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# Influential Factors for SMEs of Environmentally Friendly Management in Chinese Distribution Industry\*

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## Abstract

**Purpose:** Environmental pollution problems have become more and more serious, how to effectively protect the environment has become a hot spot of concern to all sectors of society. The way to solve this problem is environmentally friendly management. However, theoretical perspectives and research frameworks of existing research on environmentally friendly management are still unclear. This study aims to examine how the CEO's beliefs for SMEs of Chinese distribution industry affect the environmentally friendly management based on institutional theory. **Research design, data, and methodology:** This paper collected data from 215 SMEs in China distribution industry and conducted a series of data analysis and hypothesis testing based on an institutional theory perspective using Amos and SPSS to verify the effects of regulatory pressure, normative pressure, and imitation pressure on firms' environmentally friendly management. **Results:** Through the analysis, this paper tests that normative pressure and imitative pressure have a positive effect on CEO's beliefs. However, regulatory pressure did not have a significant effect on beliefs of CEO. Meanwhile, the degree of CEO's beliefs has a positive effect on environmentally friendly management in Chinese distribution SMEs. **Conclusions:** Theoretical contributions, practical implications, and future research directions are discussed.

**Keywords:** Environmentally Friendly Management, Chinese Distribution Industry, Normative Pressure, Imitation Pressure, Regulatory Pressure

**JEL Classification Code:** C12, C38, D22

## 1. Introduction

Since the industrial revolution, companies have been expanding their production in pursuit of economic benefits. The traditional production method that emits large amounts of harmful substances in the process of consuming energy has had a negative impact on the ecological environment (Mukherjee, 2015). Global environmental problems such as energy shortages, environmental pollution, and climate

change have gradually intensified and become important obstacles to sustainable human development (Uzzell, 2000).

With the rapid development of China's economy, the problem of environmental pollution has become more and more serious and has gradually become an important issue that Chinese society is eager to solve. How to effectively protect the environment has become an object of concern for all walks of life in society (Huang, Zhang, & Deng, 2006). While air quality has improved in some cities in recent years,

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of the 338 cities that recorded data on air quality, two-thirds were still considered moderately or severely polluted (Wu & Hu, 2019). Research indicates that SMEs are responsible for 60-70% of all industrial pollution, 40-45% of atmospheric emissions and water and energy consumption, and 70% of industrial waste production (Heras & Arana, 2010; Daddi & Iraldo, 2016). These SMEs include many retailers and distributors of large companies that have a significant impact on the environment. To solve these environmental pollution problems, we need to start with the enterprises themselves. Efforts should be made to spread environmental business practices that save resources and reduce pollution.

Environmentally friendly management begins with reflecting on human production activities in the face of global environmental degradation and the energy crisis. In the research related to environmental management, some scholars have elucidated the influencing factors of environmental management based on institutional theory. Porter and Van der Linde (1995) proposed that regulatory pressure can effectively promote environmental management activities. Subsequent researchers have further expanded Porter's view. They argue that institutional pressures, including regulatory pressures, are the most direct and fundamental influences on environmental business (Berrone, Fosfuri, Gelabert, & Gomez-Mejia, 2013). Therefore, we investigate the influencing factors of environmental business for SMEs of Chinese distribution industry using institutional theory.

## **2. Literature Review**

### **2.1. Environmentally Friendly Management in SMEs**

Notions about sustainability have influenced enterprises through government action, environmental groups and consumer advocacy. Many large companies have moved to incorporate environmentally friendly management into their strategic practices. Enterprise environmental management is to integrate the concept of environmental protection into the production and management activities of enterprises according to the requirements of an environmental economy, pay attention to resource and environmental management, save resources and control pollution, so as to achieve sustainable development. We believe that environmentally friendly management is about integrating environmental protection into business operations and implementing it throughout the whole process of business. Environmentally friendly management is significant to the development strategy of the company and can be considered as a means of comprehensive adjustment of the business strategy. However, the adoption rate of environmentally friendly

management is still low in SMEs due to insufficient resources, the belief of business owners and owner-centered decisions (Johnstone, 2020; Long, Looijen, & Blok, 2018; Namagembe, Ryan, & Sridharan, 2019).

