

**THE IMPACT MECHANISM OF SOCIAL RESPONSIBILITY  
ON CONSUMERS' INTENTION TO PURCHASE ECO-  
FRIENDLY HOME APPLIANCES UNDER THE MEDIATING  
ROLE OF PURCHASE MOTIVATION: AN EMPIRICAL CASE  
FROM CHINA**

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**Abstract**

An increasing number of consumers consciously boycott consumption behaviors that harm the ecological environment, considering the overall social benefits, and strive to contribute to public interest, social equity, and ecological balance. However, due to a lack of research, the impact mechanism of consumer social responsibility on the purchase of Eco-Friendly Home Appliances remains unclear, especially in China. The paper first introduces the current status of Eco-Friendly Home Appliances and, based on literature review results, elaborates on consumer social responsibility (SR), purchase motivation (PM), and purchase intention (PI). Then, based on theoretical and empirical literature reviews, it proposes a theoretical framework and develops research hypotheses. Based on the actual situation of the survey, the paper describes the quantitative research tools, data collection, and sample situation. Finally, the paper analyzes the rationality, reliability, and validity of the sample data, and further conducts confirmatory factor analysis and general hypothesis estimation of the structural equation model. The data analysis and research tools used are SPSS software and AMOS software. The conclusion is that consumer social responsibility has a significant impact on purchase motivation and purchase intention. Purchase motivation also positively affects purchase intention. Based on a standardized calculation process, the paper infers that purchase motivation plays a partial mediating role between consumer social responsibility and the intention to purchase Eco-Friendly Home Appliances. The study is an empirical study based on primary data, surveying 675 consumers in Anhui, China, obtaining relevant information on their

intention to purchase Eco-Friendly Home Appliances. The results of the study provide empirical evidence for related research in the marketing field, especially in the home appliance industry and environmental protection sector. The findings offer practical experience for home appliance companies in developing eco-friendly products. More importantly, The study will stimulate people's thinking about environmental protection and personal social responsibility, thereby promoting the home appliance industry in China and the world towards green and sustainable development, ultimately contributing to global ecological protection efforts.

**Keywords:** Eco-Friendly Home Appliances; Social Responsibility; Purchase Motivation; Purchase Intention

**Funding:** Scientific Research Project of Hefei Technology College (2024SKB08).

### 1 Introduce

In recent decades, the leapfrogging progress of industrial technology has driven rapid economic growth globally, making household appliances essential items in people's lives[1]. With the rise of intelligent technology, today, home appliances, while bringing technological convenience to human life, also pose challenges to the ecological environment, such as the intensification of climate warming, frequent environmental pollution issues, and the increasing risk of species extinction[2]. The United Nations' '2025 Sustainable Development Goals Report' indicates that the worsening climate and the lack of safe drinking water and sanitation services for billions of people are among the pressing issues[4]. The world is on the brink of a climate disaster, and billions of people are already feeling its consequences[3]. In the face of these challenges, what proactive actions should be taken to improve the human living environment has become a critical issue that needs urgent reflection and resolution.

The United Nations pointed out in the '2022 Sustainable Development Goals Report' that intersecting issues such as wars, conflicts, viral pandemics, and climate crises have cascading effects on human nutrition, health, education, and living environments[3]. However, the '2025 Sustainable Development Goals Report' also shows that significant progress has been made in sustainable development goals in areas such as public health, education, energy, and digital connectivity, with a marked improvement in global ecosystem protection levels[4]. How humans can achieve 'harmonious coexistence' and 'sustainable development' with the natural environment is a hot topic of academic discussion and a focal point of widespread societal concern. Against this backdrop, exploring the impact of consumers' sense of social responsibility on their intention to purchase eco-friendly products is of critical significance.

To deeply explore the impact of consumers' sense of social responsibility on their intention to purchase eco-friendly home appliances, the paper proposes a theoretical framework and a

series of hypotheses based on a thorough review of relevant literature. Based on the empirical research results of many scholars, the paper carefully designs research tools, including survey questionnaires and specific survey work and analysis processes. The study targets consumers in Anhui Province, China, collecting their genuine thoughts on purchasing eco-friendly appliances through questionnaire surveys, and conducts in-depth analysis of primary data. The research findings will provide valuable empirical experience and reference suggestions for the field of environmental research, consumer-related studies, and household appliance enterprises.

## **2 Literature Review**

### **2.1 Eco-Friendly Home Appliances**

To combat the continuously deteriorating ecological environment and to meet the growing public demand for eco-friendly products, numerous production sectors have introduced green products[5]. Green products are considered harmless to human health and non-threatening to the human living environment, thus, eco-friendly home appliances are one of the representatives of green products. Currently, eco-friendly home appliances exhibit resistance characteristics in issues such as resource waste, noise pollution, and waste emissions. Other studies also found that eco-friendly home appliances follow green supply chain rules during the manufacturing process and implement recycling systems that comply with safety and health standards[6]. Eco-friendly household appliances demonstrate environmental friendliness throughout their entire lifecycle[7]. As one of the energy-efficient appliances, eco-friendly home appliances are considered to be high-value products in the future. Energy-saving appliances and eco-friendly appliances are currently popular eco-friendly home appliances, prominently showcasing low energy consumption and low pollution characteristics. Energy-saving appliances mainly highlight the advantage of reducing energy consumption. Eco-friendly appliances typically minimize threats to human health and the ecological environment during use. In the Chinese market, eco-friendly home appliances are widely available and cover various essential household appliances needed in daily life[8], such as energy-saving refrigerators, CFC-free air conditioners, and low-noise washing machines.

