



# The Relationship Between Corporate Social Responsibility and Consumers' Purchase Intention with the Intermediary Variable of Altruistic Attribution

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## Authors' contributions

This work was carried out in collaboration between both authors. Author LD designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Author SG managed the analyses of the study and managed the literature searches. Both authors read and approved the final manuscript.

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## ABSTRACT

With the rapid development of the current market economy of China, corporate social responsibility had gradually begun to be taken into one of the factors that determine their purchase intention for the consumers when they purchased the products. At present, most of the researchers were about exploring the impact of corporate social responsibility on the final behaviour of the consumers, but the internal mechanism of corporate social responsibility that affected the behaviour of consumers was relatively rare. Based on the attribution theory, the mediation model with moderation to study its internal mechanism had been constructed in this research, also the methods of questionnaire survey were used to the empirical test for the conceptual model in this research. The results of the

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study showed that the corporate social responsibility had a direct positive impact on the purchase intention of the consumers, also it had an indirect positive impact on the purchase intention of consumers that through the altruistic attribution; The perceived effectiveness of consumer would positively regulate the influence of the corporate social responsibility on altruistic attribution; while the corporate social responsibility-corporate ability beliefs would negatively affect the relationship between altruistic attribution and purchase intention of consumers. Finally, the suggestions had been put forward for the results obtained by the survey in this research, which could be taken as reference for the academic community and the industry.

*Keywords: CSR; altruistic attribution; perceived effectiveness; CSR-CA beliefs.*

## 1. INTRODUCTION

The concept of corporate social responsibility is originated in the middle of the 20th century. Along with the deepening of the global market economy, it is getting very competitive in the business among enterprises, so many enterprises start to seek new factor to boost their sales increase. Then, many of them begin to attach importance to corporate social responsibility. Currently, most of the enterprises have deemed the behaviour of corporate social responsibility as one of critical strategy direction, and corporate social responsibility has been developed to be an important component that has been accepted by the mass in the management of stakeholders. According to the theory of stakeholders raised by Freeman [1], the development of enterprise could not live without the participation of suppliers, shareholders, employees, consumers and others, and enterprises should not only just chase after the interests of shareholders. Especially, the consumers' purchase behaviour would be a highlight for directly affecting the market share and future development of enterprises.

Current academic research on corporate social responsibility has been focusing on the impact of corporate social responsibility on consumers behaviour gradually. However, many types of research related to corporate social responsibility are built under the western developed countries [2-4], while it needs to verify whether the corporate social responsibility could still impose a different impact on consumers behaviour in Chinese society dominated by collectivism. There has been great progress in the research of corporate social responsibility, but there is still fewer researches on corporate social responsibility from the aspect of consumers [5-7]. China has been the world's second-biggest economy and the GDP keeps an average annual growth rate of more than 6%, so the performance of multinational enterprises in China's consumer

market is a starring role in their development. Hence, the research on the influencing mechanism of corporate social responsibility on consumers' purchase intention with the background of the Chinese context has been very important. Most of the existing researches focus on the impact of corporate social responsibility on the ultimate behaviour of consumers. For example, the perception of corporate social responsibility would make consumers generate high loyalty to the enterprise and the brand, so they would have high purchase intention of the products [8-11]. Some researches would emphasize the importance of corporate social responsibility on the survival and development of enterprises from the lack of corporate social responsibility or the harmful behaviours to the society [12-14]. There should be further research on how consumer behaviour is affected by corporate social responsibility behaviour and the internal mechanism of the impact. Therefore, a model framework of the internal mechanism of the impact of corporate social responsibility on consumers is built up in the research, which is the main innovation of the theory research.

The attribution theory of Weiner [15] thinks others motivation would affect the result of behaviour. At the same time, the perceived efficacy raised by Ellen et al. [16] also mentions that consumers would have a perception of the contribution of purchase behaviour to society. Therefore, it is reflected in the two theories that it could be seen from practice that consumers would guess whether some social responsibility behaviours of the enterprise are sincerely based on some individual features. For example, after the outbreak of COVID-19 in Wuhan, China in 2020, many enterprises positively participate in charity donations to fight against COVID-19 to perform a social responsibility of a corporate citizen. Mengniu and Yili these diary corporates spare no effort in the donation. Mengniu donates milk worth more than 600 million yuan at one

time and contributes a special fund of RMB 12 million for fighting the COVID-19, which is greatly praised by consumers. While Yili, as a leading sheep of the dairy industry, just donates 10 million yuan for epidemic prevention and control at the very beginning. Later, the enterprise donates another 100 billion for setting anti-epidemic fund and milk products worth more than 400 million yuan for medical staff, but consumers think the additional donation is for the stress of public opinion instead of the sincere public welfare purpose, which causes the share price of Yili plummeted and the milk products are unsalable in the market<sup>1</sup>.

The comparison between Mengniu and Yili means that consumers would guess the motivation when enterprises undertake their corporate social responsibility. Meanwhile, consumers would have correspondent purchase behaviour and comment on the products of the enterprise based on their subjective guess. When exploring the impact of corporate social responsibility on the consumers' purchase intention, we would have research with altruistic attribution as an intermediary variable. In the research on the relationship among corporate social responsibility, altruistic attribution and consumers' purchase intention, some scholars find out that consumers' loyalty and purchase intention to products of enterprise would be affected by the altruistic attribution of the implementation of social responsibility activities [11,17].

