affective dimension is becoming increasingly important. Therefore, this framework serves as a thorough lens through which to analyze and forecast consumer behavior in the market for green products.

Theory of Consumption Values (TCV) and Attitude Towards Environmental Issues

The Theory of Consumption Values posits that functional, social, and emotional values influence consumer choice. Functional value assesses the practical utility and quality [2], social value reflects the perceived societal benefits or status from product use [1], and emotional value relates to the affective responses elicited by a product [7]. These dimensions collectively guide consumers' attitudes and behaviors toward green products, including those in the automotive industry [6]. Functional value heavily influences consumer decision-making, particularly in the auto sector. According to Lin and Huang [2], functional value – including the usefulness and perceived quality of eco-friendly vehicles – significantly impacts consumers' feelings about environmental issues. Customers' awareness of environmental problems can be raised by the clear connection between a product's functional features – like reduced emissions, fuel economy, and overall environmental impact – and its overall environmental impact. Wang, Ma, and Bai [16] add that an understanding of the practical advantages of eco-friendly cars is correlated with a positive outlook on environmental issues, which lends more credence to this assertion. This information suggests that functional value positively impacts environmental attitudes in the automotive industry by enabling consumers to make decisions that align with their environmental values.

A vehicle's environmental impact and efficiency are frequently linked to its functional value within the automotive sector. Consumers' pro-environmental attitudes are reinforced when they recognize the observable advantages of green vehicles, like cost savings and less ecological impact, according to studies by Mohd Suki [6] and Sharma and Foropon [8]. Furthermore, as Cheung and To [4] point out, the product's contribution to greater environmental sustainability is just as much a part of its functional value as its immediate advantages. Based on the pieces of evidence found in the literature, the study offers a research hypothesis:

H1. Functional value significantly and positively influences attitudes toward environmental issues in the automobile industry.

The social status or prestige that comes with using a product, or social value, is a significant factor in determining how people feel about environmental issues. According to Amin and Tarun [1], eco-friendly products make a social statement about one's environmental commitment. This underscores the significance of social values in shaping consumer behavior. Varshneya, Pandey, and Das [14] point out that this is especially true in the automotive sector, where owning a green car can be interpreted as a sign of social standing and environmental consciousness. As a result, consumers' attitudes toward environmental issues are directly impacted by the social value of green vehicles, which helps create a community of environmentally conscious people.

The work of Chekima et al. [17] and Liao, Wu, and Pham [5], who found that social influence and the desire to conform to perceived social norms motivate consumers to adopt green automobiles, further strengthens the case for social values' influence on environmental attitudes. Social value can significantly impact consumers' feelings about environmental issues in collectivist societies like China, where community perception is highly valued. The social consequences of their decisions may influence customers in addition to their personal beliefs, which could result in an increased awareness of environmental issues and a tendency to adopt eco-friendly practices. Therefore, the study offers a research hypothesis:

H2. Social value significantly and positively influences attitudes towards environmental issues in the automobile industry.

Promoting a positive attitude toward environmental issues requires emotional value, which captures product use's feelings and psychological advantages. According to Khan and Mohsin [7], consumers' attitudes can be significantly influenced by the sense of fulfillment they get from using green products and helping to preserve the environment. According to Woo and Kim [12], driving a green vehicle can positively impact an individual's attitude towards environmental sustainability as it represents a personal commitment to environmental stewardship.

An important indicator of consumer attitudes toward environmental issues is the emotional bond they form with eco-friendly products, such as cars. According to Moslehpour et al. [18], emotional value can give rise to a strong sense of personal responsibility and environmental concern. Customers' environmental attitudes tend to get stronger, and they become more deeply committed to environmental issues when they emotionally invest in the values embodied by green vehicles. Ahmad and Zhang [19] found that consumers'

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propensity to support and participate in environmental causes is amplified by the emotional appeal of green products, including the positive feelings associated with their use. Thus, the study develops a research hypothesis:

H3. Emotional value significantly and positively influences attitudes toward environmental issues in the automobile industry.

Attitude Towards Environmental Issues and Green Purchase Intention

Environmental attitudes strongly influence green purchase intentions, especially in the auto industry. According to research, including that by Cheung and To [4], a consumer's environmental awareness can increase their likelihood of buying green cars. This positive attitude often reflects one's environmental concern and belief in sustainable practices, influencing purchase decisions. Using a meta-analytic path analysis, Zaremohzzabieh et al. [20] show that consumers' environmental attitudes strongly affect their green purchasing intentions. These studies suggest that a pro-environmental mindset predicts green purchase intentions proactively.

