

results of reliability tests on the proposed scales. The results show that the Cronbach's α of every construct, every dimension of each construct and the item-to-total correlation of each item all passed the reliability tests. This means the samples were consistent and stable, and suitable for factor analysis.

4. RESULTS ANALYSIS

4.1 Empirical results

Since all core constructs to be quantified are latent variables, structural equation modelling (SEM) was adopted for data processing and path analysis. The variables, namely, coercive pressure, normative pressure, mimetic pressure, environmental strategy and environmental performance, were introduced to the structural equation, forming a full-model analysis framework (Figure 1). Among them, the three constructs, i.e. coercive pressure, normative pressure and mimetic pressure, were rated against the corresponding items in the questionnaire. Meanwhile, the items for environmental strategy and environmental performance were reduced: the mean of all items in each of the two dimensions was taken as the score of that dimension, and used as a latent variable.

In addition, all variables were subjected to skewness and kurtosis analyses to fulfil the requirements on the distribution of input data. The analysis results confirm that the skewness and kurtosis of every variable were below the required thresholds: the absolute skewness must be smaller than 3 and the absolute kurtosis must be smaller than 10.

Model fitting was performed in two steps: the introduction of the covariance matrix and the iteration on AMOS, a visual program for the SEM. The fitting discloses the relationships between the constructs, and the factor load of each latent variable.

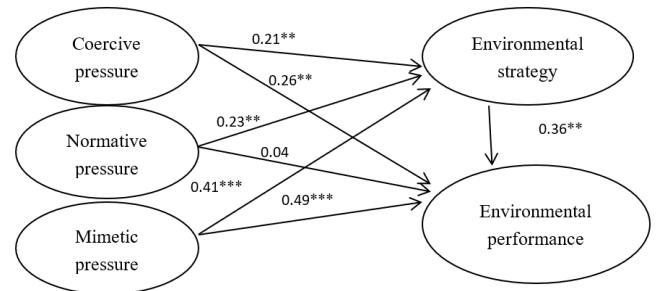


Figure 1. Fitting results of model fitting

Table 5. Path coefficients and test indices of variables in each dimension

Path description	Normalized estimate	P-value	Hypothesis is valid?
Coercive pressure → Environmental strategy	0.21	0.002**	Yes
Normative pressure → Environmental strategy	0.23	0.001**	Yes
Mimetic pressure → Environmental strategy	0.41	***	Yes
Coercive pressure → Environmental performance	0.26	0.002**	Yes
Normative pressure → Environmental performance	-0.04	0.844	No
Mimetic pressure → Environmental performance	0.49	***	Yes
Environmental strategy → Environmental performance	0.36	0.001**	Yes
Test indices of fitting results	Fitting results	Critical values	
χ^2/df	2.974	<2.00 (rigorous) or <3.00 (neutral) or <5.00 (slightly relax)	
GFI	0.917	>0.9; the closer to 1, the better.	
RMSEA	0.067	<0.08 (neutral), <0.05 (slightly good); the smaller, the better.	
RMR	0.044	<0.05; the smaller, the better.	
NFI	0.914	>0.9 (neutral), >0.95 (slightly good); the closer to 1, the better.	
CFI	0.945	>0.9 (neutral), >0.95 (slightly good); the closer to 1, the better.	

Note: ***p<0.001, **p<0.01, and *p<0.05; χ^2/df is ratio of chi-square to the degree of freedom; GFI is the goodness-of-fit index; RMSEA is the root mean square error of approximation; RMR is the root mean square residual; NFI is the normed fit index; CFI is the comparative fit index.

It can be seen from Table 5 that the fitting results were basically satisfactory after the eight paths were corrected based on the residuals outputted by the AMOS. Specifically, the χ^2/df of 2.974 is smaller than the critical value of 3 (neutral value)[68]; the RMSEA of 0.067 is smaller than the critical value of 0.10[69]; the NFI, GFI and CFI all reached the critical value of 0.9 [70]. Besides, the factor load of every latent variable passed the significance test.

The results of model fitting (Figure 1) show that coercive pressure, normative pressure and mimetic pressure have prominent impacts on environmental strategy. Therefore, under the legitimacy constraint, institutional pressure, which involves laws and regulations, policy guidance, industry

standards, public values, corporate identity and behavioral imitation, obviously influences the environmental strategy. In other words, hypotheses 1a, 1b and 1c are valid.

When it comes to the correlation between each dimension of institutional pressure and environmental performance, the path coefficients from coercive pressure to environmental performance and from mimetic pressure to environmental performance were the same with theoretical results and passed the significance tests. Therefore, hypotheses 2a and 2c are valid. However, the path coefficient from normative pressure to environmental performance was -0.04, which is different from the theoretical result, and $p=0.844>0.05$ did not pass the significance test. This means hypothesis 2b failed the model

analysis.