Also, Bandura [18] suggests that individual efficacy means a belief of an individual with the ability to organize and implement specific achievements, and it is a degree of confidence that an individual has in his ability to accomplish a specific task with his skills. The individual efficacy mentioned by Bandura [18] is a degree of individual confidence in achieving results. Then, Schofield [19] also mentions that individual efficacy is the extent to which individuals contribute to the success of collective goals. Then Ellen et al. [16] suggest a definition of perceived efficacy based on the individual efficacy of Schofield [19]: consumers' perception of the contribution of purchase behaviour to society. Dacin [20] thinks some subjective personal characteristics of consumers may affect whether and to what extent do consumers respond to the level of corporate social responsibility. Such as the case of COVID-19 mentioned above, for the donation of Mengniu Group, the consumers with higher perceived

efficacy would think that they would have a high degree of contribution to society in purchase products of Mengniu. The research mainly thinks the perceived efficacy of consumers such individual feature plays as a moderator. While for the consumers contributing the motivation to the public welfare of society, some consumers would be willing to support Mengniu with the actual purchase, but some of them are indifferent. The research thinks that the influencing factors of consumers' purchase intention are not only corporate social responsibility but also corporate ability [21]. Consumers think the relationship between corporate social responsibility and corporate ability is antagonistic and mutually reinforcing, which means that the higher corporate social responsibility the weaker corporate ability. The corporate social responsibility-corporate ability belief would affect their response to corporate social responsibility, which is an imagination needed to explain in the research.

Therefore, the research attempts to build up a research framework including corporate social responsibility - altruistic attribution - consumers' purchase intention, perceived efficacy and corporate social responsibility - corporate ability belief. There is empirical verification on the concept model through the questionnaire of the virtual situation to study the mechanism of corporate social responsibility's influence on consumers' purchase intention in Chinese context with explanation, to provide reference and suggestion of Chinese enterprises to implement a marketing strategy of social responsibility.

## **2. LITERATURE REVIEW AND HYPOTHESIS**

### **2.1 Perception of Corporate Social Responsibility and Consumers' Purchase Intention**

The purchase intention of consumers is used for the product demand in the future, and it could be used to predict advertisement and promotion that enterprise will need to implement in the future; besides, it could also be used to evaluate the rationality of a series of activities undertaken by enterprises [22]. Therefore, the research of the consumers' purchase intention is very important for the development of enterprises. For consumers' cognition composition of an enterprise consists of Enterprise Association,

enterprise image and enterprise reputation [20,23] and the composition of a series of interrelated enterprise characteristics, such as value, atmosphere, skills, the supply of cultural products and competitive position [24]. Hence, more and more consumers would think about the role of enterprise in society when making a purchase decision, and they would be affected by the information on corporate social responsibility. The perception of the behaviour of enterprise performing social responsibility would become an important decision-making factor of consumers in the process of decision-making.

Corporate social responsibility means that enterprises have business practice through internal policy and resource of the enterprise to achieve the promise to long term maximization of community economic and social interests [25]. The good image and information on corporate social responsibility could win consumers' trust and cognition of enterprises so that they would have loyalty to the enterprise and the products [26,8]. And it would affect consumers' purchase intention and recommendation intention [17]. Consumers' attitude toward enterprises and purchase intention would be increased along with the growth of their awareness of corporate social responsibility [8]. The research of Creyer and Elizabeth [27] finds out that consumers would be willing to pay more money for the enterprises' products once they have some ethical behaviours. Lichtenstein et al. [28] find out that consumers' perception of corporate social responsibility would positively affect the non-interest donation and the purchase behaviour of enterprise products through experiment. Grimmer & Bingham [29] have researched the respond of consumers to corporate social responsibility behaviours with the sample of enterprises participating in environmental protection, and they find that consumers' purchase intention to the corporate products with high environmental protection performance is higher than that with low environmental protection performance. Hence, based on the previous researches, the paper suggests:

Hypothesis 1: Perception of corporate social responsibility could positively affect consumers' purchase intention.

## **2.2 Intermedia Role of Altruistic Attribution**

Attribution theory thinks there must be causes for any individual behaviour, and the judgement to

cause is the basic motivation of individual behaviour. Hence, the personal perception of causes would affect his behavioural response [30,15]. Such motivation is also in the same response in corporate social responsibility. When enterprises are implementing social responsibility activities, consumers would attribute such behaviour to enterprises. The internal motivation or external interests these two main motivations are attributed to enterprises [31]. Hence, the internal motivation of enterprises is to implement their corporate social responsibility activities for the public interest in the society, but consumers still guess the internal motivation of enterprise when facing the evidence of enterprise carrying out social responsibility. When consumers deem the motivation of enterprise performing social responsibility to be not for helping community development or citizens these public welfare services in the society but for their interests, consumers would not praise the social responsibility behaviour of enterprises. Therefore, there would be a positive impact of purchase intention when consumers think the enterprises performing social responsibility for serving the public interests of society and the mass [32]. Mohr et al. [33] think that the altruistic attribution of enterprises implementing social responsibility activity could be divided into four types: completely for public welfare; mostly for public welfare and part for its interests; mostly for its interests and part for the interests of community, society and environment; and completely for its interests. However, the motivation of enterprises participating in corporate social responsibility is for many aspects. In a word, consumers would prefer to guess the motivation of enterprises to take part in social responsibility activities [34].

Lu Dong [35] thinks that consumers would distribute the motivation of corporate social responsibility into corporate interests driven motivation and social interests are driven one. And the attitude and comment of consumers towards corporate social behaviours may be affected by the perceived corporate internal motivation. Only when consumers think enterprises perform social responsibility for social interests can there be a positive comment [36]. At the same time, only when consumers think the motivation of enterprises performing corporate social responsibility is for the public welfare in the society can they pay for the ethical behaviour of enterprises [37]. While consumers would not pay for the behaviour when they think the enterprise take ethical behaviour for its interests. Based on

the previous analysis, the research put forward:

Hypothesis 2: There is an intermedia of altruistic attribution between the perception of corporate social responsibility and consumers' purchase intention.

### **2.3 Internal Mechanisms of Corporate Social Responsibility Influencing Consumer Behavior**

Understanding the internal mechanisms through which Corporate Social Responsibility (CSR) influences consumer behavior is crucial for both academic research and practical application. While extensive research has explored the direct impacts of CSR on consumer behavior, the underlying mechanisms remain relatively underexplored [25][11]. This section aims to elucidate these internal mechanisms by examining motivational attributions, perceived consumer efficacy, and beliefs about the interplay between CSR and corporate ability.