Currently, over 50 countries and regions worldwide adopt the 'eco-label' system, which covers a range of daily consumer goods. The 'green' attributes of eco-friendly home appliances are often presented to the public through eco-labels. Studies show that promotional activities initiated by governments, enterprises, and non-profit organizations help people understand the environmental value of green household appliances[9]. Other research indicates that consumers' trust in eco-labels[10][11], their recognition of brands[12], and their belief in corporate social responsibility can influence their intention to purchase eco-friendly appliances[13]. Another

study explains that increasing investment in environmental technology by home appliance manufacturers, such as producing customized eco-friendly appliances tailored to individual needs, can stimulate consumer purchasing intention[14]s. An expanding public is becoming aware of the environmental hazards of overconsumption and is seeking green consumption patterns[15]. Consumers' sense of social responsibility and ethical norms may have an uncertain impact on their intention to purchase eco-friendly home appliances[16]. Numerous empirical research findings provide the basis for the paper.

## 2.2 Social Responsibility

Social responsibility (SR) is considered the obligations undertaken by collective organizations or individuals, while pursuing self-development, towards stakeholders and the social environment [17][18]. Achieving sustainable development of the social complex through actions that comply with ethical norms, and balancing economic interests with social welfare is the key manifestation of assuming social responsibility. The sense of social responsibility is the consumer's self-awareness of their voluntary responsibility [18]. Unlike legal obligations, social responsibility is manifested as consumers' self-restraint at the moral level, relying on environmental publicity, education, guidance, and individual self-awareness. Consumers' social responsibility is reflected in the consumption process of goods. It is the conscious resistance by consumers, based on adequate consideration of social interests, against ideas or behaviors that are detrimental to environmental protection or the physical and mental health of others [19].

The Theory of Planned Behavior (TPB) is one of the most important social psychological theories for predicting human behavior[20], and has been widely used in recent years to study consumers' pro-environmental behavior[20][21]. The TPB posits that individuals determine their behavioral intentions through behavioral attitudes, subjective norms (SN), and perceived behavioral control[21][22]. Subjective norms (SN) emphasize the social pressure individuals feel when deciding whether to adopt a certain behavior, such as being influenced by the social environment or family members and friends during the purchasing process[22][23]. Consumer social responsibility is a specific manifestation of SN, emphasizing that consumers use their choice power to promote social sustainability and environmental protection, and even urge enterprises to fulfill their social responsibilities. Under modern socio-economic conditions, more individuals demonstrate their commitment to social responsibility through various consumption forms during the purchasing process, such as sustainable consumption[24][27], low-carbon consumption[25][36], moderate consumption[26], and green consumption[27]. Sustainable consumption advocates the purchase of energy-saving products, emphasizing the promotion of energy conservation and efficiency[24]. Low-carbon consumption emphasizes adhering to low-carbon values during the consumption process[25]. Moderate consumption

emphasizes the rational use of natural resources, discarding wastefulness and luxury, and often provides consumers with dual satisfaction of material and spiritual nature[26]. Green consumption emphasizes that the purchasing process and purchased goods must follow the principle of environmental protection, thereby also urging enterprises to produce and sell environmentally friendly green products[27][28]. However, many Chinese scholars focus more on the study of corporate social responsibility, neglecting research on consumer social responsibility. the paper aims to use consumer social responsibility as an independent variable to study its impact on consumers' purchasing motives and their intention to purchase eco-friendly home appliances.

### 2.3 Purchasing Motivation

Purchase Motivation (PM) is one of the key terms in consumer behavior research and marketing[29][30][31][32]. Purchase motivation is the sum of internal psychological needs and external stimuli that lead to consumption decisions based on consumer purchasing behavior. It may include personal internal physiological or psychological needs[30], and may also be influenced by external environments[31]. Intrinsic motivation is usually driven by consumers' physical and mental needs, interests, and sense of responsibility[30][32][33], while extrinsic motivation is typically driven by external factors such as price adjustments or promotional policies[30][31].