Han's [21] Theory of Green Purchase Behavior (TGPB) supports the hypothesis that environmental attitudes strongly influence green purchase intentions. Attitudes drive sustainable consumption. In the auto industry, where environmental impact is essential, environmentally conscious consumers are more likely to prioritize green features. Jiang and Kim [22] found that environmental conservation attitudes strongly predicted customers' intentions to choose green hotels in the hospitality industry. Based on the pieces of evidence in the literature, a research hypothesis is developed:

H4. Attitude towards environmental issues significantly and positively influences green purchase intention in the automobile industry.

Moderating the Role of Green Product Quality between Attitude Towards Environmental Issues and Green Purchase Intention

In the auto industry, the role of green product quality as a moderator of environmental attitude and purchase intention is crucial. Mohd Suki [6] found that high-quality green products boost environmental attitudes and purchase intentions. When green vehicles are guaranteed to perform and last, consumers are more likely to buy them, which aligns their pro-environmental views with their purchases. According to Cheung and To [4], perceived quality can increase the predictive power of environmental attitudes on green purchase intentions by reinforcing consumers' belief that they are making a good, environmentally friendly investment. The perceived quality of green products can also reassure consumers that they will keep traditional product attributes while choosing green. Wang, Ma, and Bai [16] found that consumers are more likely to buy high-quality green products due to their environmental attitudes. This suggests that quality assurance may encourage environmentally conscious consumers to buy green. De Silva, Wang, and Kuah [11] confirm that product quality, especially in green technologies, determines consumers' environmental attitudes and purchase behavior.

According to studies, green product quality moderates consumer behavior across cultures and regions. Liao, Wu, and Pham [5] note that green product quality strongly influences the relationship between environmental attitudes and purchasing intentions in markets where environmental issues are becoming more important. Quality bridges ethical concerns and practical consumer needs, preventing the latter from overshadowing the former in purchasing. Moslehpour et al. [18] suggest that the perceived effectiveness and reliability of green products can boost or reduce the impact of environmental attitudes on purchase intentions.

According to the literature synthesis, green product quality influences purchase intentions in conjunction with brand reputation and consumer knowledge. Khan and Mohsin [7] found that a reputable brand that sells high-quality green products can increase consumers' trust and willingness to buy based on their environmental concerns. By following the research pieces of evidence, the study supports a research hypothesis:

H5. Green product quality significantly and positively moderates the relationship between attitude towards environmental issues and green purchase intention in the automobile industry.

With the help of green product quality acting as a moderator, the model that is being presented shows the path from consumption values (functional, social, and emotional) to green purchase intention. It implies that a consumer's intention to buy green products precedes their attitude toward environmental issues, which these values shape. The model suggests that the perceived quality of green products on the market influences the relationship between environmental attitude and purchase intention.

Materials and Methods

Research Design

This quantitative study uses a survey questionnaire to test the hypothesized relationships between consumption values, environmental attitudes, and green purchase intentions moderated by green product quality. The literature supports this approach because it allows statistical analysis to test the model and hypotheses in a structured framework [13]. Survey questionnaires are widely used to collect the opinions and intentions of a large sample, providing a robust data set that improves generalizability [23]. The study

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uses a structured questionnaire to quantify the strength of construct relationships, following similar research [5, 18]. Therefore, the study follows the principles of a quantitative research design by using a positivism paradigm.

Data Collection Procedures

The present study's data collection procedure was methodically designed to guarantee the acquisition of pertinent and superior-quality data from experts deeply involved in the environmental sustainability standards of the automotive industry in China, which deals with green energy. Google Drive was used to create the survey questionnaire to make distribution and collection more accessible. The efficiency and accessibility of this digital tool made it possible for respondents to complete the survey whenever it was convenient [24]. Aithal & Aithal [24] support this approach, effectively reaching targeted professional groups within particular industries.

Product, quality, and supply chain managers from a targeted sample of Chinese automobiles were given access to the survey. As suggested by Taherdoost [25], for studies requiring informed perspectives on industry-specific practices, purposeful sampling was used to make sure that respondents were knowledgeable and actively involved in decision-making processes related to green products. Prominent industry players like BYD, Geely, Great Wall Motors, Chery Automobile, SAIC Motor, Dongfeng Motor, FAW Group, BAIC Group, Guangzhou Automobile Group, NIO, XPeng, Li Auto, Changan Automobile, Hozon Auto, Aiways, Weltmeister, Hawtai Motor, Zotye Auto, JAC Motors, and King Long were among the companies chosen for the survey. These businesses were picked because they play a big part in the Chinese automobile industry, which deals with green energy and influences environmental sustainability through innovation and high-quality products.

