Influences of Institutional Pressures on Corporate Social Performance: Empirical Analysis on the Panel Data of Chinese Power Generation Enterprises

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Institutional theory has proved the influence of institutional pressures on organization practices and structures. Meanwhile, with the soaring use of corporate social performance (CSP), more researchers are focusing on exploring the relationship between institution pressures and CSP which is still not completely understood yet. Against this background, the paper aims to fill the gap through generally hypothesizing that different types of institutional pressures individually and collectively affect CSP via the mediating effect of corporate environmental strategy. First, based on the previous and extensive literature review, the theoretical framework and research hypotheses are constructed. Next, canonical correlation analysis about the panel data of 51 Chinese large-scale power generation enterprises from 2004 to 2009 is made to test the relevant hypotheses. Finally, based on the data analysis results, the study draws some conclusions and policy implications for promoting the CSP of Chinese enterprises, including enhancing the steering function of government policies and industry regulations and emphasizing the intermediary role of media.

Keywords: institutional pressures, corporate environmental strategy, corporate social performance, panel data, Chinese power generation enterprises, canonical correlation analysis

Introduction

Theoretical and Practical Background

Since the 1980s, social scientists and strategic management scholars have been focusing more on institutional theory and applying it to organization analysis (DiMaggio & Powell, 1983; Oliver, 1991; Scott, 1995). Peng (2002; 2003) put forward an institution-based view of strategic management and further identified it as a third leg in strategic management with the other two of industry-based and resource-based views. Especially, the research on corporate social responsibility and performance in terms of the institution-based perspective has aroused great attention within the field of strategic management (Peng & Chen, 2009).

At the same time, with the soaring common use of CSP, more and more firms are now including CSP as

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one part of their strategic objectives (Porter & Kramer, 2006). For academic researchers, the driving forces and influential mechanism behind corporate social responsibility practice are still not completely settled. The field of CSP research has always been hampered by the lack of a consistent definition and its measurement (McWilliams, Siegel, & Wright, 2006) and numerous studies have focused on identifying the relationship between corporate financial performance and social performance. The gap in this research field is what catalyses enterprises to engage in CSR initiatives, given that there are various institutional pressures at play at different levels driving them to do so (Aguilera, Rupp, Williams, & Ganapathi, 2007).

Specific to China, increased economic development and social transition have brought about massive changes in the institutional environment confronted by Chinese enterprises. Simultaneously, the increasing sustainable development across the world and high environmental barrier of entering into the global market put forward new environmental requirements for Chinese enterprises to meet.

Research Objectives

Institutional theory proves that organizations are embedded in an institutional environment which will definitely produce obvious influence on organizations' structure and strategic decision-making (Scott, 1994). However, the previous literature is insufficient on the influential mechanism among institutional pressure and corporate social performance and the role of corporate strategy responsiveness. In doing so, this research sought to realize the following objectives.

First was to explore the empirical measurement dimensions of institutional pressures. To date, few studies have explored the specific measurement dimensions of different types of institutional pressure. In this research, the authors try to fill the void via exploring measurement dimensions of coercive and regulative institutional pressures confronted by Chinese power generation enterprises.

Second, the existing research has verified the effect of individual institutional pressure on corporate social performance, for example, coercive legitimacy (Clemens & Douglas, 2012), mimetic, and normative legitimacy (Bansal, 2005; Gluch & Stenberg, 2006). However, the collective influence of different types of institutional pressures on CSP has not been investigated. Given that the types of pressure are not always empirically distinct (DiMaggio & Powell, 1983, p. 150), this research intends to make up this gap by analyzing the collective effect of different types of institutional pressures on corporate social performance based on a canonical correlation analysis model.

Third, the previous literature has established that corporate environmental strategy responding to institutional pressure improves organizational legitimacy (e.g. Wood, 1991; Bansal & Roth, 2000; Shah, 2011). The latest research of Colwell and Joshi (2013) has proved the mediating role of environmental responsiveness between institutional pressures and firm performance. This research will provide further empirical evidence to verify the mediating effect of corporate environmental strategy between institutional pressures and corporate social performance.