It can also be seen from Figure 1 that environmental strategy greatly influenced environmental performance, which proves the validity of hypothesis 3. Besides, environmental strategy fully or partially mediates the relationships between different dimensions of institutional pressure and environmental performance. Therefore, hypotheses 3a, 3b and 3c were proved valid. Specifically, environmental strategy partially mediates the relationship between coercive pressure and environmental financial performance, and that between mimetic pressure and environmental financial performance; environmental strategy fully mediates the relationship between normative pressure and environmental performance. To sum up, environmental strategy is critical in responding to institutional pressure and promoting corporate environmental performance, although environmental strategies vary greatly among Chinese enterprises. The critical role of environmental strategy is in line with the classic framework of “environment-strategy-performance”[71].

4.2 Discussion

There are three dimensions of the institutional pressure perceived by enterprises: coercive pressure, normative pressure and mimetic pressure. The three dimensions differ in the significance and degree of influence over environmental performance. Our research reveals that both coercive pressure and mimetic pressure have significant positive effects of corporate environmental performance. Further comparison shows that the mimetic pressure exerts a far greater influence on environmental performance than coercive pressure.

The above results indicate that China should increase the coercive pressure and the cost of crimes by implementing stricter laws, regulations, policies and reporting systems on environmental protection. In 2014, the *Environmental Protection Law of the People's Republic of China* was amended for the first time in 25 years. The amendment improves many environmental systems (e.g. environmental monitoring, environmental impact assessment, cross-regional pollution prevention and pollution permit management), and increases the supervision strength and fines. Despite this effort, the law has not been forcefully implemented. The promoting effect of institutional pressure on environmental behavior is weakened by improper acts to obtain legitimacy. For example, some enterprises have committed greenwashing or pretended to adopt environmental strategies [72]. Besides, our surveys on enterprises show that there are relatively few incentives in environmental legislation, and the entire coercive system needs to be improved.

Owing to institutional uncertainty and industry competition, mimetic pressure mainly comes from competition. To maintain the competitive advantage, enterprises are increasingly aware of the importance of environmental legitimacy, under the peer pressure from competitors. In fact, it is very easy to gain advantages in cost, techniques and management by mimicking the environmental behavior of competitors. This is a low-cost and safe means for enterprises to acquire a competitive edge in the market. Thus, environmental performance could be bolstered easily by mimetic pressure, which echoes with our research results.

The positive correlation between normative pressure and environmental performance failed to pass the significance test. The failure can be explained as follows: Since the late 1970s, China has been striving to develop its economy, and started

late in environmental protection. As a result, the normative pressure from the industry, the media and other areas is not sufficiently compulsory. The impact of social norms and values evolves slowly. It is only recently that China begins to focus on environmental issues. There is still a long way to go before the Chinese form a green value system.

5. CONCLUSIONS

The institution-based view of strategy is a relatively new research domain. The academic generally regards the influence mechanism of the institutional environment on corporate strategic behavior as a black box. This paper fully integrates the neo-institutionalism theory of organizational sociology with the theory of enterprise strategic management, and relies on the integrated theory to demonstrate the importance of institutional factors to strategy formulation. Moreover, an empirical analysis was conducted to disclose how much corporate strategic behavior and strategic choices are influenced by institutional factors and the dimensions of institutional pressure, and identify the sources of these influences. By integrating institutional factors into the existing theoretical framework, the authors gave a complete explanation of corporate strategic behavior and its paths, and disclosed the internal mechanism of institutional impacts on corporate strategy. In the meantime, the mature institutional theories for markets and institutional environments in developed countries were extended to the institutional environment of the largest developing country in the world, with the aim to identify how China's institutional environment affects environmental strategy and environmental behavior.

In addition, the research conclusions have certain contributions, shedding new light on the relationship between institutional pressure and environmental performance in China. In our research, the hypothesis that normative pressure, a dimension of institutional pressure, promotes environmental performance failed the empirical test, while the hypotheses that coercive pressure and mimetic pressure promote environmental performance were verified. These results contradict the promoting effect of institutional pressure on environmental performance in foreign scenarios: Phan and Baird [34] demonstrated that environmental performance is greatly promoted by coercive pressure and normative pressure, and slightly promoted by mimetic pressure. The contradiction is resulted from the following two facts: On the one hand, social stakeholders have not formed a value system of environmental responsibility, although China has begun to highlight environmental issues; it takes a long and gradual process to form such a system. On the other hand, China is currently transforming its economic system, causing uncertainties in social development and policy guidance; for stability and safety, an enterprise prefers to mimic the strategic measures of successful or benchmark enterprises.

Of course, there are several limitations of our research, due to its particularity and sensitivity. First, the authors did not compare the influence mechanisms of institutional pressure on environmental performance between different regions, especially the different promoting effects in each dimension of institutional pressure across regions. China is a country with a large landmass. The institutional environment varies from region to region. For example, the eastern coastal cities have a much different institutional environment from the western hinterland. Second, the research is limited to the

manufacturing industry, although different industries differ in the sensitivity to the environmental protection system. To solve these limitations, the future research will probe into the relationship between institutional pressure and environmental performance in different regions and industries of China.