Purchase motivation refers to the unique psychological characteristics that consumers experience during the purchasing process[33]. Researchers believe that purchase motivation influences consumers' purchasing intentions and behaviors[34]. Previous studies have effectively measured shopping motivations for online consumption[35]. A study on altruistic and egoistic motivations suggests that various motivational factors are prerequisites for the intention to purchase green products and the final execution of the purchase behavior[15]. Other scholars propose that social factors stimulate utilitarian shopping, while environmental factors are more important in hedonic shopping[31]. Researchers also attempt to examine the impact of consumers with intrinsic motivation on halal food purchasing behavior by investigating factors such as consumer autonomy and purchasing ability[33]. Other studies focus on discussing the roles of self-protection motivation[36], information disclosure motivation[37], and socialization motivation in the consumer purchasing process[38]. Despite the proven core research value[29][31] of purchase motivation in the field of marketing, there is limited research on the purchase motivations and intentions of Chinese consumers regarding eco-friendly home appliances. the paper investigates the mediating effect of purchase motivation between social responsibility and the intention to purchase eco-friendly home appliances, thus, selecting purchase motivation as a mediating variable is reasonable.

## **2.4 Purchasing Intent**

Purchase intention (PI) is based on the directional willingness present in the consumer's purchasing process and is the specific action intention or plan formed during the consumer's decision-making process[39]. Many scholars believe that purchase intention is a crucial transitional stage that converts consumer motivation into actual purchasing behavior[40], and it is an important indicator for predicting and guiding consumer behavior. However, researchers generally agree that the effectiveness of purchase intention in the decision-making process is related to the level of effort consumers put into their purchasing behavior[41][42]. Purchase intention may be influenced by external factors[39], such as advertising, price changes, and promotional policies. Purchase intention may also be influenced by internal factors[43], such as changes in demand, religious beliefs, and a sense of responsibility.

In early studies, scholars were keen on applying the Theory of Planned Behavior (TPB) and the Theory of Reasoned Action (TRA) to explain consumer purchase intentions[44][45][46]. For example, green knowledge can positively influence purchase intentions through mediating factors such as perceived product quality and trust[47]. In recent years, there has been a considerable amount of literature on consumer purchase intentions, primarily focusing on the relationship between purchase intentions and actual purchase behavior. However, research on consumer purchase intentions related to eco-friendly appliances is relatively insufficient[48]. From 2018 to 2023, among the literature on consumer purchase intentions, Chinese scholars' research on purchasing electrical appliances accounted for 24.59% of the total types of studies. Of these, studies based on household appliances constituted only 22.13%. Notably, surveyors found that consumers feel proud when they incorporate social responsibility into their purchasing process, considering the negative impacts of their purchases[49]. Therefore, The study aims to explore the impact mechanism of consumers' sense of social responsibility on their intention to purchase eco-friendly home appliances, which is a necessary supplement to the relevant research in China's theoretical circles on eco-friendly home appliances, green production by enterprises, social responsibility, and green purchase intentions.

## **3 Research Method**

### **3.1 Framework and Hypotheses**

In recent years, TPB and TRA have been widely applied in research related to consumer purchasing behavior [20][21][44][45][46]. The study uses purchase motivation as a mediating variable, consumer social responsibility as an independent variable, and the intention to purchase eco-friendly home appliances as the dependent variable. Based on the literature review, the paper derives a theoretical framework and several hypotheses, as shown in Figure 1.

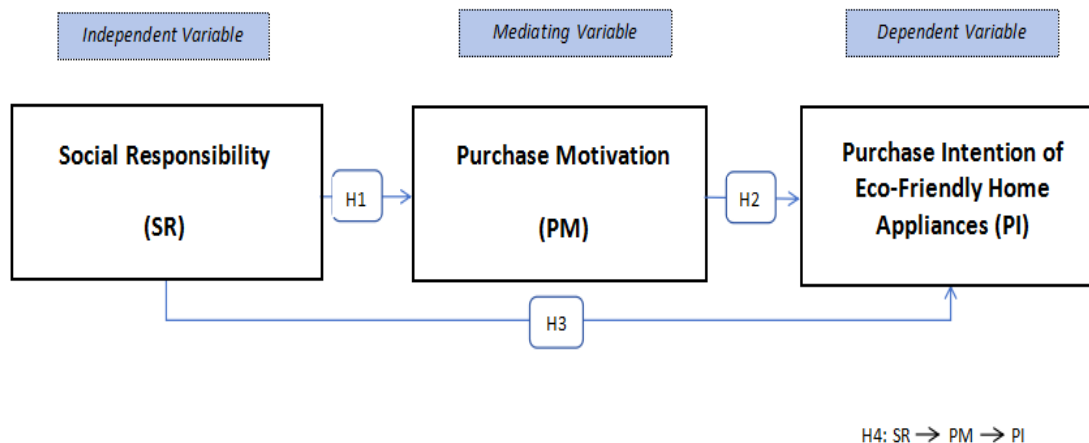


Figure 1. Framework and synthesis model.

Source: Drawn by Author.