Motivational attribution refers to the process by which consumers infer the motives behind a company's CSR activities. According to attribution theory [15], consumers' perceptions of a company's motivations-whether altruistic or self-serving-significantly influence their attitudes and behaviors towards the company [32]. Research indicates that when consumers attribute CSR activities to genuine altruistic motives, they are more likely to develop positive attitudes and higher purchase intentions [16]. Conversely, if consumers perceive CSR efforts as self-serving, their responses can be markedly negative [38].

Perceived consumer efficacy, defined as the consumer's belief in the impact of their purchase behavior on societal outcomes, plays a pivotal role in moderating the relationship between CSR and consumer behavior [18,16]. High perceived efficacy enhances the positive effects of CSR on consumer attitudes and purchase intentions by making consumers feel that their actions contribute meaningfully to societal welfare [28]. This perceived impact is crucial in translating CSR perceptions into actual consumer behavior [8].

The perceived relationship between a company's CSR efforts and its corporate ability-referred to as CSR-corporate ability (CSR-CA) beliefs-also significantly affects consumer responses. Some

consumers view CSR and corporate ability as mutually reinforcing, believing that socially responsible companies are also competent and capable [39]. Others may see a trade-off, where resources devoted to CSR are perceived as detracting from the company's ability to deliver high-quality products or services [21]. Research suggests that when consumers believe CSR detracts from corporate ability, the positive impact of CSR on purchase intentions is diminished [8,39].

The contrasting consumer reactions to the CSR activities of Mengniu and Yili during the COVID-19 pandemic illustrate these mechanisms. Mengniu's extensive and proactive CSR efforts, perceived as altruistically motivated, led to increased consumer support and positive purchase behavior [11]. In contrast, Yili's perceived delayed and reactive donations were viewed as self-serving, leading to consumer skepticism and reduced purchase intentions [2].

In summary, the internal mechanisms of CSR's impact on consumer behavior are multifaceted and include motivational attributions, perceived consumer efficacy, and CSR-corporate ability beliefs. These mechanisms highlight the importance of perceived motives and the consumer's belief in their efficacy and the company's competence. Understanding these internal processes provides valuable insights for companies seeking to enhance the effectiveness of their CSR initiatives.

### **2.4 Modulation of Perceived Efficacy of Consumers**

Liu Yongfang [40] suggests that the individual difference of attribution theory would make a great impact on the process of attribution, such as their attitude, knowledge background, subjective belief and other different factors. As a result, in the research of altruistic attribution of consumers on corporate social responsibility, the impact of consumers' subjective cognition on the process of attribution could not be ignored. While the perceived efficacy of consumers means consumers' perception of the contribution of their purchase behaviour to society, which is a subjective perception. The paper thinks consumers' perception efficacy is a very important factor.

Efficacy has been a key topic for researches of sociology, politics and psychology, such as political efficacy, general self-efficacy and self-

efficacy in specific areas, such as innovation efficacy and academic efficacy. Self-efficacy means the expected estimation of the corresponding results of its behaviour in the process of interaction with external things [41], or the individual's perception of the contribution to the success of the collective goal [19]. Later, Ellen et al. [16] suggest a definition of perceived efficacy based on the individual efficacy of Schofield [19]. The perceived efficacy mentioned by Ellen et al. [16] means consumers' perception of the contribution of purchase behaviour to society, which is the feeling of individual subjectivity.

In the attribution process, there is a hypothesis that others would have the same response under the same environment, i.e. their behaviour should be a typical one. It should be a false empathy bias, and it is an attribution bias related to consistent information. While it can affect the strength of the false empathy bias when the individuals do confirm or believe their own opinion. Based on it, the researchers think the stronger the perceived efficacy of consumers the higher evaluation of consumers on the universality of their behaviour. L. Ross et al. [42] suggest that individuals would believe that others would have the same behaviour and attitude tendency as them, which is a non-practical hypothesis. It could be seen that consumers with high perceived efficacy would tend to believe that the motivation of enterprises to perform corporate social responsibility is for social public welfare. Hence, the higher consumers' perceived efficacy the easier it to attribute the motivation of enterprise to perform social responsibility activities to public service and social interests. While consumers with lower perceived efficacy would apt to attribute the motivation of enterprises to perform social responsibility activities for their interests. Based on the previous analysis, the research suggests:

Hypothesis 3: Consumers' perceived efficacy could positively moderate the relationship between corporate social responsibility and altruistic attribution.

## **2.5 Modulation of Corporate Social Responsibility -Corporate Ability Belief**

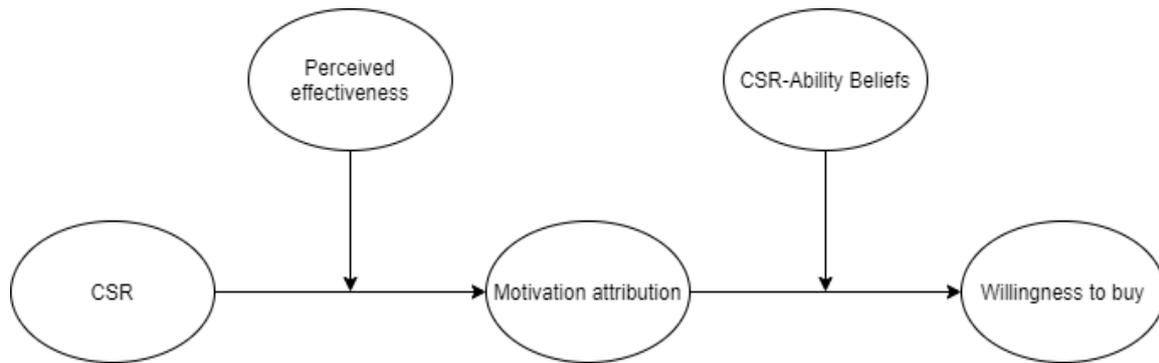
Sen & Bhattacharya [8] suggest a concept, corporate social responsibility - corporate ability belief (CSR-CA). In the concept, it is thought that

consumers would treat corporate social responsibility and corporate ability differently. They would divide these two things to be opposition and promotion. Enterprise performs corporate social responsibility at the cost of sacrificing corporate resource [39]. Brown [21] suggests that corporate social responsibility activities and corporate development are in the mutual competition since the corporate resource is limited. The resource for ability development of enterprise must be reduced after it put part of the resource to social responsibility activities. On the other hand, R. Sametz [43] thinks that the social benefits and economic benefits are not mutually exclusive when an enterprise is performing social responsibility activities since it could gain a better corporate image, advertisement benefit, corporate financing, tax preferential and so on by affecting key stakeholders to improve the performance and to invest much more R&D capital. [44-48]. Therefore, consumers' opinion on the power of the two directions forms a consumers CSR-CA belief.