To ensure the survey got to the right people, the managers' contact information was gathered from industry networking sites and corporate directories of the companies. To maximize response rates, follow-up reminders were sent out periodically throughout the year after the initial invitations were sent out at the start of 2023. This strategy is in line with the suggestions made by Ahmad and Zhang [19] for attaining adequate response rates in expert surveys, guaranteeing a sample that is representative of the intended audience. The study accommodated managers' hectic schedules by distributing the reminders over a longer period, which is necessary to gather various insights over time, as suggested by Sharma and Foropon [8].

The decision to focus on the automotive sector and specifically target managers within this industry stems from the strategic significance of these professionals in influencing their organizations' quality initiatives and green product strategies. According to Han [21], managers responsible for supply chain, quality, and product development directly impact how green practices and products are developed and implemented. Their observations are significant for comprehending how organizational procedures interact with intentions to make green purchases. Targeting this industry in China is especially important because of the nation's large global automotive manufacturing footprint and the growing environmental concerns that go hand in hand with this industry's growth. Moslehpour et al. [18] note that this makes China a valuable context for researching green consumption habits. The study sent 455 survey links to the managers, but by the end of November 2023, the study had obtained 278 surveys filled out by the managers. Therefore, the response rate was approximately 61.1%.

Operationalization of the Constructs

The questionnaire items used in our survey were all adapted from previous research. We adapted items with minor modifications to ensure their relevance to the automobile industry. Questionnaire items were translated into Mandarin from their original English so they could be understood by Chinese participants. We employed the back-to-back translation technique to achieve this [26]. In total, the survey comprised 32 questionnaire items. These were structured as follows: 8 items assessed functional value; 8 items assessed social value; 3 items assessed emotional value; 3 items, adapted from Amin & Tarun [1], assessed green purchase intentions; 7 items, adapted from Roh et al. [27], assessed attitude towards environmental issues; and 3 items, adapted from Cheung & To [4], assessed green product quality. All items offered a 5-point Likert response scale ranging from 1-strongly disagree to 5-strongly agree. Analysis of internal consistency using Cronbach's alpha values showed all measurement constructs to be higher than 0.70, indicating acceptable reliability.

Data Analysis

For the demographic analysis, the study used SPSS software. However, to test the research hypotheses, the study used Smart PLS 4 software. In modern statistical analysis, using Smart PLS 4 software to test research hypotheses makes sense, especially for complex models frequently used in behavioral research. As discussed by Ramayah et al. [28] and Hair et al. [29], the strength of Partial Least Squares Structural Equation Modeling (PLS-SEM) is its ability to handle small to medium sample sizes and its robustness against violations of normal distribution. Because PLS-SEM and, by extension, Smart PLS 4 allow for assessing complex relationships between latent constructs with minimal constraints on measurement scales, they are particularly well-suited for exploratory research to develop theories. The software is an excellent option for verifying the suggested theoretical framework and testing

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the study's hypotheses because of its intuitive interface and sophisticated modeling features, which enable the examination of direct and indirect effects.

Moreover, Smart PLS 4 is acknowledged for its effectiveness in evaluating the validity and reliability of measurement models in studies. Sarstedt, Ringle, and Hair [30] draw attention to its advanced algorithms that yield precise estimates for discriminant validity and composite reliability, two crucial elements in verifying the integrity of the constructs employed in a study. The heterotrait-monotrait (HTMT) ratio, which is smoothly incorporated into the Smart PLS 4 software, is suggested as a criterion for evaluating discriminant validity by Henseler, Ringle, and Sarstedt [31]. This strengthens the validity of the research findings by allowing researchers to ensure that their measurement models appropriately represent the constructs they are meant to measure. With these features, Smart PLS 4 is a valuable and effective tool for evaluating the data gathered and offering solid empirical support for the study's research hypotheses.

Results

Demographic Information

Table 1, which presents the participants' demographic information, addresses several notable trends and characteristics. The distribution across business types shows a significant lean towards the Services sector, comprising 64.4% of the participants, as opposed to 35.6% in Manufacturing. This indicates a predominant representation from the service industry, suggesting the need for further investigation into whether these trends reflect the wider industry or are specific to the sample. In terms of gender, there is a pronounced disparity, with males representing 89.2% of the participants and females only 10.8%. This gender imbalance raises questions about inclusivity and diversity within industries, particularly in decision-making and managerial roles.