Consumer social responsibility is the moral sentiment demonstrated by buyers during the purchasing process. However, the relationship between consumer social responsibility (SR) and the intention to purchase eco-friendly appliances (PI) remains unclear. Some scholars emphasize that social responsibility is an emotional need for belonging to a group, which is expressed through responsible actions[18]. Similar views suggest that environmental promotional advertisements promote a sense of social responsibility among consumers due to strong social connectedness[50]. Green consumption behavior[51] promotes the health and sustainability of the human living environment, making the study of consumer purchase intentions before purchasing behavior more critical. Multiple studies propose that young people's social responsibility is clearly reflected in the purchasing process. For example, younger generations are willing to buy second-hand products because they bear the social responsibility of environmental protection[52]. Research generally agrees that social responsibility encourages consumers to reflect on the impact of their purchasing behavior on themselves, society, and the environment[53]. The relationship between consumer social responsibility and corporate social responsibility is close[54], and consumer social responsibility determines whether corporate responsible behaviors ultimately succeed[55]. Compared to corporate social responsibility, past Chinese scholars have paid little attention to consumer social responsibility, making it necessary to study the relationship between Chinese consumers' social responsibility and the intention to purchase eco-friendly home appliances. Therefore, Hypothesis 1 and Hypothesis 3 are proposed.

The academic community believes that motivation is based on either self-interest or public interest[56]. Pro-social motivation implies that individuals are more concerned with the overall or collective benefits of society[57]. Researchers have confirmed that purchasing motivation influences consumers' buying behavior in the retail industry[58][59]. Although scholars generally recognize that the motivation to purchase eco-friendly products and green goods is gradually increasing[60], the relationship between consumers' social responsibility (SR) and purchasing motivation (PM) remains unclear. Despite previous studies effectively measuring the shopping motivations of online shoppers in France[35], research on the relationship between purchasing motivation (PM) and purchase intention (PI) in the field of eco-friendly home appliances is still lacking. There is a significant lack of research on consumer purchasing motivation in the marketing of eco-friendly home appliances in China, leading to the proposal of Hypothesis 2 and Hypothesis 4 in The study.

In summary, the paper proposes independent variables (SR), mediating variables (PM), and dependent variables (PI), and hypothesizes their relationships, namely Hypothesis 1 (H1), Hypothesis 2 (H2), Hypothesis 3 (H3), and Hypothesis 4 (H4).

H1: Consumers' sense of social responsibility has an impact on their purchase motivation.

H2: Consumers' purchase motivation influences their intention to buy eco-friendly home appliances.

H3: Consumers' sense of social responsibility affects their intention to buy eco-friendly home appliances.

H4: Purchase motivation mediates the relationship between consumers' sense of social responsibility and their intention to buy eco-friendly home appliances.

### 3.2 Sample and Program

The study explores the impact mechanism of consumers' social responsibility on their purchasing motives and intentions to buy eco-friendly home appliances, and analyzes the mediating role of purchasing motives. Based on the rules of scientific research methods[61], the paper elaborates on the detailed quantitative research process and describes the work of questionnaire surveys, data collection, and sample analysis.

Firstly, the paper presents the data anomalies of the collected questionnaire samples. Questionnaire anomalies typically refer to highly similar or completely identical answers to all questions, which are not acceptable[62]. Respondents may have answered casually or perfunctorily, leading to invalid questionnaires. Among all the collected 678 questionnaires, 3 questionnaires showed anomalies, with their numbers being 222, 315, and 461. This survey

collected a total of 678 questionnaires from the Hefei region of Anhui Province, China. After excluding the 3 anomalous questionnaires, the final number of valid questionnaires was 675. The sample size of The study meets the requirements[61].

### 3.3 Demographic Statistics

To collect primary data, The study conducted surveys using online questionnaires. The questionnaire for The study was created using Sojump (a software for online surveys) and was shared and collected via email and social media messages. The survey period for The study was from September 2024 to February 2025. To ensure that the academic research adheres to ethical norms, the respondents participated anonymously and without compensation and were informed that the information provided would only be used for academic purposes[62]. Descriptive statistical analysis was performed on the survey sample, and the results are shown in Table 1.

Table 1. Sociodemographic data for the sample by sex and age.

		Age of 21-30	Age of 31-40	Age of 41-50	Age of 51-60	Total
<b>Man</b>	Count	118	133	125	2	378
	%of the total	17.5%	19.7%	18.5%	0.3%	56%
<b>Woman</b>	Count	82	116	98	1	297
	%of the total	12.1%	17.2%	14.5%	0.2%	44%
<b>Total</b>	Count	200	249	223	3	675
	%of the total	29.6%	36.9%	33%	0.5%	100.0%

Source: Self-collated.

The target population for the survey consists of urban residents aged 21 and above residing in Hefei, China (as of September 2024). Generally, individuals aged 20 to 60 in China have relatively stable employment and income. To exclude the influence of actual purchasing power, The study surveys citizens aged 20 to 60. Among the survey sample, there are 200 participants aged 21 to 30 (29.6%), 249 participants aged 31 to 40 (36.9%), 223 participants aged 41 to 50 (33%), and 3 participants aged 51 to 60 (0.5%). According to Table 1, the distribution of respondents across age groups is even, meeting the sample requirements[63]. In the sample, males account for 56%, and females account for 44%. Analyzing the gender distribution of the sample, it can be seen that the gender distribution is even, meeting the sample requirements[63].