The personal characteristics of consumers have been a very important variable in the research on cause-based marketing. The existing researches have proved that the role of corporate social responsibility would be affected by the modulation of CSR-CA belief [33]. When consumers think corporate social responsibility and corporate ability are in an antagonistic relationship, the positive impact on the product purchase intention of consumers and their comment would be greatly weakened when enterprises perform social responsibility; oppositely, when consumers think they are in a mutually reinforcing relationship, the positive impact on the product purchase intention of consumers would be stronger and their comment would be more positive when enterprises perform social responsibility [46]. Therefore, we think under the same attribution of perceived efficacy, the purchase intention of consumers with strong CSR-CA belief on the products would be weaker than that with weak CSR-CA belief because they think corporate social responsibility activities makes them lose the possibility to purchase products with better quality. Based on the previous analysis, the research put forward:

Hypothesis 4: Corporate social responsibility - corporate ability belief could have a negative modulation on altruistic attribution and consumers' purchase intention.

The following graphs are the model of the research.



**Graph 1. Research model**

### 3. RESEARCH DESIGN

#### 3.1 Questionnaire Design

The research has an investigation on the influencing mechanism of corporate social responsibility on consumers' purchase intention based on the previous questionnaires. There are items of five variables in the research, including variable of corporate social responsibility [21], variable of altruistic attribution [8], variable of perceived efficacy [16], variable of corporate social responsibility - corporate ability belief variable [8] and consumers' purchase intention variable [49].

In the variable of corporate social responsibility, there are a total of 4 items, including

- A1 X Enterprise love the environment and devote to the environmental protection business
- A2 X Enterprise positively take part in the public welfare business of giving back to society
- A3 X Enterprise keep participating in the social public welfare business
- A4 X Enterprise contributes to society

There is a total of 4 items for the variable of altruistic attribution. In the items of altruistic attribution, the higher score means the more enterprises pursue the interests of the community while the lower score means the more enterprises pursue the interests of the enterprises themselves. The items are as follows:

B1 Do X Enterprise participate in public welfare activities for its interests or the community interests

B2 Do X Enterprise would pay more attention to the enterprise itself or the stakeholders of the community when participating in public welfare activities

B3 Is the motivation of X Enterprise participating in public welfare activities more inclined to corporate profits or to improve the society

B4 Do X Enterprise participate in public welfare activities to bring reputation to enterprises or to arouse public participation in community public welfare business

There are total 4 items for the variable of consumers' perceived efficacy, including (The rating is 1-7; higher rating means consumers would think they make a bigger contribution when purchasing the products):

- C1 Purchasing product of X Enterprise could help those who require help
- C2 Purchasing product of X Enterprise could contribute to social public welfare
- C3 Purchasing product of X Enterprise could contribute to solving environmental problem
- C4 Purchasing product of X Enterprise could contribute to reducing resource

There are 4 items for the variable of corporate social responsibility - corporate ability belief, including;

D1 Enterprise would reduce the ability to provide the product with high quality for the input of corporate social responsibility

D2 The corporate social responsibility behaviour of enterprise is an excuse of the product with low quality

D3 The company with a high sense of corporate social responsibility would be lower than that without the sense under the same technical ability

D4 Enterprise is impossible to have products with high quality and the sense of corporate social responsibility at the same time

There are 3 items in the variable of consumers' purchase intention, including:

E1 I would purchase most of the products of X Enterprise

E2 I would focus on the new products launched by X Enterprise

E3 It is my first choice to purchase the product of X Enterprise

### 3.2 Investigation Methods

Deng [50] thinks that there would be bias in the results when having an investigation with real enterprise in the questionnaires because consumers would be affected by the inherent impression of the past. To avoid the prejudice of

consumers on the existing enterprises, the research would have investigation through a virtual situational questionnaire. Meanwhile, to arouse the consumption ethics consciousness of the respondents, the respondents would be arranged to watch photo case of desertification and ant forest project for desertification control during the investigation, and then there would be a conclusion of the whole case through several words. Later, there will be an official investigation with a questionnaire.

During the questionnaire investigation, respondents would be provided with a designed virtual situation. The situation of the questionnaire is that: suppose you want to buy a box of milk and there are two brands for your choice. There is no difference in the quality and price of the two brands. However, the brand A enterprise would devote vast of money in planting trees to make forests, and it would undertake a series of lectures on science popularization of environmental protection with relevant environmental protection organization; while there is no such event in the brand B enterprise. The reason why the milk industry is designed in this case is that the food industry has been a highlight in China. The research is measured with a Likert scale with 7 points. The investigation objects are the undergraduate, postgraduate and doctoral students in the top 3 major universities in Hangzhou, Zhejiang. The reason why the major universities are chosen is that the students in the major universities would be the main consumption group in future China, so the group would be the focus of enterprise

**Table 1. Variable of population statistics**

Attribute		Number	Percentage (%)
Gender	<b>Male</b>	140	47.6
	<b>Female</b>	154	52.4
Age	<b>Under 20</b>	61	20.8
	<b>21-25</b>	147	50
	<b>26-30</b>	58	19.7
	<b>31-35</b>	20	6.8
	<b>36 above</b>	8	2.7
Academic Degree	<b>Bachelor</b>	175	59.5
	<b>Master</b>	74	25.2
	<b>Doctor</b>	45	15.3
Monthly Expense (Unit: CNY)	<b>Less than 1000 yuan</b>	52	26.8
	<b>1001-2000 yuan</b>	195	66.3
	<b>2001-3000 yuan</b>	28	9.5
	<b>3001-5000 yuan</b>	13	4.4
	<b>More than 5001 yuan</b>	6	2

marketing activities. In the research, offline questionnaires are released randomly. Meanwhile, to ensure that respondents would treat the questionnaire seriously, they would get 10 yuan as a reward for finishing the questionnaire. 327 questionnaires have been released and 315 of them are completed, so the efficacy rate of the questionnaire is 93.3%. The questionnaires are analyzed with AMOS24 and SPSS22.