Above all, the study generally hypothesizes that different types of institutional pressures individually and collectively affect corporate social performance via the mediating effect of corporate environmental strategy.

Literature Review

This section will elaborate the concepts and theories related to this paper and then construct a theoretical framework paving the way for the following hypotheses and data analysis.

Institutional Pressures

Institutional sociology adopts an extensive notion of institutional environment including cognitive, normative, and regulative structures and activities that provide stability and meaning of social activities (Scott, 1995, p. 33). DiMaggio and Powel (1983) argued that organization decision-making is influenced by three institutional mechanisms, namely coercive, mimetic, and normative isomorphism. According to Bansal (2005), organizations' institutional environment is commonly influenced by various stakeholders, including government, professional associations, public opinion, and media. This research adopts Scott's opinion combined with other literature to categorize the institutional pressures of organizations.

The regulatory pillar has been most studied in relation to corporate environmental management. In this context, firms respond to coercive action by regulators such as government or industry supervisors. Jennings and Zandbergen (1995) were probably the first to apply institutional theory to explain firms' environmental practices and they argued that coercive forces like laws or regulation enforcement are the main impetus for environmental practices.

The normative pillar of institutional environment refers to expectations of what constitutes legitimate behaviour within particular organizational contexts (Scott, 1995). According to normative legitimacy, organizations need to become socialized and learn to collaborate with peer organizations and satisfy relevant stakeholders' requirements. Through membership of industry and professional associations, organizations can learn the right to do things as well as the rationale for the preferred approach (Scott, 1987; Oliver, 1997). The influence of normative legitimacy is to ensure organizations to conform with institutional demands "because it would be unthinkable to do otherwise" (Oliver, 1991, p. 149). According to stakeholder theory, the normative pressures sometimes come from corporate stakeholders' requirements, such as customers, suppliers, employees, shareholders, and even society (Freeman, 1984). The data of this research do not consider the relationship between departments at different levels or parent company and subsidiaries; therefore, this study will not analyse the intra-organizational dynamic.

In addition, cognitive legitimacy of institutional environment refers to the cultural elements that govern choice without receiving conscious thought (DiMaggio & Powell, 1983; Hoffman & Ventresca, 1999). In this paper, as result of the shortage of relevant data, its measurement and influence will not be considered.

Corporate Social Performance

In recent years, a large body of theoretical and empirical research on corporate social responsibility (CSR) has emerged and an increasing number of companies have declared their intention to involve sustainability in their corporate strategy and that it will act as an important factor for their future success (UN, 2010). There is no unified definition of CSP, based on the previous literature. Wood (1991) produced a CSP model including three perspectives, namely, principles of social responsibility, processes of corporate social responsiveness, and outcomes of corporate behaviour. Clarkson (1995) developed a stakeholder framework of CSP identifying the typical cooperate and stakeholder issues based on three analytical levels, i.e. organization, corporations, and stakeholder groups. In some cases, the emphasis on corporate social responsibility has shifted the way of understanding the relationship among organizations, their institutional environment, and relevant stakeholders, such as government, employees, suppliers, community, and global society (Ioannis & George, 2010). However, a great deal of previous research has focused on the relationship between corporate financial performance (CFP) and CSP and investigated whether CFP affects CSP (Rowley & Berman, 2000; Margolis, Elfenbein, & Walsh,

2007) without understanding why or why not organizations choose to act in a socially responsible manner (Ullman, 1985; Rowley & Berman, 2000; Campbell, 2006). In fact, some scholars (ex. Margolis & Walsh, 2003; Doh & Guay, 2006) have therefore called for a more comprehensive theoretical and empirical investigation into corporate social responsibility practice and the additional factors determining CSP (Ioannis & George, 2010). In this paper, the authors will fill this gap through exploring the influential mechanism between institutional pressures and CSP, and further test a series of hypotheses on different types of institutional pressure that exert influence on different types of CSP.