Table 2. Sociodemographic data for the sample by monthly income.

<b>Monthly Income</b>	<b>Under ¥2000</b>	<b>¥2001~¥6000</b>	<b>¥6001~¥10000</b>	<b>Over ¥10000</b>	<b>Total</b>	
Total	Count	21	206	298	150	675
	%	3.1%	30.4%	44.4%	22.1%	100%

Source: Self-collated.

To ensure the reliability of the sample feedback information, the questionnaire also surveyed the respondents' income status and frequency of purchasing household appliances, as shown in Tables 2 and 3. According to the statistical results, most respondents have stable income sources and corresponding economic income levels. Additionally, based on the respondents' answers regarding the frequency of purchasing household appliances, the statistical results indicate that the sample conforms to the marketing patterns of household appliance products[7][8], i.e., consumers do not frequently purchase or replace household appliances. The statistical results of Tables 2 and 3 show that the sample data meet the requirements[62][63].

Table 3. Sociodemographic data for the sample by purchase frequency.

<b>Purchase Frequency</b>	<b>Every 3 Month</b>	<b>Every 6 Month</b>	<b>Every 1 Yaer &amp; Longer</b>	<b>Total</b>	
Total	Count	29	234	412	675
	%	4.3%	34.7%	61.0%	100%

Source: Self-collated.

### 3.4 Measures

The study's survey questionnaire items were based on previous research. To assess consumer social responsibility, the paper referred to previous empirical research experiences[18][23][26][52][54]. The survey questionnaire of The study consists of two parts. First, the questionnaire conducts demographic surveys[62], involving the respondent's gender, age, employment status, income status, and frequency of purchasing home appliances. Second, the questionnaire evaluates consumer social responsibility, investigating consumers' purchase intentions and motivations for eco-friendly home appliances. During this process, participants were informed about the rules for data protection. The second part of the questionnaire was constructed based on the various variables of the study, specifically including: Social Responsibility (RS), Purchase Motivation (PM), and Purchase Intention for Eco-friendly Home

Appliances (PI). The content was expressed in the form of statements and used for evaluation, with answers compiled using a five-point Likert scale[61][62], where the values are: 1 (Strongly Disagree), 2 (Disagree), 3 (Neutral), 4 (Agree), and 5 (Strongly Agree).

Table 4. Rotated Component Matrixa.

	Component		
	1	2	3
PM1	0.833		
PM2	0.824		
PM3	0.776		
PM4	0.745		
SR3		0.833	
SR1		0.827	
SR2		0.823	
SR4		0.786	
PI4			0.769
PI5			0.767
PI1			0.761
PI2			0.744
PI3			

a Rotation converged in 5 iterations.

Source: SPSS 27.0.

The semantic validation and translation proofreading of the questionnaire items were completed after communication and discussion with the author, mentors, Chinese professionals with professor qualifications, and professional translators with translation qualifications. The Chinese experts with professor qualifications specialize in areas such as business management, marketing, psychology, and environmental science. These experts evaluated the questionnaire to verify the rationality and standardization of the scale and items. Although all questionnaire items are based on literature research and expert discussions, it can be seen in the rotated component matrix that the experimental effect of PI3 is poor. See Table 4. In the study, the exclusion of item PI3 has an impact on the validity and reliability of the results, so it is necessary to exclude PI3.

Table 5. Cronbach’s Alpha, KMO and Bartlett Test.

Constructs	Cronbach’s Alpha	KMO	Bartlett's Test of Sphericity		
			Approx. Chi-Square	df	Sig.
Social Responsibility (SR)	0.888	0.838	1510.870	6	0.000
Purchase Motivation (PM)	0.872	0.828	1352.931	6	0.000
Purchase Intention of Eco-Friendly Home Appliances (PI)	0.871	0.828	1310.559	6	0.000

Source: SPSS 27.0 and Self Built Charts

Statistical process evaluation assessed the reliability and validity of the model. The study continues to use Cronbach's Alpha, KMO and Bartlett Sphericity Test to measure the reliability of latent variables and the internal consistency of items[64]. After excluding the item, the overall reliability and validity of the consumer social responsibility project reached threshold levels (Cronbach’s  $\alpha > 0.8$ ,  $1.0 > KMO > 0.7$ ), that is, Cronbach’s  $\alpha = 0.888$  and  $KMO = 0.838$ ; the overall reliability and validity of the purchase motivation project reached threshold levels (Cronbach’s  $\alpha > 0.8$ ,  $1.0 > KMO > 0.7$ ), that is, Cronbach’s  $\alpha = 0.872$  and  $KMO = 0.828$ ; the overall reliability and validity of the purchase intention project reached threshold levels (Cronbach’s  $\alpha > 0.8$ ,  $1.0 > KMO > 0.7$ ), that is, Cronbach’s  $\alpha = 0.871$ ,  $KMO = 0.828$ . It can be seen that the overall model of the questionnaire items fits well. The results of reliability and validity are excellent. See Table 5.