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APPENDIX A

Scale of corporate environmental performance

Variables	Primary indices	Secondary indices	Sources
Environmental financial performance	Increase in sales	Increase in market share and benefits of green products	Dong Ying [11]
		Benefits of recycling by-products	Dong Ying [11]
		Added value of green products	Dong Ying [11]
	Reduction of production cost	Reduction of energy consumption	Dong Ying [11]; Langfield Smith et al. [63]; Thanh Nguyet Phan [9]
		Cost reduction through replacement with green materials	Dong Ying [11]
		Cost reduction through optimization of production steps	Dong Ying [11]; Langfield Smith et al. [63]; Thanh Nguyet Phan [9]
	Environmental benefits	Reduction of waste disposal cost	Dong Ying [11]
		Reduction of accident/pollution fines and charges	Dong Ying [11]; Langfield Smith et al. [63]; Thanh Nguyet Phan [9]
		Benefits of waste recycling	Dong Ying [11]
Environmental quality performance	Better corporate image	Better corporate reputation and environmental image	Dong Ying [11]
	Better relationship with external parties	Better relationships with suppliers and consumers	Dong Ying [11]
		Better relationship with the government	Dong Ying [11]
		Better coordination with other stakeholders like communities and environmental organizations	Dong Ying [11]; Henri and Journeault [64]; Thanh Nguyet Phan [9]
	Better satisfaction	Better consumer satisfaction	Dong Ying [11]
		Better market satisfaction	Dong Ying [11]
Better employee satisfaction		Dong Ying [11]	

Bases of item selection: Langfield Smith et al.[63]; Henri and Journeault [64]; Dong Ying [11]; Thanh Nguyet Phan [9]

Scale of institutional pressure perceived by enterprises

Variables	Items (indices)	Sources
Coercive pressure	International environmental standards and regulations	Zhu and Geng [36]
	Domestic environmental standards and regulations	Zhu and Geng [36]
	Local environmental standards and regulations	Zhu and Geng [36]
	Survey reports or site surveys of environmental agencies	Kassinis and Vafeas [66]
	Opinions of government departments on handling environmental complaint letters or on-site complaints	Qi Guoyou [8]
Normative pressure	Pressure from environmental awareness of benchmarking enterprises in the industry	Boiral and Henri [65]
	Pressure from environmental awareness of employees	Boiral and Henri [65]
	Pressure from environmental awareness of consumers	Boiral and Henri [65]
	Pressure from media attention to industry environmental issues	Boiral and Henri [65]
	Pressure from environmental awareness of the public (e.g. communities and nongovernmental organizations (NGOs))	Zhu and Geng [36]
	Pressure from professional organizations' attention to environmental issues	Zhu and Geng [36]
	Pressure from suppliers/partners/clients on environmental issues	Boiral and Henri [65]
Pressure from corporate environmental policy in terms of vision and purpose	Phan and Baird [34]	
Mimetic pressure	Pressure from environmental strategy implemented by major competitors of similar products	Zhu and Geng [36]
	Pressure from environmental strategy implemented by manufacturers of substitute products	Zhu and Geng [36]
	Pressure from industry competition	Boiral and Henri [65]

Bases of item selection: Kassinis and Vafeas [66]; Zhu and Geng[36]; Boiral and Henri [65]; Qi Guoyou [8]; Phan and Baird [34]

Scale of corporate environmental strategy

Variables	Items (indices)	Sources
	Harmful ingredients in products have gradually decreased.	Chiou[73]

Product-based environmental strategy	Product packaging and the use of recyclable/reusable packaging materials have gradually decreased.	Shama and Vredenburg [3]; Christman[19]
	Products are eco-certified and use eco-labels.	Qi Guoyou [8]
	Products have applied for environmental related patents.	Pascual Berrone et al. [24]
	The benefits of green products have been publicized.	Christman[19]
	Green performance has been highlighted in product development.	Yang Defeng [10]; Dong Ying [11]
Process-based environmental strategy	Green equipment, fuels and energies have been invested actively.	Shama and Vredenburg [3]
	The emissions and harmfulness of wastes have been controlled in production process.	Shama and Vredenburg[3]
	Measures have been prepared to control environmental accidents and the leak of hazardous material.	Shama and Vredenburg[3]
	Relevant policies, rules and regulations have been formulated.	Henriques and Sadorsky [47]
	Indices and targets of environmental performance have been set.	Thanh Nguyet Phan [9]
	Environmental information has been disclosed regularly.	Henriques and Sadorsky [47]
	*Environmental training of employees has been highlighted.	Shama and Vredenburg [3]; Henriques and Sadorsky [47]

Bases of item selection: Shama and Vredenburg [3]; Christman[19]; Henriques and Sadorsky [47]; Chiou [73]; Qi Guoyou [8]; Thanh Nguyet Phan [9]; Yang Defeng [10]; Dong Ying [11]

*The factor load of “Environmental training of employees has been highlighted” was smaller than the critical value of 0.5, indicating that most information of the item cannot be effectively explained. Hence, this item was deleted from the scale.