Corporate Environmental Strategy

Since the Brundtland Commission Report was published in 1987, environmental concerns and sustainable development have been gradually raised to strategic issues by four corporate managers and strategic management researchers who have debated the role of environmental strategy in the repertoire of strategic management (Sanjay & Harrie, 1998). According to Banerjee and Kashyap (2003), corporate environmentalism includes two dimensions: one is environmental orientation defined as “the recognition by managers of the importance issues facing their firms”; the other is environment strategy referring to “the extent to environmental issues which are integrated with a firm’s strategic plans”. This paper analyses what corporates actually do to respond to environmental issues, which means considering environmental strategy not environmental orientation. Drawing from Bansal and Roth (2000, p. 717), the study defines corporate environmental strategy as “a set of corporate initiatives aimed at mitigating a firm’s impact on the natural environment”. Combined with the three key elements of sustainable development, namely, environmental, social, and economic issues (IUCN, 2006), the objectives of implementing CES are commonly to realize economic prosperity, environmental integrity, and social equity. For Chinese power enterprises, the State Grid Corporation of China issued the first White Paper on Green Development for Chinese Power Enterprises on 19th April, 2011, which elaborated in detail the green development strategy, objectives, and specific measures. This means that environmental issues have become a priority strategy agenda for the Chinese power industry. Therefore, this paper focuses on the role of corporate environmental strategy between institutional pressures and CSP.

Summary: Institutional Pressure, Corporate Environmental Strategy, and Corporate Social Performance

Some empirical studies have applied institutional theory to analyse corporate responsiveness to environmental issues. For example, in a field study on firms in the UK and Japan, Bansal and Roth (2000) found that the quest for legitimacy is the key impetus for a firms’ adoption of environmentally responsive behaviour. Then, Bansal’s (2005) empirical study of the forestry, mining, oil, and gas industries in Canada verified that the mimetic and coercive pressures were key drivers for the sustainable development strategy of firms. Regarding research in China, Qu’s (2007) investigation about the driving forces of corporate social responsibility practices based on a survey of 586 general managers of hotels in China found that market orientation, government regulation, and the extent of firms’ perception of them have affected their corporate responsibility practices. However, there are still some criticism and shortage of institutional theory’s explanation of organizational behaviour and performance. Delmas and Toffel (2008) noted that the relationship between organizational factors and institutional pressures is still not yet understood. Similarly, a large amount of institutional theories focus on legitimacy outcomes such as organization survival (Baum & Oliver, 1991), without considering organization performance and competitive advantage (Heugens & Lander, 2009). The collective influence of different types of institutional pressures on corporate performance has not been empirically analysed yet (Martínezros & Kunapatarawong, 2013).

Above all, the following theoretical framework (Figure 1) is informed by institutional theory and also fills some of the void by exploring the influential mechanism among institutional pressures, corporate strategy, and corporate performance.

Figure 1. Theoretical framework.

Hypotheses Development

There are in total three general types of hypothesis in regard to exploring the influential mechanism among institutional pressures, corporate environmental strategy, and corporate social performance.

Effect of Institutional Pressures on Corporate Social Performance

Linking back to the literature review, institutional pressures are classified as regulative, normative, and cognitive legitimacy (Scott, 1995). This paper focuses on regulative and normative institutional pressures and also identifies their specific measurement dimensions combining stakeholder theory and Chinese enterprises' institutional environment.

Effect of regulative pressures on CSP. The regulative pillar has been most studied in relation to corporate environmental practice and firms are responding to the regulators or activists (Rugman & Verbeke,

1998; Delmas, 2002). Delmas (2002) found that governments play an important role in firms' environmental strategic choice. In addition, some studies have found that industry regulation has motivated corporates to adopt environmental management practice (Kollman & Prakash, 2002; Delmas & Toffel, 2004). The Chinese power industry is extensively regulated by relevant policies and regulations as a result of its importance and characteristics. For example, through controlling electric prices, the government can balance the inequality between electric resources. In this paper, the regulative pressure is separated into two dimensions of governmental laws and industry regulations and the hypotheses formulated are as follows:

H1-1: Governmental policy positively affects CSP.