There is no fundamental difference in the process between environmentally friendly management and general management activities. Both types of operations include development and research, production, distribution, and sales. However, there are characteristics of environmental management compared to general business activities because of the importance of environmental performance in such management. According to Brammer, Hojmosse and Marchant (2012), the implementation of an environmental management system can bring internal and external benefits to the organization, but that the smaller the company, the lower the perception of this benefit.

Researchers have studied the environmentally friendly management of SMEs from different perspectives. Compared with large enterprises, SMEs are more suitable for adopting low-cost and easy-to-implement environmental management strategies (Duralia, 2015; Raar, 2015). Apart from cost considerations, due to the lack of environmental protection awareness of business owners, SMEs often have little knowledge of environmental standards and are unable to conduct professional training for employees. Effective environmental management incentive policies and government movements are crucial for SMEs to participate (Puppim de Oliveira & Jabbour, 2017; Quader, Kamal, & Hassan, 2016). If the participation of SMEs is not high, the government can give support. Such as technical advice related to the development of environmentally friendly products, improving processes under the guidance of ecological innovation concepts, or encouraging the development of partnerships between SMEs (Raharjo, 2019; Seth, Rehman, & Shrivastava, 2018). Therefore, cost factors, human resource factors, owner/manager's environmental protection concept, government activities and cooperation between SMEs are the challenges that SMEs need to face in implementing environmentally friendly management.

### **2.2. The Institutional Pressure**

Institutional theory has gained importance as a popular and powerful explanation of individual and organizational behavior (Tina Dacin, Goodstein, & Richard Scott, 2002). Institutional theory is focused on the impact of external factors on organizational decision making (Scott, 1992). As external pressures, such as those from government and customers, can have an impact on internal behavior (Sarkis, Zhu, & Lai, 2011). Institutional pressure refers to the external pressure that requires a series of rules and regulatory follow-up due to the legitimate claims of firms (Okhmatovskiy & David, 2012). Based on Scott's (2008)

proposal that institutions consist of regulatory, normative, and imitative elements, we divide institutional pressure into the following three dimensions.

Regulatory pressure is mainly a legal system and industry guidelines promulgated by government agencies or non-profit organizations that are conducive to social development (Ellul, Jotikasthira, & Lundblad, 2011). The role in business is mainly to establish behavioral norms, monitor the implementation of corporate behavioral norms, and standardize corporate behavior through reward and penalty situations. For example, government pollution control or pollution prevention requirements for companies, including regular visits and monitoring, fines, or reward actions based on the company's environmental performance. Companies may face severe penalties for violating relevant environmental regulations (Davidson & Worrell, 2001).

Normative pressure refers to the social values, culture, and beliefs that companies follow in their actual activities (Tate, Dooley, & Ellram, 2011). Normative pressure influences the business activities of enterprises mainly through the establishment of norms and guidance of values by industry associations (Berrone et al., 2013). Compared to regulatory pressure, it doesn't have to be legal, but it does have an effect on how businesses act.

Imitation pressure is also known as cognitive pressure (Galaskiewicz & Wasserman, 1989), and is relatively small in scope. Imitation pressure refers to the pressure felt by a firm to imitate existing codes of conduct or industry-accepted experiences. Henisz and Delios (2001) suggest that individuals and organizations in social networks have a tendency to imitate other network members; in the presence of environmental uncertainty, organizations can emulate the successes of competitors and take the same actions as competitors while reducing risk. Imitation pressure is different depending on where the company is, and the effects it has on the company are different as well.

The ROI of environmentally friendly management is not clear in the short term, so institutional theory provides a theoretical basis for companies' environmental management behavior.

### 3. Methodology

#### 3.1. Hypotheses Development

##### 3.1.1. Institutional Pressure and CEO's Beliefs

Some researchers argue that top executives, especially CEOs, have substantial influence on organizational decision-making and the subsequent performance outcomes (Huang, 2013; Fabrizi, Mallin, & Michelin, 2014; Andersén, Jansson, & Ljungkvist, 2019). However, on the ground of institutional theory, some researchers claim that executives have little control over the direction of their business

because their influence is largely limited by internal and external factors, such as organizational inertia and established norms (DiMaggio & Powell, 1983; Hannan & Freeman, 1977; Haveman, 1993). To bridge the gap between these two approaches, Hambrick and his colleagues suggest that CEOs may make managerial decisions in different degrees of context and that researchers need to contextualize their research (Hambrick & Quigley, 2014; Johns, 2017). Environment regulations are essentially set by government agencies, which act as external stakeholders to put pressure on businesses. Stakeholder theory provides a new entry point for the study of the drivers of environmental innovation (Parmar, Freeman, Harrison, Wicks, Purnell, & De Colle, 2010). Stakeholders are the groups that can directly or indirectly influence a company's strategy or behavior, and their environmental decision-making behavior promotes environment business operations.