#### 4 Assumption Verification

The study selected AMOS software to examine convergent validity and discriminant validity, and tested hypotheses through multiple group structural equation modeling (SEM). The research was conducted on the entire sample, which includes a total of 675 individuals, and also involved mediation effect analysis. Confirmatory factor analysis (CFA) is a more common and scientifically sound method to test the model fit and measurement effectiveness[65]. Similarly, SEM is considered an appropriate method for such studies, capable of demonstrating the robustness of measurement and structural assessment[66].

##### 4.1 Confirmatory Factor Analysis

To verify the model fit and measurement effectiveness, the study applied confirmatory factor analysis (CFA) method. Figures 2 and Table 6 show the various indicators of the measurement model in the study. The overall measurement effect of the model is good and meets the requirements[66].

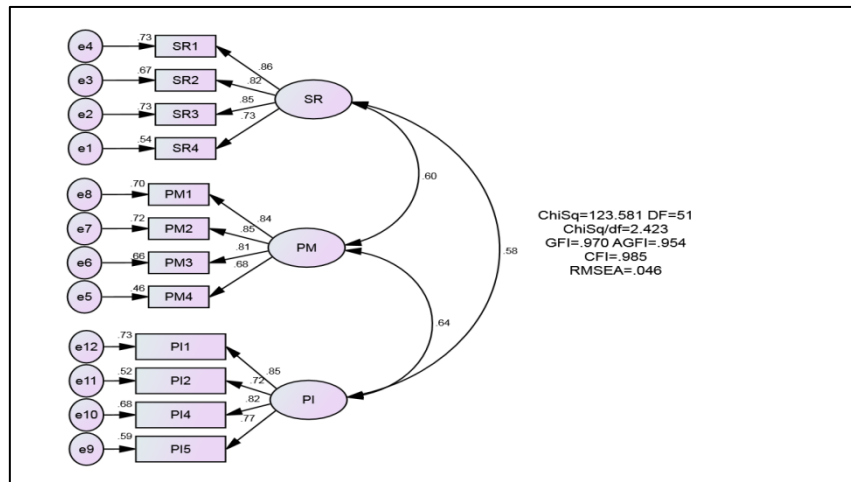


Figure 2. Confirmatory Factor Analysis via Overall Measurement Model.

Source: AMOS 24.0.

According to the results shown in Figure 2 and Table 6, the statistical fit indices of the measurement model meet the criteria. The chi-square value ( $\chi^2$ )/degrees of freedom = 2.423, which is an acceptable value (less than the threshold of 3). For incremental fit indices, GFI = 0.970, AGFI = 0.954, CFI = 0.985, all of which are considered good fits (greater than the threshold of 0.9)[65]. The parsimony index well accommodates the valuable model, i.e., RMSEA = 0.046 (less than the threshold of 0.08)[65].

Table 6. Statistical Goodness of Fit Index of the Measurement Model (n = 675).

Fit Indices		Model	
Measure	Threshold	Estimate	Interpretation
<b>ChiSq</b>	—	123.581	—
<b>DF</b>	—	51	—
<b>ChiSq/DF</b>	<3	2.423	Excellent
<b>GFI</b>	>0.9	0.970	Excellent
<b>AGFI</b>	>0.9	0.954	Excellent
<b>CFI</b>	>0.95	0.985	Excellent
<b>RMSEA</b>	<0.06	0.046	Excellent

Source: AMOS 24.0 and Self Built Charts.

AVE tested the convergent effect of the experimental scale items, usually indicating the explanatory power of latent variables on observed variables. The study demonstrates the convergence effect of the  $\sqrt{AVE}$  showcase project, which is more intuitive, as shown in Table

7. In summary, the model's fit in The study meets the requirements[65].

Table 7. Analysis of Individual Measurement Model.

Discriminant Alidity			
$\sqrt{AVE}$	SR	PM	PI
SR	0.817		
PM	0.604	0.798	
PI	0.577	0.638	0.792

Source: AMOS 24.0 and Self Built Charts

#### 4.2 SEM Estimation of General Assumptions

The SEM estimation of general assumptions is a validation of the relationships between variables and hypothesis testing. The results show that all fitted model categories have met the threshold requirements[65]. See Figure 3.