H1-2: Industry regulation positively affects CSP.

Effect of normative pressures on CSP. The normative pillar of institutional theory refers to legitimacy pressures from informal values, rules, and habits or social expectations on organizations. As one of the social actors, firms are supposed to undertake certain social roles and fulfil social responsibilities. Some studies found that other social actors' expectations shape some normative pressures affecting firms' strategic choice and organization performance. For example, Delmas and Toffel (2004) found that some stakeholders including customers, competitors, community, and environmental interest group impose normative pressures on firms. The media also play an important role in corporate environmental practice and Bansal and Roth (2000) found that they play an intermediate role between firms and society, being responsible for delivering environmental information to society. Sen and Bhattacharya (2001) found that corporate responsibility practice can produce a positive effect on the public's image of firms and improve customers' desires to choose firms' products. Mohr and Webb (2005) found that in the US, corporate social responsibility practices play a bigger role in affecting customers' purchasing intention than price. Simpson and Kohers (2002) reached similar conclusions and argued that corporate social responsibility practice can increase consumers' preference of purchasing their products. Above all, this paper separates the normative pressure into three dimensions of the public, media, and customer. The hypotheses are as follows:

H1-3: The public positively affects CSP.

H1-4: The media positively affects CSP.

H1-5: Customer pressure positively affects CSP.

Mediating Effect of Corporate Environmental Strategy

According to the institution-based view (Peng, 2002), institutions are much more than background conditions; instead, "institutions directly determine what arrows a firm has in its quiver as it struggles to formulate and implement strategy and to create competitive advantage" (Ingram & Silverman, 2002). Some research on emerging economies has pushed the institution-based view to become the third leg in the strategy tripod (Makino, Isobe, & Chan, 2004; Peng, 2002). The research paradigm of the institution-based view is "institutional legitimacy—strategy—performance". Organizations conform to institutional pressures regarded as sources of legitimacy in order to ensure their survival and profits. Thus, rather than being passive receivers, organizations actively formulate strategic responsiveness to institutional pressures which finally influence organization performance. Based on the reasoning that the basic assumption of this paper is that corporate environmental strategy mediates the effect of institutional pressures on corporate social performance (Figure 2), which is separately related to the following various types of institutional pressures, the hypotheses are as follows:

Figure 2. Mediating effect of strategy. Source: Adopted from Peng (2006, p. 15).

H2-1: Corporate environmental strategy mediates the relationship between government policy and CSP.

H2-2: Corporate environmental strategy mediates the relationship between industry regulation and CSP.

H2-3: Corporate environmental strategy mediates the relationship between the public and CSP.

H2-4: Corporate environmental strategy mediates the relationship between the media and CSP.

H2-5: Corporate environmental strategy mediates the relationship between customers and CSP.

Collective Effect of Different Types of Institutional Pressures on CSP

Concerning the driving forces of CSP, CSP is affected by one or two types of institutional pressures simultaneously; that is to say institutional pressures collectively affect CSP. Until now, few studies have empirically verified the collective effect of different types of institutional pressures on CSP. Thus, this paper will fill this gap by testing the relationship between different types of institutional pressures and different dimensions of CSP. In order to realize this, firstly, this study needs to separate the CSP into different dimensions. According to China's Top 100 Corporate Social Responsibility Development Index (2010) issued by the Chinese Academy of Social Science, the CSR index is composed of four parts, i.e. market responsibility, social responsibility, environmental responsibility, and responsibility management. Based on the previous studies and the conditions of enterprises in the Chinese power industry, this study separates CSP into three measurement dimensions, namely, environmental responsibility performance, market responsibility performance, and social responsibility performance. The hypotheses are as follows:

H3-1: Corporate market responsibility performance and environmental responsibility performance are collectively affected by government policy and industry regulation.