Regulatory pressure is the first dimension of institutional pressure. Regulatory pressure and rewards and penalties systems have a significant impact on the long-term development of the organization. Organizations, on the other hand, have a strong incentive to follow laws and regulations, government opinions, or rules (Ellul et al., 2011). Government's ability to monitor gives organizations the characteristic of being unable to resist monitoring pressure. If a company violates laws and regulations set by the government, it has to pay a high price even if its short-term survival is not threatened. This cost is not only the additional cost of financial penalties, but also the negative impact on the company's social image and relationship with the government, which in turn negatively affects the company's sustainable development.

Due to the consideration of costs and benefits, it is difficult to determine the strategy of corporate social responsibility fulfillment. Regulatory pressure has certain regulatory power to make up for the shortcomings of the insufficient motivation of enterprises to fulfill social responsibility (Evans, Tulloch, Law, Raiter, Possingham, & Wilson, 2015). Therefore, regulatory pressure forces enterprises to perform social responsibility actions while giving them political legitimacy and helping them to survive and grow in the market environment. Instead, the company may lose its eligibility to continue operating (Oliver, 1991). Companies that are subject to environmental regulations by government agencies get a lot of support from top management to avoid costly fines if they don't do what they're supposed to do (Banerjee, 1998). Thus, the current research assumes that,

**H1a:** Regulatory pressure has a positive effect on the CEO's beliefs.

Norms are a collection of value systems and codes of behavior shared by a society or industry. Compared with

regulatory pressure, normative pressure is more implicit and difficult to identify. Norms are mainly shared concepts and standards of meaning that are formed from national and regional cultures, value systems, and normative beliefs (Michailova & Hwee Ang, 2008). The principle of normative pressure actually derives from the social and cultural expectations to which the actor is subject and the opinions of specialized agencies. Success is more likely if the organization takes into account these emotions, values, and social culture (Schneider, 1999). Specifically, this normative pressure arises in areas such as trade associations, industry associations, groups of professionals, unions and trade union organizations, environmental protection organizations and other nonprofit organizations, or consumer unions and suppliers. It can be seen that the core connotations of normative pressure include value systems and behavioral norms. There are rules and conditions that organizations must follow when they act in certain ways (Margolis & Walsh, 2003). When social responsibility is expected of companies in terms of value systems and codes of conduct, the CEO of the company first tries to recognize and understand this.

**H1b:** Normative pressure has a positive effect on CEO's beliefs.

The source of imitation pressure is individual and organizational awareness and understanding of the external environment. Institutional theory suggests that the nature of imitative behavior is a reflection of uncertainty. Imitative behavior helps reduce organizational complexity and uncertainty by imitating the best practices of other organizations in the external environment, thereby ensuring their legitimacy and establishing their position in the social system (Useem, 1988). In order to respond to market competition, reduce uncertainty or minimize decision errors, CEOs analyze the decision-making behavior of industry leaders and learn from the leading companies (Bansal & Roth, 2000). Imitative behavior of CEOs is caused by imitation pressure, under which the operator's sense of environmental responsibility is changed and corresponding rational motives and behaviors are generated. In response to competition from businesses that have been certified by the environment, top management often decides to use green business strategies (Terlaak, 2007).

**H1c:** Imitation pressure has a positive effect on CEO's beliefs.

### **3.1.2. CEO's Beliefs and Implementation of Environmentally Friendly Management**

Wu, Guan, Wang and Xie (2014) believe that the CEO refers to those who execute corporate strategic decisions and grasp the future development direction of the company.

From the definition of a CEO, the formulation and effective implementation of a particular strategy are inseparable from the CEO's beliefs. Therefore, a CEO's environmental awareness can determine how a company responds to the environment. The CEO's belief in environmental protection is also an important factor in promoting green business operations.