### 3.3 Empirical Analysis

#### 3.3.1 Descriptive analysis

The research has a descriptive statistical analysis for the questionnaires and the details are as follow.

In the descriptive statistical analysis, most of the samples are at the age of 21-25. Most of them

are in bachelor degree while fewer of them are in master or doctor degree. Most of the monthly expense is in the range of 1001-2000. Seen from the variable of population statistics, it would meet the design of the research; then, there is an analysis of the reliability and validity.

#### 3.4 Reliability Analysis

Reliability analysis is the main method to test the reliability and stability of the scale. The most frequent method of reliability analysis is to measure the project with CITC; Besides, Cronbach's Alpha coefficient is used to have another testing on the internal consistency of the questionnaire. Based on experience, if the CITC value of the tested item is less than 0.4 and it is still significantly higher than the Alpha value after deleting the item, the item could be deleted. The following Table 2 is the analysis result of the questionnaire's reliability.

**Table 2. Reliability analysis**

Items	Variables	CITC	Cronbach's Alpha Value after Deleting the Item	Cronbach's Alpha Value
	Corporate social responsibility			0.923
	A1	0.823	0.876	
	A2	0.815	0.817	
	A3	0.786	0.854	
	A4	0.756	0.786	
	Altruistic attribution			0.843
	B1	0.811	0.847	
	B2	0.774	0.794	
	B3	0.732	0.864	
	B4	0.805	0.811	
	Perceived efficacy			0.912
	C1	0.694	0.875	
	C2	0.701	0.901	
	C3	0.832	0.843	
	C4	0.759	0.894	
	Corporate social responsibility- corporate ability belief			0.915
	D1	0.834	0.859	
	D2	0.785	0.842	
	D3	0.723	0.793	
	D4	0.767	0.781	
	Purchase intention			0.886
	E1	0.884	0.905	
	E2	0.784	0.864	
	E3	0.842	0.897	

As seen from the Table 2, the CITC value of each item in the Table 2 is more than 0.6 and the value of 5 latent variables is more than 0.8, which means that there is high reliability of the data in the research and there would be next step.

### 3.5 Validity Analysis

Seen from the validity analysis of the scale, the validity analysis of the scale in the research is to have confirmatory factor analysis through AMOS24 software. Confirmatory factor analysis is a statistical analysis for the data of social investigation. It tests whether the relationship between a factor and the corresponding measure term is consistent with the theoretical relationship designed by researchers or not. Confirmatory factor analysis is often tested through structural equation modelling. In the actual research, the process of confirmatory factor analysis is also the testing process of the measurement model. The validity test indexes of the scale are mainly based on the evaluation criteria suggested by Hair et al. [51]. The result of a confirmatory factor analysis of the research is shown as follow in the Table 3.

As seen from the result of the confirmatory factor analysis above, the standardization factor load of all explicit variable is larger than 0.6 and the P-value is less than 0.01, so it is a significant level.

The composite reliability (C.R) of 5 latent variables are higher than 0,8 and the average variance extract (AVE) is higher than 0.6. Therefore, it is proved that the scale convergence model validity of the research is higher and it meets the convergence validity evaluation criteria suggested by Hair et al. [51].

Also, seen from the indicators of best fit of the model, the absolute fit coefficient CMIN/DF is  $2.161 < 3.0$  and the relevant fit coefficient CFI=0.929, TLI=0.877, RMSEA=0.068, which would meet the acceptable criteria [52-54]. Seen from the whole, the factor model fitting of all dimensions in the questionnaire is good, which means that the modelling of the research is rational.

The research tests whether there is certain discriminant validity among all variables through discriminant validity. For the test of discriminant validity, the average variance extract (AVE) of all variables would be used for evaluation normally. According to the research of Fornell & Larcker [55], if the AVE is larger than the absolute value of the correlation coefficient between latent variables, it means the internal correlation is bigger than the external and there is discrimination among latent variables. The following Table 5 is the discriminant validity analysis of the research.

**Table 3. Confirmatory factor analysis**

Scale	Item	p	Standardization Factor Load	C.R.	AVE
Corporate social responsibility	A1	***	.784	0.882	0.742
	A2	***	.910		
	A3	***	.936		
	A4	***	.695		
Altruistic attribution	B1	***	.862	0.936	0.715
	B2	***	.921		
	B3	***	.912		
	B4	***	.874		
Perceived efficacy	C1	***	.909	0.912	0.736
	C2	***	.898		
	C3	***	.815		
	C4	***	.608		
Corporate social responsibility-corporate ability belief	D1	***	.849	0.927	0.728
	D2	***	.910		
	D3	***	.896		
	D4	***	.839		
Purchase intention	E1	***	.744	0.863	0.698
	E2	***	.725		
	E3	***	.784		

Note: \*\*\* means  $P < 0.01$  and \*\* implies  $P < 0.05$

**Table 4. Fit coefficient analysis**

Attribute	CMIN/DF	CFI	TLI	IFI	RMSEA
Coefficient	2.161<3.0	0.929>0.9	0.912>0.9	0.930>0.9	0.068<0.7

**Table 5. Test of discriminant validity**

Variables	1	2	3	4	5
Corporate social responsibility	0.835				
Altruistic attribution	0.322	0.854			
Perceived efficacy	0.798	0.331	0.847		
Corporate social responsibility- corporate ability belief	-0.218	0.198	-.324	0.793	
Purchase intention	0.612	0.301	0.512	-0.186	0.813