Analyzing the position levels, a majority (66.5%) of the participants are Production Managers, followed by Quality Managers (23.7%) and Supply Chain Managers (9.7%). This suggests that the sample is heavily weighted toward those in production management roles, which could influence the perspectives and experiences reported in the study. Regarding overall working experience, there is a fairly even distribution among those with 4-6 years (34.5%) and more than 6 years (44.2%) of experience, indicating a seasoned group of professionals. The green manufacturing experience follows a similar trend, with a notable concentration of participants having 1-3 years (37.1%) and 4-6 years (32.4%) of experience in this area, highlighting a growing engagement in green practices. Finally, participants' educational background shows a dominant presence of individuals with 16 years of education (69.4%), suggesting a highly educated sample that could impact their awareness and implementation of industry practices. This comprehensive demographic breakdown provides crucial insights into the background of the participants, which is vital for understanding the context of their responses and the generalizability of the study's findings.

Table 1. Demographic information.

Variable	Categories	Frequency	Percent
Business Type			
	Manufacturing	99	35.6
	Services	179	64.4
Gender			
	Male	248	89.2
	Female	30	10.8
Position Level			
	Quality Manager	66	23.7
	Production Manager	185	66.5
	Supply Chain Manager	27	9.7
Overall Working Experience			
	Less than 1 Year	11	4.0
	1 - 3 Years	48	17.3
	4 - 6 Years	96	34.5
	More than 6 Years	123	44.2
Green Manufacturing Exp.			
	Less than 1 Year	19	6.8
	1 - 3 Years	103	37.1
	4 - 6 Years	90	32.4
	More than 6 Years	66	23.7
Education			
	12 Years	4	1.4
	14 Years	45	16.2
	16 Years	193	69.4
	18 Years and More	36	12.9

Assessment of Model Validity and Reliability

To determine whether the measurement model is well fitted, evaluating the convergent validity and reliability of structural equation modeling is essential. The Average Variance Extracted (AVE) and factor loadings are usually examined to assess the convergent

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validity. To establish adequate convergent validity, factor loadings should be above the 0.7 threshold, and AVE values should exceed 0.5, according to Sarstedt, Ringle, and Hair [30] and Henseler, Ringle, and Sarstedt [31]. Cronbach's Alpha and Composite Reliability are used to assess reliability; recommended threshold values for both are above 0.7, which indicates acceptable internal consistency for Cronbach's Alpha, and above 0.7 for Composite Reliability, which confirms the composite reliability of the constructs [19].

All of the constructs in Table 2, except "Green product quality," surpass the Cronbach's Alpha and Composite Reliability thresholds, indicating satisfactory reliability. The majority of constructs for convergent validity show factor loadings above the benchmark of 0.7; "Emotional value" and "Green purchase intention," in particular, have high loadings and AVEs that exceed the recommended threshold of 0.5, indicating robust convergent validity. On the other hand, the AVE for "Functional value" is 0.568, slightly above the cutoff, suggesting borderline convergent validity. The construct 'Green product quality' has a reliability score of 0.736, marginally above the acceptance level. However, its AVE of 0.651 is well above the necessary threshold, indicating convergent validity even with the lower reliability score.

The 'Functional value' and 'Green product quality' constructs have some items below 0.7, which have been removed because of low factor loadings. This is a common method used to improve the psychometric qualities of the model. These items were either inconsistent with the other items in the scale or needed to sufficiently contribute to the constructs they were meant to measure, as evidenced by their exclusion from the final model. Consequently, removing items with low factor loadings can be interpreted as an attempt to improve the model and guarantee that each construct is measured precisely, even though the model's overall reliability and convergent validity are within allowable bounds. This refinement process complies with the suggestions made by Sarstedt, Ringle, and Hair [30], who support eliminating items that do not match the predetermined standards to preserve the measurement model's integrity. Finally, Table 2 confirms the validity and reliability.

By measuring how a construct correlates with other constructs in the model, discriminant validity evaluates how different a construct is from other constructs. Henseler et al. [31] state that inter-construct correlations should be less than 0.85 to establish discriminant validity. According to the data, the relationship between "Green product quality" and "Green purchase intention" has the highest correlation, 0.812, below the 0.85 threshold. This implies that every construct is adequately unique and reflects a distinct facet of the model. The uniqueness of the interaction term 'Green product quality x Attitude towards environmental issues' is further supported by its exceptionally low correlation (0.224) with other constructs. Therefore, according to the criteria of Henseler et al. [31], the model exhibits good discriminant validity, with all construct correlations staying well below the 0.90 cutoff, indicating that the constructs are empirically distinct.