The beliefs of the CEO are a big part of what happens inside the company when it comes to environmental management right now. The CEO's beliefs are a positive driver of corporate environmental innovation (Zaharie, Tantau, Zaharie, Tantau, Gheorghe, Gheorghe, ... & IBDPROSPECT Study Group, 2016). Managers will directly determine the environmental management activities of the company, thus influencing corporate environmental trends and environmental strategies (Fineman, 1997). When corporate CEOs support environmental management (Chatterjee, Grewal, & Sambamurthy, 2002), external environmental pressures can be effectively transformed into important drivers of internal environmental operations. For example, CEO of Toyota is directly involved in corporate environmental activities, and through top manager's integrated involvement and support of corporate green management activities, all company employees can be actively mobilized to actively implement corporate environmental strategies (Coddington, 1993; Banerjee, Iyer, & Kashyap, 2003). Thus, we suggest that the impact of external pressures on corporate environmental management activities may be influenced by internal factors such as the beliefs of corporate CEOs.

In order to systematically implement environmentally friendly management, this study considers the implementation of environmentally friendly management from both internal and external aspects. That is, it looks at environmental management, environmental design and production in the SME, and how the company works with outside partners. Lavie (2006) suggests that environmental cooperation can indirectly affect business performance. Due to the evolution of natural environmental conditions, stakeholder needs, and how environmental sustainability is achieved, firms are constantly seeking partnerships to achieve corporate sustainability. The idea of incorporating sustainability issues into supply chain relationships is becoming more common in order to reduce the environmental impact of products. In this study, we want to explore how the CEO's beliefs influence the decision to implement environmentally friendly management in a company. Thus, the current study assumes that,

**H2a:** CEO's beliefs have a positive effect on internal management of environmentally friendly management.

**H2b:** CEO's beliefs have a positive impact on environmentally friendly design and production.

**H2c:** CEO's beliefs have a positive impact on partnership for environmentally friendly management.

In a word, all the hypotheses can be delineated by Figure 1.

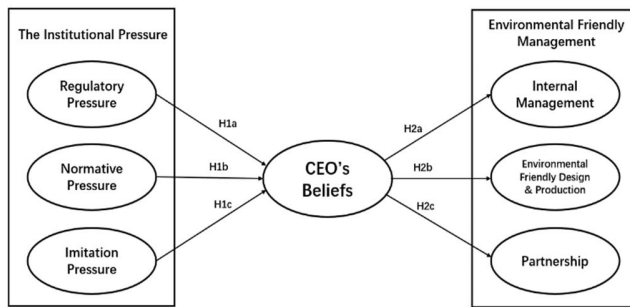


Figure 1: Research Model

### 3.2. Measurements

*Measurements of Regulatory pressure.* Regulatory pressure refers mainly to pressure from government departments, legal bodies, local governments, industry associations, and parent companies on which one's own business depends. Therefore, in the process of promoting environmental management activities, the regulatory group or the industry association to which it belongs, contract conditions, and the parent company are required to respond to the level of pressure exerted. Six items were used to measure regulatory pressure: 'Our company is required by relevant administrative bodies such as the government or local self-governing bodies to conduct environmental friendly management,' 'The industry organization (association) we work for requires our company to conduct environmental friendly management,' 'Our company is forced to conduct environmental friendly management due to tender or contract conditions,' 'If we do not conduct environmental friendly management, we will be adversely affected by our parent company (formerly Clear Corporation),' 'Environmental friendly management is necessary to comply with legal regulation or system,' 'In order to get financial support, we cannot afford not to have environmental friendly operation' (Kostova & Roth, 2002; Zhu & Sarkis, 2007). And a 5-points scale (1 = not at all, 5=very much) was used to measure these items.

*Measurements of Normative pressure.* Normative pressure refers to the social values, culture, and beliefs that companies follow in their actual activities. Normative pressure influences business activities mainly through industry associations, expert norm establishments, and values guidance. This study utilizes references to existing researchers (Teo, Wei, & Benbasat, 2003). We adopted five items: 'Suppliers have a high level of environmental

friendly operation,' 'The level of environmental friendly management of our customers is high,' 'Our company also felt the necessity of environmental friendly management when we attended a seminar on technology industry trends,' 'We are getting advice or recommendation from experts on environmental friendly management,' 'When meeting with managers of companies in heterogeneous industries, they emphasize the importance of environmental friendly management' (Chatterjee et al., 2002; Latif, Mahmood, Tze San, Mohd Said, & Bakhsh, 2020; Shibin, Dubey, Gunasekaran, Hazen, Roubaud, & Gupta et al., 2020) to measure the items on 5-points scale (1=not at all, 5=very much).