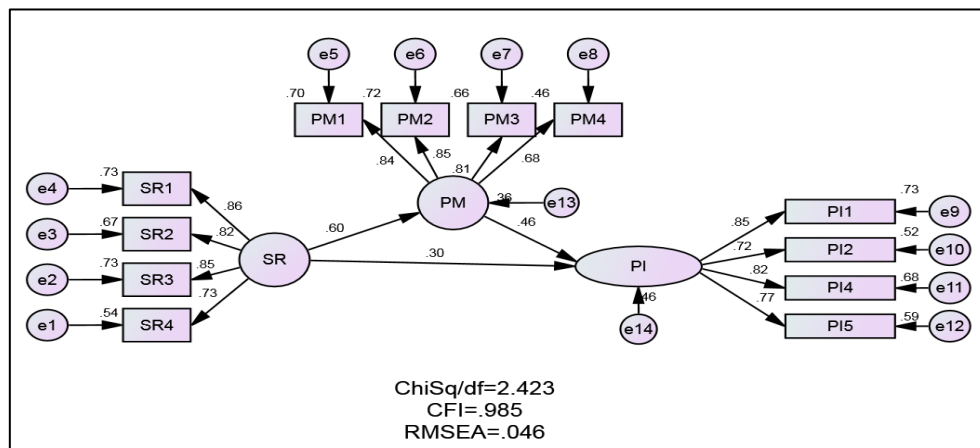


Figure 3. Structural Model.

Source: AMOS 24.0.

According to the impact of corporate social responsibility (CSR) on purchase motivation (PM), studies indicate a positive and significant relationship (CSR→PM; C.R. = 13.53; p-value = \*\*\*; S.E. = 0.05). According to the impact of purchase motivation (PM) on the intention to buy eco-friendly appliances (PI), studies also show a positive and significant relationship (PM→PI; C.R. = 9.43; p-value = \*\*\*; S.E. = 0.05). According to the impact of corporate social responsibility (CSR) on purchase intention (PI), studies similarly indicate a positive and significant relationship (CSR→PI; C.R. = 6.32; p-value = \*\*\*; S.E. = 0.06). Therefore, it can be inferred that the study supports hypotheses H1, H2, and H3. See Table 8.

Table 8. SEM Estimates for Hypothesis Tests.

H	Hypothesis	Estimate	S.E.	C.R.	p	Decision
H1	SR → PM	0.64	0.05	13.53	***	supported
H2	PM → PI	0.51	0.05	9.43	***	supported
H3	SR → PI	0.36	0.06	6.32	***	supported

Source: AMOS 24.0 and Self Built Charts. Note: SR= Social Responsibility; PM= Purchase Motivation; PI=Purchase Intention of Eco-Friendly Home Appliances; p-value = \*\*\* p < 0.01.

**4.3 Mediation Effect Analysis**

The above model verified that the mediator variable (PM) has a significant impact relationship with both the independent variable (SR) and the dependent variable (PI). The mediator variable has significant influence value in the model, but it is not possible to infer the specific manifestation of the mediator variable's mediating effect between the independent variable and the dependent variable. Therefore, H4 needs further validation through the Sobel Test[67]. According to the requirements of the Sobel Test statistical method, we need to understand the non-standardized coefficient values and standard error data of the independent variable, mediator variable, and dependent variable. The data can be found in Table 8.

$$Z = \frac{ab}{SE_{ab}}$$

$$SE_{ab} = \sqrt{a^2 SE_b^2 + b^2 SE_a^2}$$

The study designed the unstandardized coefficient value of SR→PM as a (SR→PM; a = 0.64; SEa = 0.05), and simultaneously designed the unstandardized coefficient value of PM→PI as b (PM→PI; b = 0.51; SEb = 0.05). According to the following calculation formula, the results were calculated. When α = 0.05, Z-value > |1.96|, it is considered significant[67]. According to the formula, the calculation result of the study is Z-value = 7.980 > |1.96|. Therefore, it can be inferred that H4 is supported, indicating that the mediator variable (PM) plays a mediating role between the independent variable (SR) and the dependent variable (PI). Considering that SR has an impact on PI (p-value = \*\*\*), it can be inferred that PM plays a partial mediating role between SR and PI. That is, PM enhances the effect of SR on PI (See Table 8).

## **5 Discussion**

### **5.1 Conclusion**

The study aims to empirically evaluate the impact relationships between consumer social responsibility (SR), purchase motivation (PM), and the intention to purchase eco-friendly appliances (PI). A total of 678 valid responses were received, with 3 outlier questionnaires excluded, resulting in 675 valid samples. Data analysis and hypothesis testing were conducted using structural equation modeling (SEM), confirming that social responsibility (SR) has a positive and significant impact on both purchase motivation (PM) and purchase intention (PI), and that purchase motivation (PM) also positively promotes purchase intention (PI). Purchase motivation (PM) plays a partial mediating role in the model.

The study confirms that social responsibility (SR) among consumers in Anhui, China, has a positive promoting effect on the intention to purchase eco-friendly home appliances. This result is consistent with previous studies[51][52], indicating that a sense of social responsibility can significantly and positively promote purchasing intentions towards more environmentally friendly, green, and sustainable concepts. Social responsibility (SR) has a positive impact on purchase motivation (PM), and purchase motivation (PM) also has a positive impact on the intention to purchase eco-friendly home appliances (PI). This result is consistent with previous studies[59][60], indicating that a sense of social responsibility can significantly and positively promote purchase motivation and further strengthen consumer purchasing intentions. The partial mediating effect of purchase motivation (PM) is manifested as an enhanced effect on the relationship between social responsibility (SR) and the intention to purchase eco-friendly home appliances (PI). Eco-friendly home appliances have become a new development trend in the industry[68], playing a key role in maintaining the healthy development of the human living environment. Based on the conclusions of the study, it can be inferred that the concept of eco-friendly consumption and responsibility awareness is gradually being established among consumers and will promote green consumption behavior.