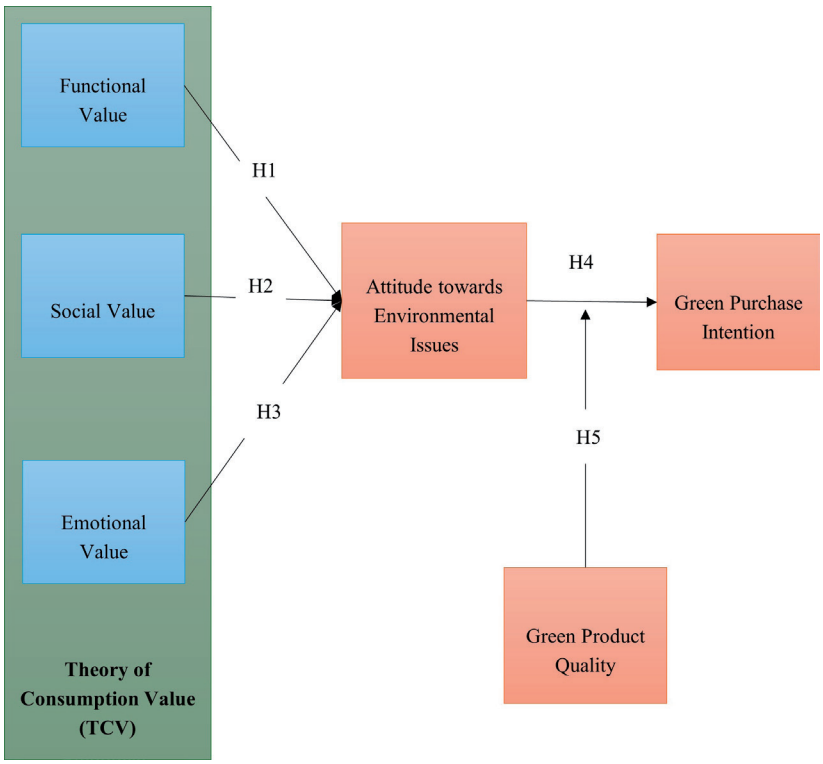

Fig. 1. Theoretical framework.

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Table 2. Convergent validity and reliability.

Construct	Item	Factor Loading	Cronbach's alpha	Composite Reliability	AVE
Attitude towards environmental issues	ATT4	0.782	.809	0.875	0.636
	ATT5	0.840			
	ATT6	0.745			
	ATT7	0.820			
Functional value	FV2	0.747	.811	0.868	0.568
	FV4	0.763			
	FV5	0.736			
	FV6	0.748			
	FV8	0.774			
Emotional value	EV1	0.899	.878	0.925	0.803
	EV2	0.892			
	EV3	0.898			
	FV2	0.747	.811	0.868	0.568
	FV4	0.763			
	FV5	0.736			
	FV6	0.748			
	FV8	0.774			
Green product quality	GPI1	0.796	.736	0.848	0.651
	GPI2	0.894			
	GPI3	0.900			
Green purchase intention	GPQ1	0.819	.831	0.899	0.748
	GPQ2	0.729			
	GPQ3	0.866			
Social value	SV1	0.727	.867	0.900	0.602
	SV2	0.723			
	SV3	0.791			
	SV5	0.789			
	SV6	0.814			
	SV7	0.805			

Table 3. Discriminant validity.

Constructs	1	2	3	4	5	6
Attitude towards environmental issues						
Emotional value	0.549					
Functional value	0.709	0.590				
Green product quality	0.716	0.576	0.704			
Green purchase intention	0.683	0.642	0.625	0.812		
Social value	0.664	0.605	0.784	0.698	0.638	
Green product quality x attitude towards environmental issues	0.224	0.300	0.228	0.257	0.224	0.275

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Assessment of Path Model

By testing the research hypotheses, the study ran the bootstrapping technique with 5000 sub-samples. The study applied a 5% significance level with a 95% confidence interval to test the accepted values for the research hypotheses. Table 4 and Fig. 2 show the results of the research hypotheses. The statistical results of the path analysis table shed light on the connections between different constructs and the research questions being studied. About Hypothesis 1 (H1), the beta value is 0.331, the t-value is 5.438, and the p-value is 0.000 for the path from "Functional value" to "Attitude towards environmental issues." We accept the hypothesis that attitude toward environmental issues is positively influenced by functional value since the p-value is less than the traditional threshold of 0.05. This acceptance shows a robust and statistically significant relationship, indicating that the products' usefulness will likely improve people's attitudes toward the environment. Hypothesis 2 (H2), with a beta value of 0.249, a t-value of 2.811, and a p-value of 0.005, suggests that "Social value" positively affects "Attitude toward environmental issues." The hypothesis is accepted because the p-value is less than 0.05 and indicates that social value is a significant predictor of environmental attitudes. This suggests that social ramifications and the status of environmental concerns play a significant role in influencing people's attitudes.