*Measurements of Imitation pressure.* Imitation pressure refers to the pressure companies feel when they imitate existing codes of conduct or industry-accepted experiences (Teo et al., 2003). We decided to use three items: 'Surrounding companies are benefiting from the implementation of environmentally friendly management,' 'Surrounding companies are seen as friendly by other companies through the implementation of environmental friendly management,' 'The surrounding companies are considered friendly by their suppliers through the implementation of environmental friendly management' (Chatterjee et al., 2002) on 5-point scales (1=not at all, 5=very much) to measure imitation pressure.

*Measurements of CEO's beliefs.* The main functions of the CEO of an enterprise are to establish the vision and mission of the enterprise's development, to grasp the overall development of the enterprise, and to set strategic goals at different stages. as well as guiding the development direction of the enterprise through the rational allocation of resources within the enterprise. These six items are: 'Our company's CEO has presented a clear vision of environmental friendly management to our members,' 'Our company's CEO actively sets the strategy for environmental friendly management,' 'Our CEO sets and monitors environmental friendly management goals and standards,' 'Our CEO believes in the benefits of environmental friendly management for our company,' 'Our CEO believes that environmental friendly management will create corporate competitiveness,' 'Our CEO believes that environmental friendly management is the key to our operations' (Barki & Hartwick, 1994; Liao, Dong, Weng, & Shen, 2019; Ren, Jiang, & Tang; 2022), which are scored on 5-point scale (1=not at all and 5=very much).

*Measurements of Environmentally Friendly Management.* Environmentally friendly management is a business activity that unifies business management with environmental protection. Environmentally friendly management is an important way to fully deploy the company's development strategy and environmental protection strategy. Environmentally friendly management

is operated through the whole process of internal management, design and production, and partnership (Sarkis, 2003).

Then we will use seven items to measure their internal management on 5-point scale (1=not at all and 5=very much) (Zhu, Sarkis, & Geng 2005; Balon, 2020). 'Middle management support for environmentally friendly management,' 'Interdepartmental cooperation for environmentally friendly management,' 'Quality management for corporate environmental management,' 'Environmental compliance and audit program,' 'ISO14001 certification,' 'Placement of environmental (HACCP, etc.) marks (labels) on products,' 'Implementation of environmentally friendly management system.'

There are three items on 5-point scale ranging from 1=not at all and 5=very much are used to measure environmentally friendly design and production (Sarkis, 2003; Zhu & Sarkis, 2006; Xu, Mathiyazhagan, Govindan, Haq, Ramachandran, & Ashokkumar, 2013). 'Product/process design that reduces energy/resource consumption,' 'Product/process design for recovery and recycling of materials or components (including packaging material containers, etc.),' 'Product/process design to reduce hazardous components (including packaging materials) or manufacturing process hazards.

Our research uses seven items to measure this partnership for environmentally friendly management (Zhu et al., 2005; Vachon & Klassen, 2006). There are : 'Collaboration with suppliers on environmental friendly management,' 'Audit of suppliers' environmental friendly management,' 'ISO14001 certification of suppliers,' 'Assessment of environmental friendly management of secondary suppliers,' 'Designing environmental products in cooperation with customers (companies),' 'Cooperation with customers (companies) for production of environmental products,' 'Cooperation with customers (companies) for environmental packaging', on 5-point scale (1=not at all, 5=very much).

## 4. Results

### 4.1. Demographic Analysis Results

The empirical analysis of the research model and hypotheses proposed in this study was conducted with a questionnaire survey of the management of Chinese SMEs. This research conducted a survey online to collect 250 questionnaires in total. We removed 35 questionnaires that participants did not pay enough attention to, and ended up keeping 215 questionnaires. The details are shown in Table 1.