### **5.2 Contributions**

Ecological destruction and environmental pollution issues have been widely concerned by people over the past few decades, especially by researchers[69]. From the perspective of theoretical contributions, The study's exploration of consumer social responsibility fills the gap left in previous related research in China[70], and also provides empirical data and practical insights for research related to consumers.

From the perspective of practical application, the findings of the study can provide empirical data and practical information for home appliance companies, helping them develop

and produce eco-friendly home appliances, thereby enhancing their ability to manage and operate environmentally friendly products[71]. This research also promotes the transformation and upgrading of the home appliance industry in China and globally towards more circular, economic, and sustainable development models. The same practical experience is also crucial for government and other regulatory bodies. The conclusions of The study can help government and other regulatory bodies understand consumers' intrinsic psychological needs for eco-friendly products[72], thus facilitating the introduction and implementation of more rational and effective supportive environmental policies.

The most crucial aspect of the study is that it has sparked public awareness and self-imposed responsibility regarding their role in environmental protection, promoting the concept of green consumption among the public[69][70]. This has fostered a sense of responsibility and habit for green consumption. The power of enhancing public self-responsibility is immense, which will promote green consumption to become a trend in cities, nations, and even globally.

### 5.3 Recommendations for Management

The research findings confirm that consumer social responsibility (SR) has a positive and significant impact on consumers' intention to purchase eco-friendly appliances (PI), as well as that social responsibility (SR) positively influences consumers' intention to purchase eco-friendly appliances (PI) through purchase motivation (PM). The study concludes that a sense of social responsibility plays a crucial role in consumers' purchasing decisions for environmentally friendly products.

Consumers with a sense of social responsibility pay more attention to the environmental value of products during the consumption process[17]. They consciously fulfill their environmental responsibilities when purchasing and believe that performing environmentally friendly actions is an individual obligation. Typically, consumers with a sense of social responsibility not only voluntarily fulfill their green behavior obligations but also advocate for their friends to fulfill environmental responsibilities. They also support companies and brands that promote environmental concepts and implement environmentally friendly actions[53]. Companies and brands that actively fulfill social responsibilities and are dedicated to environmental protection are more likely to gain the recognition of consumers with a strong sense of social responsibility[73]. Therefore, some recommendations are provided for enterprises and government management departments.

For home appliance companies, establishing an environmental image and promoting green concepts is an effective approach. The reason for this is that it can gain the trust and support of consumers with strong social responsibility. Environmental soft power, as a strong competitive

force, can support companies to stand out and achieve a significant market share in future social development. Additionally, it is recommended that companies focus on promoting the environmental advantages of their products, developing eco-labels and environmental certifications. For the consumer group with strong social responsibility, formulating precise promotional strategies and marketing activities can effectively increase market share.

For management authorities, collaborative efforts guided by government departments are effective activities. It is recommended that government management departments establish cooperation platforms for home appliance companies and universities or research institutions, guiding and managing scientific research activities centered on environmental protection concepts or green technologies. Additionally, environmental public welfare initiatives led by government management departments are the most attractive to the public. Therefore, it is suggested that government management departments promote home appliance companies to organize public welfare activities themed around eco-friendly appliances, ensuring implementation supervision and effectiveness evaluation. In this way, with the joint efforts of all parties, the concept of environmental protection in the consumption sector will gain trust, and the development quality of green products and green industries will be more reliable.

### 5.4 Limitations

The survey area of The study was chosen to be Anhui Province, China, due to its large population and rapid economic development over the past decade[74]. However, considering the entire region of China, the scope of the survey conducted in the study is not extensive enough. Another limitation is due to the single independent variable involved in the study. Other factors, such as corporate social responsibility and consumer social responsibility, as well as advertising and price, also significantly influence consumers' purchasing motivation or intention[75]. However, due to time and budget constraints, these factors were not included in the study.

The paper recommends further investigation and research. Future studies, building on the experience of the paper, will promote more comprehensive and standardized research content through methods such as improving independent variables and expanding survey scopes. Despite the aforementioned limitations, the main contribution of The study is revealing the impact relationships between consumers' social responsibility (SR), purchase motivation (PM), and intention to buy eco-friendly appliances (PI), providing empirical evidence and typical cases for both theoretical circles and management practices. Based on the research findings, the paper provides management recommendations and practical guidance for enterprises and government management departments. Notably, the results of the empirical study strongly

confirm the relationship between consumers' subjective sense of responsibility, purchase motivation, and purchase intention, and verify the mediating effect of purchase motivation. From the perspective of product marketing, the study innovatively provides a starting point for thinking about promoting global environmental protection efforts, contributing to the sustainable development of the human living environment.

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