H3-2: Corporate market responsibility performance and social responsibility performance are collectively affected by government policy and the media.

H3-3: Corporate social responsibility performance and environmental responsibility performance are collectively affected by the public and customers.

Data Collection and Sample Test

The research sample included 51 Chinese large-scale power generation enterprises with an installed capacity of above one million kilowatt (KW). The installed capacity of these 51 large-scale power generation enterprises accounts for more than 70% of the total installed capacity of the national power generation industry, which means that they play a critical and indispensable role in the national power industry and infrastructure sector.

The data mainly came from three sources: six years of statistical summaries and analysis reports on power generation from 2004-2009 compiled by the Federation of Power Generation Enterprises (FPGE) in China, relevant regulation reports from 2004-2009 by the State Electricity Regulatory Commission (SERC), corporate

annual reports, corporate social responsibility reports, and corporate statistical information on these 51 sample enterprises from 2004-2009. Researchers mainly use content analysis to transfer these qualitative materials into quantitative data via coding. In order to test the reliability of the data, this study conducts a K-S test and Pearson's analysis of the variables and concluded that the variables conformed to normal distribution and the correlation between variables was obvious. This study also tests the reliability and validity of scales for independent, dependent, and mediating variable and Cronbach's α index was 0.836, 0.843, and 0.832, all exceeding 0.7. Therefore, the reliability and validity of scales in this research were good.

Variable Measurement

Independent Variable

This paper focuses on regulative and normative pressures faced by Chinese power generation enterprises and analyses their specific measurement dimensions, which is one contribution of this paper.

First, for Chinese power generation enterprises, regulative pressures mainly come from two sources: one is the general laws, regulations, and policies related to enterprises; the other is regulations or punishments from power industry regulatory institutes such as the FPGE and SERC, which are defined as the measurement dimension of industry regulations in this paper. Second, according to the previous literature (Freeman, 1984; Oliver, 1997; Scott, 1987), measurement dimensions of normative pressures are defined as customers, public, and media.

Dependent Variable

The measurement of corporate social performance does not have a unified standard and there are generally two types based on the previous literature, i.e. specific event measurement (Wright & Ferris, 1997) and CSP index measurement including reputation index, content analysis, and KLD index (Rowley & Berman, 2000). For enterprises in China, the authoritative corporate social responsibility index is China's Top 100 Enterprises Social Responsibility Development Index (2009) issued by the Chinese Academy of Social Science, which was adopted for this research as the corporate social performance measurement index including market, social, and environment items. The measurement result was obtained from the above-mentioned statistical information and annual reports using content analysis. The measurement formula is as follows:

$$y = y_1 \times 0.3 + y_2 \times 0.3 + y_3 \times 0.4$$

where y is the corporate social performance, y_1 is the market responsibility performance, y_2 is the social responsibility performance, and y_3 is environmental responsibility performance.

Mediating Variable

To measure corporate environmental strategy, for power generation enterprises, the environmental strategy is normally reflected as four indicators, i.e. coal gross coal consumption rate, net coal consumption rate, service power rate, and clean energy proportion. Every indicator is separated into nine intervals, and the target is evaluated as its interval number, and the formula is as follows:

$$Z = \sum W_j \times Z_j$$

where Z is corporate environmental strategy, W_j is the weight of every indicator, and Z_j is the above-mentioned four indicators (coal gross coal consumption rate, net coal consumption rate, service power rate, and clean energy proportion).

Control Variable

The two control variables are installed capacity and corporate property. The valuation of installed capacity is the total installed capacity for six years of these 51 enterprises. Corporate property is classified into two categories as state-owned enterprise (SOE) and non-SOE, being set as dummy variables. In summary, the variables in this paper are as follows (Table 1):

Table 1

Summary of Variables

IV (X): Institutional pressures	Mediating variable (M)	Control variable	DV (Y): Corporate social performance
X1: Government policy X2: Industry regulation X3: Public X4: Media X5: Customer	M: Corporate environmental Strategy	X7: Installed capacity X8: Corporate property	Y1: Market responsibility performance Y2: Social responsibility performance Y3: Environment responsibility performance

Data Analysis and Hypotheses Testing

Panel Data Analysis Model

The data in this paper are from 51 large-scale power generation enterprises from 2004-2009 belonging to panel data; therefore, they are a kind of panel data including observations on multiple entities, where each entity is observed at different points in time. In order to test the mediating effect, this study adopts the mediating effect test model put forward by Baron and Kenny (1986) based on the following equations (Figure 3).