**Table 1:** Demographic Analysis Results

	Variable	Frequency	Percentage (%)
Years of work	Under 2 years	0	0%
	2-5 years	11	5.1%
	5-10 years	61	28.3%
	10-15 years	79	36.7%
	Over 15 years	64	29.8%
Number of employees	Under 5 people	0	0%
	5-50 people	18	8.4%
	50-300 people	82	38.1%
	300-600 people	65	30.2%
	Over 600 people	50	23.3%
Position	Executive Director / General Manager	20	9.3%
	Deputy	20	9.3%
	Director	97	45.1%
	Ministers	78	36.3%
	Employee	0	0%
	Other	0	0%
Work department	Production/ technical department	89	41.4%
	Research/ Development Department	53	24.7%
	General Affairs / Accounting Department	28	13.0%
	Computer/Planning Department	16	7.4%
	Sales/PR Department	25	11.6%
	Other	4	1.9%

### 4.2. Reliability and Validity

Reliability is the degree to which a measurement instrument measures the actual values of as many measured variables as possible without error. First, Cronbach's  $\alpha$  was calculated in order to measure the internal consistency between items. The Cronbach's  $\alpha$  for each factor are shown in Table 2. With a Cronbach's  $\alpha$  of at least 0.8 for each factor, it can be said that all the measured items are internally consistent. In other words, the measurement items have high reliability.

**Table 2:** Results of Analyzing Principal Components

Metric	Component							$\alpha$
	1	2	3	4	5	6	7	
IPEM4	.780							.914
IPEM1	.763							
IPEM6	.755							
IPEM3	.732							
IPEM7	.728							
IPEM5	.725							
PC4		.761						.898
PC6		.747						
PC5		.744						
PC2		.699						
PC7		.617						

RP5			.820						
RP3			.786						
RP6			.784						
RP4			.751						
RP1			.745						
RP2			.703						
EB5			.683						
EB2			.676						
EB1			.668						
EB4			.629						
EB3			.612						
NP2				.733					
NP5				.723					
NP4				.700					
NP1				.663					
NP3				.648					
EFDP3					.815				
EFDP1					.797				
EFDP2					.785				
IP3						.818			
IP2						.798			
IP1						.694			
KMO Measure of Sampling Adequacy								.929	
Bartlett's Test of Sphericity								Approx. Chi-Square	5073.811
								df	666
								Sig.	.000

Note: Analytical method: Neutral analysis; Rotation method: Berimax with Kaiser regulations.

Table 2 gives the results of KMO measure and Bartlett's test of sphericity for appropriateness of criteria formation. The result of KMO analysis shows 0.929 and it can be said that the information of this study is suitable for factor analysis. The results of the analysis showed a significant probability of 0.000 for the Bartlett's sphericity test, and in general the correlation between the variables was significant. Therefore, the collected data can be judged as suitable for factor analysis.

**Table 3: Results of Convergent Validity Analysis**

	Items	Estimate	S.E.	S.E.	P	CR	AVE
IP	IP3	0.738				0.798	0.570
	IP2	0.685	9.249	0.1	***		
	IP1	0.834	9.667	0.111	***		
RP	RP4	0.751	11.252	0.090	***	0.889	0.573
	RP5	0.802	12.225	0.076	***		
	RP6	0.741	11.297	0.087	***		
	RP3	0.784					
	RP2	0.729	10.744	0.074	***		
	RP1	0.731	11.051	0.069	***		
NP	NP3	0.729				0.849	0.530
	NP2	0.767	10.49	0.113	***		
	NP1	0.756	10.207	0.100	***		
	NP4	0.647	8.918	0.095	***		
	NP5	0.739	10.12	0.105	***		

EB	EB4	0.770				0.906	0.616
	EB5	0.719	10.947	0.084	***		
	EB6	0.799	12.513	0.082	***		
	EB3	0.825	12.785	0.078	***		
	EB2	0.764	11.819	0.083	***		
	EB1	0.823	12.956	0.077	***		
IPEM	IPEM4	0.768				0.904	0.612
	IPEM5	0.774	11.825	0.092	***		
	IPEM6	0.806	12.205	0.093	***		
	IPEM3	0.765	11.486	0.092	***		
	IPEM7	0.761	11.433	0.090	***		
EFDP	EFDP1	0.810				0.832	0.623
	EFDP2	0.834	11.24	0.102	***		
	EFDP3	0.737	10.433	0.095	***		
PC	PC3	0.629				0.887	0.569
	PC4	0.743	9.248	0.142	***		
	PC5	0.812	9.504	0.150	***		
	PC2	0.732	9.178	0.148	***		
	PC6	0.825	9.64	0.153	***		
	PC7	0.758	9.112	0.140	***		

Note: \*\*\*: P<0.001.