The relationship between "Emotional value" and "Attitude towards environmental issues" for Hypothesis 3 (H3) has a beta value of 0.171, a t-value of 2.869, and a p-value of 0.004, which indicates that the hypothesis is accepted. This finding implies that attitudes are shaped by emotions related to environmental issues, albeit to a lesser extent than by functional or social values. There is a significant positive relationship between the two variables, 'Attitude towards environmental issues' and 'Green purchase intention,' as indicated by the beta value of 0.277, t-value of 5.409, and p-value of 0.000. These results support the acceptance of hypothesis 4. With a t-value of 8.661 and a p-value of 0.000, the second part of the hypothesis, "Green product quality," affecting "Green purchase intention," has the strongest beta value of 0.494 among the hypotheses and leads to acceptance. These results imply that strong

Table 4. Path analysis.

Hypothesis		Beta	*t*	*p*
H1	Functional value -> Attitude towards environmental issues	0.331	5.438	< .001
H2	Social value -> Attitude towards environmental issues	0.249	2.811	.005
H3	Emotional value -> Attitude towards environmental issues	0.171	2.869	.004
H4	Attitude towards environmental issues -> Green purchase intention	0.277	5.409	< .001
	Green product quality -> Green purchase intention	0.494	8.661	< .001
H5	Green product quality x Attitude towards environmental issues -> Green purchase intention	-0.031	0.897	.369

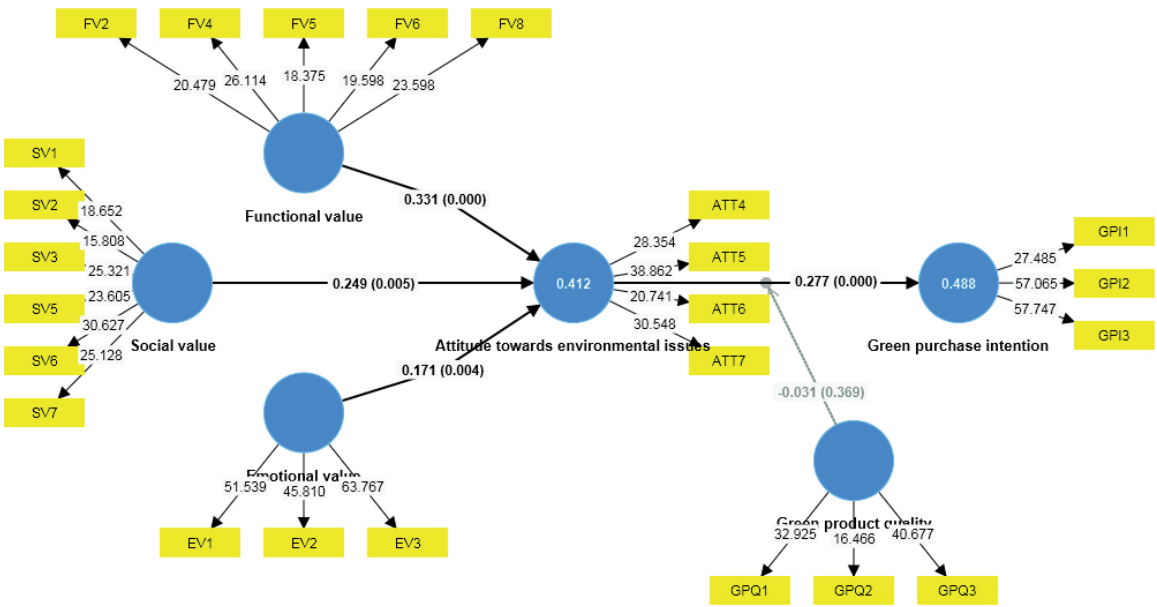

Fig. 2. Structural Equation Modeling (SEM).

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and significant predictors of green purchase intentions include a positive attitude toward the environment and the perceived quality of green products.