Figure 3. Mediating effect model of multiple regression analysis.

First, this study separately ran the fixed effect model and random effect model on M1-1, and then used Housman's test to decide which one is better. The Chi-s value of the Housman's test was 129.96 and $p = 0 < 0.05$; therefore the fixed effect model is more suitable than the random effect model. Based on the fixed effect model analysis result (Table 2), the hypotheses of H1 are tested.

Table 2

Fixed Effect Model Test of M1-1

	Coefficient	Std. error	t-statistic	Prob.
C	20.17374	0.7289158	27.68	0
X1	0.0254081	0.0146746	1.73	0.085
X2	0.0315206	0.0135354	2.33	0.021
X3	-0.0201792	0.0148566	-1.36	0.176
X4	0.0399875	0.0194989	2.05	0.041
X5	0.0224579	0.0139475	1.61	0.109
X7	-0.000277	0.0001897	-1.46	0.146
X8				
R-squared: within	0.3522			
Between	0.1584			
Overall	0.1999			
F-statistic	7.72			
Prob (F-statistic)	0.0000			

Second, the repeated logic was applied to test M1-2. The Chi-s value of the Housman's test was 198.62 and $p = 0 < 0.05$, so the fixed effect model is better for testing M1-2 (Table 3).

Table 3

Fixed Effect Model Test of M1-2

	Coefficient	Std. error	t-statistic	Prob.
C	4.009311	0.322359	12.44	0
X1	0.017481	0.00649	2.69	0.008
X2	0.026784	0.005986	4.47	0
X3	-0.00104	0.00657	-0.16	0.875
X4	0.01879	0.008623	2.18	0.03
X5	0.015545	0.006168	2.52	0.012
X7	-0.0002	8.39E-05	-2.44	0.016
X8				
R-squared: within	0.5994			
Between	0.3284			
Overall	0.3643			
F-statistic	13.44			
Prob. (F-statistic)	0.0000			

Third, for M1-3, the Chi-s value of the Housman's test was 315.53 and $p = 0 < 0.05$; therefore the fixed effect model is better for testing hypotheses of H2 and test results are as in Table 4.

Table 4

Fixed Effect Model Test of M1-3

	Coefficient	Std. error	t-statistic	Prob.
C	13.24934	0.860151	15.4	0
M	0.984827	0.105036	9.38	0
X1	0.023503	0.013699	1.72	0.086
X2	0.017654	0.013226	1.33	0.182
X3	-0.01282	0.014002	-0.92	0.36

Table 4 continued

	Coefficient	Std. error	t-statistic	Prob.
X4	0.011552	0.018424	0.63	0.531
X5	0.015711	0.013355	1.18	0.239
X7	0.000187	9.81E-05	1.9	0.057
X8	1.913429	0.588867	3.25	0.001
R-squared: within	0.4601			
Between	0.6194			
Overall	0.5658			
Chi2 (12)	309.98			
Prob. [Chi2 (12)]	0.0000			

Canonical Correlation Analysis

Canonical correlation analysis is used to test the correlation between different types of institutional pressures and sub-dimensions of corporate social performance. Canonical correlation analysis is a multivariate statistical model that facilitates the study of interrelationships among sets of multiple dependent variables and multiple independent variables. Unlike multiple regressions, which predict a single dependent variable from a set of multiple independent variables, canonical correlation simultaneously predicts multiple dependent variables from multiple independent variables (Joseph, Rolph, Ronald, & William, 1998). In this paper, the independent variable of institutional pressures is measured by five dimensions and dependent variable of corporate social performance is measured by three dimensions; therefore, this study uses canonical correlation analysis to analyse the relationship between different sets of variables and the results are as in Tables 5 and 6. There are in total three sets of canonical variables and the hypotheses type of H3 were tested.