### 4.3. Convergent

When measuring the same concept, a high correlation between the values of the various questions measures the concept is considered to be centrally feasible. In this study, the average variance extracted value (AVE) was used to evaluate the feasibility of concentration. The average variance extracted value (AVE) is the average of the squared values of the standardized factor loadings, and is considered feasible for centralization when its magnitude is greater than 0.5. From the results of Table 3 concentration feasibility analysis, the magnitude of AVE values was all above 0.5, which can be judged as having concentration feasibility.

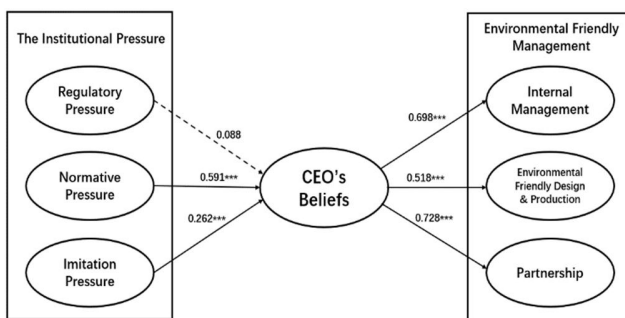
### 4.4. Discriminant

In this paper, the feasibility of discrimination was evaluated by comparing the values of correlation coefficients between measured variables with the square root values of the AVE values of each variable. From the results of the discriminant feasibility analysis in Table 4, the square root values of the AVE values of all variables were greater than the values of the correlation coefficients between those variable and other variables. According to this, it can be said that this study model is good at separating the variables.

**Table 4:** Results of Discrimination Analysis

	NP	RP	IP	EB	PC	EFDP	IPEM
NP	<b>0.728</b>						
RP	0.372	<b>0.757</b>					
IP	0.448	0.293	<b>0.755</b>				
EB	0.676	0.353	0.510	<b>0.785</b>			
PC	0.492	0.313	0.367	0.636	<b>0.754</b>		
EFDP	0.321	0.248	0.263	0.423	0.462	<b>0.789</b>	
IPEM	0.455	0.400	0.382	0.612	0.492	0.344	<b>0.782</b>

#### 4.5. Testing Model

**Figure 2:** Hypothesis Verification Result

Statistical analysis and testing of the model and hypotheses of this study were performed using AMOS 24.0 for structural equation modeling. The main fit indices of the model in this study were:  $CMIN/DF=1.642$ ,  $P=0.000$ ,  $CFI=0.919$ ,  $RMSEA=0.055$ , which can be considered acceptable compared to the general conformity reference values.

As shown in Figure 2, the path coefficient between regulatory pressure and CEO's beliefs was 0.088,  $t=1.484$ ,  $p=0.138$ , which was not significant and research hypothesis H1a was rejected. The path coefficient between normative pressure and CEO's beliefs was 0.591,  $t=6.89$ ,  $p<0.001$ , statistically significant, judging the presence of a positive influence, and hypothesis H1b was accepted. The path coefficient between imitation pressure and CEO's beliefs is 0.262,  $t=3.584$ , significant level  $p<0.001$ , statistically significant, judging the existence of positive influence and hypothesis H1c is accepted.

The path coefficient between CEO's beliefs and internal environmentally friendly management was 0.698,  $t=9.376$ ,  $p<0.001$ , statistically significant, judged to have positive influence and accepted hypothesis H2a. The path coefficient between CEO's beliefs and environmentally friendly design and production was 0.518,  $t=6.555$ ,  $p<0.001$ , statistically significant, judged to have a positive influence and therefore hypothesis H2b was accepted. The path coefficient between CEO's beliefs and partnership was 0.728,  $t=9.293$ ,  $p<0.001$ , statistically significant, judging that there is a positive influence and hypothesis H2c was accepted.