Finally, Hypothesis 5 (H5) shows a negative beta value of -0.031, a t-value of 0.897, and a p-value of 0.369. It investigates the interaction effect of "Green product quality" and "Attitude towards environmental issues" on "Green purchase intention." The hypothesis is rejected because the interaction between environmental attitude and green product quality does not significantly affect green purchase intentions, as evidenced by a p-value higher than the 0.05 threshold. This suggests that more than the individual effects of product quality and environmental attitude alone are insufficient to improve the green purchase intention prediction.

R-square values show how much variance in dependent variables is explained by model-independent variables. For 'Attitude towards environmental issues,' the R-square value is 0.412, with an adjusted R-square of 0.406, suggesting that the model, which predicts functional value, social value, and emotional value, can explain 41% of environmental attitudes. Also, 'Green purchase intention' has an R-square of 0.488 and an adjusted R-square of 0.483, indicating that the model explains nearly 49% of the variance in green purchase intentions, including the predictors' environmental attitudes, green product quality, and their interaction. These figures show moderate to high model fitness, indicating that the predictor constructs significantly predict the dependent variables and provide a robust explanation of the phenomena being studied. Considering the number of predictors, the consistency of the R-square and adjusted R-square values confirms the model's reliability. The model fits well, capturing constructive relationships.

Discussion

The study has been conducted in the Chinese automobile industry to examine the use of green vehicles (energy) to make the environment greener. The research findings about how environmental attitudes and intentions to make green purchases are influenced by functional, social, and emotional values align with several previous studies published in the literature. A theory of consumption values put forth by Lin and Huang [2] and Sheth, Newman, and Gross [15] helps us understand why consumers make green purchases. The functional, social, and emotional values in this study's prediction of attitudes toward environmental issues have positive beta values and significant t-values, which support the findings of these previous studies and demonstrate that these values are, in fact, significant predictors of environmental attitudes. This is consistent with the theory of consumption values.

The mediating function of green trust in the relationship between consumption values and the intention to make green purchases was emphasized by Amin and Tarun [1]. Although the current study does not measure green trust directly, the strong paths from values to purchase intention implies that such an intervening mechanism may exist and be significant. This is because consumers are more likely to purchase green products if they perceive them to have functional, social, and emotional benefits. Researchers Liao, Wu, and Pham [5] and Cheung and To [4] looked into how green marketing and psychological advantages affected customer attitudes and values in a moderating way. The strong relationships indicate that consumers' perceptions and values significantly impact their intentions to make green purchases, even though the current study does not explicitly measure these moderating effects. This supports the idea that marketing initiatives and psychological advantages strengthen these bonds even more.

Therefore, the interaction term (Green product quality x Attitude towards environmental issues) has a negative beta value, indicating that the combined influence of product quality and environmental attitudes does not significantly predict the intention to make green purchases. This finding could be in contrast to research conducted by Roh et al. [27] and Mohd Suki [6], who found that perceived product quality and knowledge significantly influence green purchase intentions. This discrepancy may indicate that the context affects how these variables interact differently or that the combined effects of quality and Attitude could be stronger. This shows the complexity of consumer decision-making processes, as emphasized in the large body of literature on green purchase behavior, and offers an intriguing direction for future research.

Managerial and Practical Implications

The research's conclusions have important managerial and practical ramifications for China's auto sector, especially as the nation pushes for wider use of electric vehicles (EVs) to lower carbon emissions and advance environmental sustainability. Given the substantial influence of functional value on attitudes regarding environmental issues, it is recommended that manufacturers highlight the practical advantages of electric vehicles (EVs), including fuel economy, reduced maintenance expenses, and the ease of charging at home or work. Evidence suggests that concerns about practical factors such as cost and maintenance are the main obstacles to EV uptake [32]. Manufacturers can challenge these concerns, improve consumer attitudes toward EVs, and increase market penetration by clearly outlining functional benefits.

Given the impact of social values on attitudes toward the environment, marketing campaigns should emphasize the social benefits of owning an electric vehicle. Social awareness is a key aspect of broader ecological awareness [33]. Manufacturers should present EVs as a representation of a popular, eco-friendly modern lifestyle, appealing to the growing consumer

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segment that takes pride in making environmentally conscious decisions since consumers are influenced by how others perceive their choices. In China, those who consume higher amounts of media are more likely to engage in environmental protection behaviors [34]. As such, EV companies should collaborate with well-known figures and social media influencers who support eco-friendly living to strengthen their message.