**Table 6. Correlation analysis and collinearity test**

	Average Value	Standard Deviation	1	2	3	4	5	6	7	8	9
1. Corporate social responsibility	5.622	1.312	1								
2. Altruistic attribution	5.231	1.641	0.332***	1							
3. Perceived efficacy	4.695	1.453	0.211***	0.142**	1						
4. Corporate social responsibility- corporate ability belief	5.146	1.762	-0.272***	-0.021	0.131**	1					
5. Purchase intention	4.483	1.193	0.522***	0.472***	0.152***	-0.338***	1				
6. Gender	1.465	0.506	0.073	-0.039	-0.148***	0.066	0.042	1			
7. Age	2.357	1.065	-0.294***	-0.110*	-0.057	0.139**	-0.081	0.162***	1		
8. Academic degree	2.868	1.238	-0.167***	0.162**	-0.037	0.145**	0.177***	-0.151***	0.176***	1	
9. Monthly expense	2.315	0.954	0.056	-0.059	-0.071	0.048	0.117**	0.015	0.473***	0.122**	1
Diagnostic collinearity of VIF				1.385	1.413	1.332	1.323	1.051	1.564	1.212	1.258

Note: \*\*\* means  $P < 0.01$  and \*\* implies  $P < 0.05$

As seen from the result in Table 5, there is a good discriminant validity among all latent variables. Hence, it could be seen that there are good reliability and validity in the scale of the research combined with the analysis of all tools above, so there could be a further analysis for the research.

### 3.6 Correlation Analysis and Collinearity Test

Before the hypothesis test, we would adopt a correlation analysis to test whether there is a correlation relationship among all main variables. Also, the research would confirm whether there is a collinearity problem among all variables through diagnostic collinearity of VIF. The following Table 6 is the correlation analysis of the research.

As seen from the correlation analysis and VIF collinearity test, the correlation of most of the variables is in the significance of  $P < 0.05$ , so it is suitable for the following regression analysis. What's more, it is found from the VIF test of all variables, the VIF of all variables is less than 2, which means there is no problem of collinearity among all variables [56]. Then, there is a hypothesis test analysis for all variables.

#### 3.6.1 Hypothesis test

The research mainly focuses on the intermediary role of altruistic attribution and the modulation

efficacy of perceived efficacy and corporate social responsibility-corporate ability belief. To test the hypothesis mentioned above, the research is mainly tested with Process macro. Process macro is to test indirect efficacy with Bootstrapping. The test of Bootstrapping could not meet the hypothesis of the normal distribution is satisfied; concurrently, the following bias correction confidence interval is gained from 5000 Bootstrap.

Firstly, the research creates a model to test the relationship between corporate social responsibility and consumers' purchase intention, to mainly explore whether consumers would include corporate social responsibility into one of the factors of the decision-making of their consumption behaviour. The following Table 7 is a simple mediating efficacy test model.

In model 3 and model 1 of Table 7, there is an impact of consumers on the perception of corporate social responsibility, altruistic attribution and purchase behaviour. It could be found from the result of Table 7, the  $R^2$  in model 3 is 0.201 and the  $R^2$  in model 1 is 0.242. Seen from the comparison of  $R^2$ , the  $R^2$  of model 3 is higher than that in model 1, which implies that the research could effectively catch the gap between the altruistic attribution-purchase intention of consumers for further analysis.

**Table 7. Simple mediating efficacy test model**

	Purchase Intention				Altruistic attribution	
	Model 1		Model 2		Model 3	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
<b>Corporate social responsibility</b>	0.477***	0.041	0.311***	0.051	0.315***	0.043
<b>Altruistic attribution</b>			0.526***	0.056		
<b>Gender</b>	0.285***	0.152	0.314***	0.129	-0.025	0.122
<b>Age</b>	0.047	0.082	0.056	0.065	0.041	0.088
<b>Academic degree</b>	0.116***	0.184	0.139***	0.051	0.155**	0.146
<b>Monthly expense</b>	0.023**	0.137	0.024*	0.118	-0.054*	0.055
<b>Constant item</b>	2.856	0.611	0.744	0.623	3.021	0.586
<b>F</b>	22.548***		18.465***		20.485***	
<b>R<sup>2</sup></b>	0.242		0.225		0.201	
<b>Indirect Efficacy</b>	Intermediary variable Altruistic attribution		Efficacy 0.245	Boot SE 0.038	Boot 95% CI [0.169, 0.324]	

Note: \*\*\* means  $P < 0.01$ , \*\* implies  $P < 0.05$  and \* stands for  $P < 0.1$ .

The first question of the research is about the intermediary role of altruistic attribution. As seen from the test result in Table 7, there is a positive correlation relationship between corporate social responsibility and consumers' purchase intention,  $\beta=0.477$ ,  $P<0.01$ . There is a positive correlation relationship between corporate social responsibility and altruistic attribution,  $\beta=0.315$ ,  $P<0.01$ . there is a positive correlation relationship between altruistic attribution and purchase intention,  $\beta=0.526$ ,  $P<0.01$ , and the efficacy of corporate social responsibility on purchase intention is decreased from 0.516 to 0.31. According to the result of Process, the indirect efficacy is 0.254 and the standard error of mean SEM of Bootstrap is 0.038 and the efficacy is 95%. CI is [0.169, 0.324], excluding 0. Hence, there is a partial intermediary role of altruistic attribution between corporate social responsibility and purchase intention.

Another problem-focused by the research is the impact of consumer's subjective cognition on altruistic attribution and consumption intention. It is suggested in hypothesis 3 that the perceived efficacy could positively modulate the relationship between corporate social responsibility and altruistic attribution, and it is suggested in hypothesis 4 that corporate attribution and consumers' purchase intention could have a negative modulation on the relationship between altruistic attribution and consumers' purchase intention. To test the modulation efficacy of hypothesis 3 and 4 and the adjustment of two kinds of the boundary, the research centralizes the independent variable and regulating variable during the process of regression in the built two interactive items. The result is shown in Table 8.