## 5. Discussion

### 5.1. Research Summary

To understand the institutional factors affecting CEO's beliefs in this study, three institutional pressures proposed in institutional theory were set as independent variables, and the impact of these institutional pressures on environmentally friendly management in SMEs of Chinese distribution industry through CEO's beliefs was analyzed. Based on institutional theory, the effects of regulatory pressure, normative pressure, and imitative pressure on CEO's beliefs were analyzed, as well as the effects of CEOs on firms' internal environmentally friendly management, environmentally friendly design and production, and partnership for environmentally friendly management.

In this study, the research model and hypotheses were identified through an online questionnaire survey of CEOs, R&D, and production leaders of Chinese SMEs in distribution industry. Statistical characteristics, reliability analysis, factor analysis, feasibility analysis, and structural equation analysis were conducted using SPSS 24.0 and AMOS 24.0 to perform the research model and hypothesis testing. The analytical results of this study are summarized as follows:

First, among the three institutional pressures that influence CEO's beliefs, imitative and normative pressures have a significant impact on CEO's beliefs, and regulatory pressure has an insignificant impact on CEO's beliefs. Moreover, among the pressures that have a significant impact on CEO's beliefs, normative pressure has a stronger influence than imitative pressure. In other words, it can be seen that among the institutional pressures of environmentally friendly management in Chinese SMEs, normative pressures have the greatest impact on CEO's beliefs.

Second, the CEO's beliefs positively influenced the implementation factors of environmentally friendly management, environmentally friendly design and production, and partnership, with the greatest impact on partnership.

### 5.2. Theoretical Contributions

Based on institutional theory, this study examines the influencing factors of environmentally friendly management in SMEs by demonstrating the mediating role of CEO beliefs between institutional pressure and environmentally friendly management in SMEs, thereby promoting an in-depth understanding of the antecedents environmentally friendly management in SMEs.

Many existing studies have emphasized the impact of institutional pressure on environmentally friendly business



through their research on the influencing factors of environmentally friendly management in firms, mainly focusing on developed countries. This study analyzes how institutional pressures emphasized in existing studies affect the implementation environmentally friendly management through the CEO's beliefs, focusing on small and medium-sized firms in developing countries, China.

### 5.3. Practical Implication

Our findings also provide useful insights for managers and policy makers on environmentally friendly management in SMEs. First, imitation pressure and normative pressure have a positive impact on CEOs' beliefs, while normative pressure has a stronger impact. Therefore, to strengthen the environmental beliefs of CEOs, starting with imitative pressure is a highly effective approach. Trade associations, industry associations, groups of professionals, unions and trade union organizations, environmental and other non-profit organizations, or consumer coalitions, should be led to recognize the importance of environmentally friendly business practices in order to enhance the environmentally friendly beliefs of CEOs. On the other hand, the impact of regulatory pressure is shown to be insignificant. The reality in China shows that although there are laws and regulations on environmental protection, they are not perfect compared to developed countries. The environmental penalties for stunt companies are not strong enough. In addition, there is often an emphasis on management mainly by government agencies or large enterprises, with inadequate management of SMEs. Accordingly, it is necessary to adapt the government's laws or policies on environmental protection to the reality and strengthen the management of small and medium-sized enterprises.

Second, the CEO's beliefs show a positive impact on the implementation of environmentally friendly management, as hypothesized in this study. The results of this study suggest that for Chinese SMEs, the CEO's environmentally friendly beliefs and awareness are very important drivers of activities related to environmental strategies such as environmentally friendly management. As a way to improve the level of environmentally friendly management, it is important to communicate with government agencies, industry associations, experts in related fields, and top business owners to make them more aware of and believe in environmentally friendly practices.

### 5.4. Limitations and Future Research

This research has multiple implications, but it also has the following limitations. In future studies, empirical research may be needed to take these limitations into account.

First, when selecting the research participants for this study, only the size of the enterprises was considered, and SMEs were selected as the survey participants without considering the selection of industry enterprises (Such as, manufacturers, wholesalers, distributors, retailers, etc.). As a result, the explanatory power of industry on the influencing factors of environmentally friendly business is insufficient. In future research, it is important to group businesses by industry and look into the factors that make them environmentally friendly businesses.

Second, there is no consensus on the relationship between institutional pressure and corporate environmentally friendly management. As this study is in the research on the influencing factors of environmentally friendly management of SMEs in China, it only analyzes the impact of institutional pressure on the environmentally friendly management of enterprises through the CEO's belief. Therefore, it is important to set up descriptive variables for the study that may influence environmentally friendly management.

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