According to the concept of emotional value, automakers ought to pay attention to the positive effects that owning an electric vehicle (EV) can provide. This could include the joy of using cutting-edge technology to create a quiet, smooth, and environmentally friendly vehicle or the personal fulfillment of protecting the environment. Research has shown that positive anticipated emotion is a strong predictor of EV purchase intentions [35]. Consumers' desire to contribute to the solution of environmental issues will be satisfied by emotional appeals in advertising, strengthening their emotional bond with the company and its goods.

Vehicle manufacturers should invest in green branding and EV quality assurance because attitudes toward environmental issues and green product quality strongly predict intentions to make green purchases. Maintaining high performance and dependability standards boost product confidence among consumers. Furthermore, consumer attitudes and intentions to make green purchases can be further strengthened by educational programs that increase knowledge of the environmental impact of gasoline-powered vehicles relative to electric vehicles. Companies can use these insights to gain a competitive edge in the rapidly expanding electric vehicle (EV) sector, as the Chinese market is changing rapidly.

The findings might also inspire policymakers seeking to promote EV uptake. Top-down investment in EV infrastructure and technology is an effective way of encouraging society-wide adoption of EVs [36]. Creating widespread, easily accessible infrastructure for charging EVs can enhance their functional value by lowering range anxiety and increasing the allure of owning an EV. Policies that consider factors such as the functional, social, and emotional value of EV use may win more favor among the public, leading to increased EV purchases and accelerating a transition away from petrol-powered transport.

Limitations and Future Directions

A limitation of the research is that it focuses on the Chinese automotive sector, which, although offering significant perspectives, might not encompass the subtleties of worldwide consumer conduct concerning electric cars (EVs). Regional cultural, economic, and policy variations can significantly impact customer attitudes and purchase intentions. Consequently, considering these regional variances is necessary for the results to be generalizable to other contexts. Furthermore, the study focuses mainly on the direct connections between consumption values and intentions to make green purchases, possibly ignoring other significant elements like government incentives, the accessibility of infrastructure for charging, and technological innovation in consumer decision-making. These variables may be included in future studies to offer a more thorough understanding of the elements influencing the adoption of EVs. Analyzing EV customers' post-purchase behavior and long-term satisfaction may also shed light on the viability of the stated purchase intentions and the actual environmental effects of switching to EVs.

Future research in this area would benefit from longitudinal studies that track changes in consumer behavior over time and in response to EV market maturation and technological advancement. Indeed, studies that examine the interplay between personal values and societal trends are much needed to clarify the intricate dynamics of the ongoing shift to more environmentally friendly automobiles. In addition, testing whether the identified associations extend to real-world purchase behavior would be a valuable next step for understanding how closely theory aligns with action. Policymakers and industry stakeholders should incorporate variables related to values and intentions in their evaluations of interventions and educational initiatives designed to influence consumer attitudes and behaviors. To extend the validity of our findings, comparative research across nations or regions is needed. This could offer novel perspectives on best practices for adopting eco-friendly automobiles and test the efficacy of diverse approaches to encouraging sustainable consumption.

Conclusion

The study effectively demonstrates the importance of various factors, such as functional, social, and emotional values, in shaping attitudes toward environmental issues and influencing green purchase intentions. The findings confirm that both product functionality and social implications are crucial in positively influencing consumers' attitudes toward environmental issues, with emotional value also playing a role, albeit to a lesser extent. Furthermore, the strong positive relationship between attitude toward environmental issues and green purchase intention, as well as the significant impact of perceived green product quality on purchase intentions, emphasize the significance of these constructs in encouraging environmentally responsible consumer behavior. Increasing the functional, social, and emotional value of green products can be an effective strategy for businesses seeking to promote environmental sustainability through consumer purchasing decisions.

However, the study emphasizes the complexities of the relationship between green product quality, environmental attitudes, and green purchasing intentions. The interaction effect of green product

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quality and environmental attitudes on green purchase intentions was found to be insignificant, implying that combining high-quality green products with positive environmental attitudes only sometimes results in stronger purchase intentions. This suggests that while the quality of green products and positive environmental attitudes are essential, they may not work together to increase green purchase intentions as previously thought. As a result, marketers and policymakers should focus on improving the direct influences of product quality and environmental attitudes while investigating additional factors that could further motivate consumers to make green purchases. This approach will be critical for encouraging consumers to adopt a more sustainable consumption pattern, contributing to overall environmental sustainability objectives.

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Conflict of Interest

The authors declare no conflict of interest.

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