According to the analysis results of the hierarchical regression model in Table 8, perceived efficacy would have positive modulation on corporate social responsibility to altruistic attribution, shown as model 4 in Table 8,  $\beta=0.073$ ,  $P<0.05$ . Corporate social responsibility - corporate ability belief would have negative modulation on altruistic attribution to purchase intention, shown in model 5 in Table 8,  $\beta=-0.093$ ,  $P<0.05$ . Also, shown in model 6, the impact of the influence of interaction on dependent variables is still significant, and there is a role of two kinds of boundary.

The research has a test on the intermediary efficacy of adjustment through Process Macro of

SPSS. It is found from the result of Table 8:

- I. When the perceived efficacy of consumers is lower, the indirect efficacy of corporate social responsibility on consumers' purchase intention through altruistic attribution is 0.127 and the confidence intervals is [0.041,0.202];
- II. When the perceived efficacy of consumers is high, the indirect efficacy of corporate social responsibility on consumers' purchase intention through altruistic attribution is 0.199 and the confidence intervals is [0.127,0.288];

It could be seen from (i) and (ii) that the higher the consumers' perceived efficacy, the stronger the intermediary role of altruistic attribution. Also, the judgement index of the model is 0.047 and the confidence intervals are [0.005,0.121]. It could be found that there is a significant difference in indirect efficacy when perceived efficacy is at a different level.

Besides, there is a test on the indirect efficacy of corporate social responsibility - corporate belief:

(iv) When the corporate social responsibility - corporate ability belief is lower, the indirect efficacy of corporate social responsibility - corporate ability belief on consumers' purchase intention through altruistic attribution is 0.178, and the confidence intervals are [0.142,0.275];

(v) When the corporate social responsibility - corporate ability belief is higher, the indirect efficacy of corporate social responsibility - corporate ability belief on consumers' purchase intention through altruistic attribution is 0.112, and the confidence intervals are [0.053,0.189].

It could be found from (iv) and (v) that the higher corporate social responsibility - corporate ability belief, the weaker indirect efficacy of corporate social responsibility - corporate ability belief on consumers' purchase intention through altruistic attribution. Also, the judgement index of the model is -0.035 and the confidence intervals are [-0.012,-0.130]. It could be found that there is a significant difference in indirect efficacy when perceived efficacy is at a different level.

Finally, the analysis result of the hypothesis in the research is shown as follows with the above statistical analysis tools.

**Table 8. Intermediary efficacy test with modulation**

	Altruistic attribution		Purchase intention				
	Model 4		Model 5		Model 6		
	Coefficient	The standard error of the mean	Coefficient	The standard error of the mean	Coefficient	The standard error of the mean	
<b>Corporate social responsibility</b>	0.251***	0.043	0.245***	0.029	0.241***	0.033	
<b>Altruistic attribution</b>	0.515***	0.046	0.506***	0.031	0.512***	0.042	
<b>Perceived efficacy</b>	0.114**	0.032			0.109	0.028	
<b>Corporate social responsibility x Perceived efficacy</b>	0.073**	0.027			0.081*	0.031	
			-0.102**	0.011	-0.098*	0.015	
<b>Corporate social responsibility- corporate ability belief</b>			-0.093**	0.014	-0.101*	0.021	
<b>Gender</b>	0.285	0.152	0.314	0.129	0.025	0.122	
<b>Age</b>	0.047	0.082	0.056	0.065	0.041	0.088	
<b>Academic degree</b>	0.116***	0.184	0.139***	0.051	0.155**	0.146	
<b>Monthly expense</b>	0.023**	0.137	0.024*	0.118	-0.054*	0.055	
<b>Constant item</b>	2.856	0.611	0.744	0.623	3.021	0.586	
<b>F</b>	22.548***		18.465***		20.485***		
<b>R<sup>2</sup></b>	0.242		0.225		0.201		
<b>Indirect efficacy with condition</b>				<b>Intermediary efficacy with modulation</b>			
<b>Adjustment variable</b>	Level	Efficacy	BootSE	Boot95%CI	INDEX	BootSE	Boot95%CI
<b>Perceived efficacy</b>	Low	0.127	0.041	[0.041,0.202]	0.047	0.031	[0.005,0.121]
	High	0.199	0.041	[0.127,0.288]			
<b>Corporate social responsibility- corporate ability belief</b>	Low	0.178	0.031	[0.142,0.275]	-0.035	0.021	[-0.012,-0.130]
	High	0.112	0.025	[0.053,0.189]			

Note: \*\*\* means  $P < 0.01$ , \*\* implies  $P < 0.05$  and \* stands for  $P < 0.1$

**Table 9. Result of a hypothesis test**

Hypothesis 1	The perception of corporate social responsibility could have a positive impact on the consumers' purchase intention.	True
Hypothesis 2	The intermediary role of altruistic attribution in the perception of corporate social responsibility and consumers' purchase intention	True, partial intermediary
Hypothesis 3	Consumer's perceived efficacy could have positive modulation on the relationship between corporate social responsibility and altruistic attribution	True
Hypothesis 4	Corporate social responsibility - corporate ability belief could have negative modulation on the relationship between altruistic attribution and consumers' purchase intention	True

## 4. RESULTS AND DISCUSSION

### 4.1 Results

The research keeps exploring the relationship between corporate social responsibility, perceived efficacy, altruistic attribution, corporate social responsibility- corporate ability belief and consumers' purchase intention. The research has a key study on the modulation and intermediary efficacy among several variables by activating the ethical behaviour consciousness of the respondents in form of real cases introduction and collecting investigation data through the virtual situation as well as the multiple regression model and bootstrapping. The main result of the research is shown as follow:

- i. The research finds that there is a significant positive impact of corporate social responsibility on consumers' purchase intention, which is consisted of the researches of a vast of scholars. It means that enterprises undertaking social responsibility could improve consumers' purchase intention.
- ii. Between corporate social responsibility and consumers' purchase intention, the introduced altruistic attribution variable is intermediary variable, and it is found that it is the same as the previous researches that altruistic attribution could partly intermediate corporate social responsibility and consumers' purchase intention [11][57].
- iii. Between corporate social responsibility and altruistic attribution, the introduced perceived efficacy is a modulation variable, and it is found that perceived efficacy could have positive modulation on the relationship between corporate social responsibility and altruistic attribution. It means that consumers would have more agreement that enterprises' altruistic attribution in undertaking social responsibility activities is for the community

- profit when they have a higher perception of the contribution degree of the purchase behaviour to the society.
- iv. Between altruistic attribution and consumers' purchase intention, the introduced corporate social responsibility - corporate ability belief is to test the relationship among the three parties as a modulating variable. It is found that corporate social responsibility - corporate ability belief could have negative modulation on altruistic attribution and consumers' purchase intention. Hence, it could be said that the consumers who think corporate social responsibility and the corporate ability belief are in opposition would have weakened purchase intention. Seen from perceived efficacy and corporate social responsibility - corporate ability belief these two modulating variables, the personal subjective characteristics of consumers could modulate the impact of corporate social responsibility on consumers' purchase intention.

Through the test of the model in the research, there would be a partial explanation on the donations of Mengniu and Yili these two companies causes different purchase behaviours of consumers. Mengniu and Yili both donate, but consumers still support Mengniu's product. The reason behind it is the guess of consumers on the motivations of two companies participating in the corporate social responsibility activities, which would affect their purchase intention to the products.

### 4.2 Main Contribution

The main model framework of the research is to be built based on attribution theory to have a study of the influencing mechanism of corporate social responsibility on consumers' purchase

intention. The main contributions of the research on the academic circle and the practical circle are as follows:

- (i) Among the existing researches on corporate social responsibility, most of them are carried out by western scholars in western society; while the research of corporate social responsibility in China is still at the beginning. There is less research on corporate social responsibility when searching attribution theory in Chinese CNKI. Therefore, the research begins from the actual case to research the influencing mechanism of corporate social responsibility on consumers' purchase intention through the investigation method of virtual situation, which meets the Chinese market economy in rapid development. Since China is in rapid development, economic development must impose a great impact on the social environment, and the conflict turns to be fiercer and fiercer. It has been an important research direction for the academic circle and practical circle to study how enterprises could balance the undertaking of social responsibility and their ability development. Hence, the research's result of influencing mechanism on corporate social responsibility on consumers' purchase intention could be a supplement of the aspects mentioned above.
- (ii) Most scholars think that the influencing factors of consumers' purchase intention are formed by many aspects, and the respond of consumers to corporate social responsibility is very complicated. When consumers are having activities, besides the impact of the outer environment on consumers, personal subjective cognition is a very important influencing factor. Therefore, the research builds up a comprehensive model framework to study the influencing mechanism of external and internal factors on corporate social responsibility. Meanwhile, the research explores the modulation variables of consumers' intention from the aspect of individual characteristics of consumers, which is an improvement and supplement to the present study filed on corporate social responsibility.

### **4.3 Research Suggestions**

Through the conclusion of the research, it aims to have a more purposeful implementation of

relevant activities for enterprises to undertake social responsibility and carry out marketing events. As for how enterprises carry out corporate social responsibility effectively, here are some suggestions in the research:

- (i) When carrying out activities, enterprises should think highly of corporate social responsibility. In the research, the enterprises undertaking corporate social responsibility could add the purchase intention of consumers compared with that without corporate social responsibility. Under the current market economy, product homogeneity is becoming more and more serious and the competition among enterprises become fiercer and fiercer. Therefore, enterprises could deem the undertaking of social responsibility as the core competitiveness to win the market from fierce competition.
- (ii) The research finds that consumers' perceived efficacy would strengthen the relationship between corporate social responsibility and Altruistic Attribution. Therefore, enterprises should pay attention to the consumers' perceived efficacy when carrying out social responsibility. They should try to make consumers agree that purchasing products could make a contribution when the enterprises undertake social responsibility. For example, it could be written in the product that a certain amount of money will be invested in public welfare undertakings for each product purchased.
- (iii) It is found from the research that corporate social responsibility - corporate ability belief would have negative modulation of relationship between the attribution of perceived efficacy and consumers' purchase intention, which means that consumers would still reduce their purchase intention when they find the enterprise could not ensure the quality of products when undertaking social responsibility although they have higher attribution of perceived efficacy. Therefore, enterprises should ensure their product quality when undertaking social responsibility, and it insists on giving a priority to product quality. At the same time, enterprises should have greatly publicized their quality to assure consumers with a fact that enterprises would not reduce the quality when undertaking social responsibility.

## 5. CONCLUSION

Although the research could be a certain supplement to the field of corporate social responsibility, there is a certain limitation in the study. Here are the following aspects:

- (i) The limitation of investigation methods: In the research, the virtual situation is adopted in the questionnaires; but in the reality, consumers' respond to corporate social responsibility is very complicated. And there are different response of various industries to consumers in undertaking corporate social responsibility. For example, consumers would have a different response to tobacco enterprises and general industries in undertaking corporate social responsibility. Therefore, in the following researches on corporate social responsibility, much more influencing factors should be in consideration.
- (ii) Limitation of research samples: Campus students are the main sample in corporate social responsibility in the research. The campus students have larger knowledge and they could stand for the high-consumption group in the future, but the consumption structure is multilayers in the huge market economy in China, so there is less representativeness in the study sample. Therefore, in the following research, it could be considered to increase multi-level research samples.
- (iii) Except for consumers' perceived efficacy, there are much more factors to affect consumers' Altruistic Attribution, such as consumer trust, social identity and so on. Hence, in the later researches, it could be considered to add other factors in the study of the impact of Altruistic Attribution.
- (iv) The premise of the research is that all consumers are ethical during the consumption, but not all people would care about whether the enterprises of the product purchased by them would undertake corporate social responsibility in the reality, which means that not all consumers are ethical. Hence, their objectives of consumers when purchasing ethical products is not considered in the research.

## DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models

(ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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