Table 5

Correlations Between Set-1 and Set-2

Correlations between Set-1 and Set-2					
	X1	X2	X3	X4	X5
Y1	0.4055	0.4285	0.1541	0.0848	0.1016
Y2	0.3733	0.4484	0.1927	0.3563	0.0379
Y3	0.4362	0.5266	0.1682	0.3827	0.0346

Table 6

Canonical Correlations and Hypotheses Test

Canonical correlations				
1	0.680			
2	0.296			
3	0.061			
Hypotheses Test				
	Wilk's	Chi-SQ	DF	Sig
Y1	0.489	215.201	15.000	0.000
Y2	0.909	28.593	8.000	0.000
Y3	0.996	1.129	3.000	0.770

Hypotheses Test Result and Discussion

Based on the above data analysis results, the test results of the above hypotheses are as in Table 7.

Table 7

Hypotheses Test Result Summary

Hypotheses		Result
H1: Effect of institutional pressures on CSP	H1-1: Governmental policy positively affects CSP	Positive
	H1-2: Industry Regulation positively affects CSP	Positive
	H1-3: The public positively affects CSP	Negative
	H1-4: Media positively affects CSP	Positive
	H1-5: Customer pressure positively affects CSP	Negative
H2: Mediating effect of Corporate Environmental Strategy	H2-1: Corporate environmental strategy mediates the relationship between governmental policy and CSP	Positive
	H2-2: Corporate environmental strategy mediates the relationship between industry regulation and CSP	Positive
	H2-3: Corporate environmental strategy mediates the relationship between the public and CSP	Negative
	H2-4: Corporate environmental strategy mediates the relationship between media and CSP	Positive
	H2-5: Corporate environmental strategy mediates the relationship between customer and CSP	Negative
H3: Effect of different types of institutional pressures on different types of corporate social performances	H3-1: Corporate market responsibility and environmental responsibility are collectively affected by governmental policy and industry regulation	Positive
	H3-2: Corporate market responsibility and social responsibility are collectively affected by policy regulation and media	Positive
	H3-3: Corporate social responsibility and environmental are collectively affected by the public and customer	Negative

Discussion about H1, H2. Corporate social performance is affected by various categories of factors based on different perspectives. From the perspective of organization, Guffey and Robert (1992) separated these factors into organization strategy factors, economic factors, and efficient factors. Institutionalism scholars, DiMaggio and Powell (1983), Scott (1987), and Oliver (1991) argued that corporate strategy and performance are affected by external institutional factors divided into regulatory, normative, and cognitive. In this paper, combined with the special properties of the Chinese power generation industry which is a heavily government regulated industry, this study focuses on the regulatory and normative legitimacy pressures separated into five detailed dimensions and the discussions about the hypotheses test results are shown in Figure 4.

First, the effects of government policies and industry regulations are positive and significant in relation to corporate social performance via the mediating effect of the corporate environmental strategy between them. The power generation industry is one of the most important energy industries in China, and provides guaranteed power for the whole national economy. Therefore, in order to ensure its healthy development, government policies impose stringent supervision and regulation on its development strategy. For example, in the twelfth Five-year Plan, the national policies concerning the power generation industry included the market reform of the power generation industry, promoting the recycling economy, development of the power generation industry through energy conservation, and emission reduction. In order to obtain regulative legitimacy from the government, enterprises will accordingly develop sustainable development strategy responsiveness, which is beneficial for improving their social performance.

In addition, besides government policies, some professional regulations formulated by some industry associations and professional institutes impose regulative pressures on corporate strategy responsiveness (Scott, 1995; Kostova, 1999). In China, the power industry regulation institutes and associations are the direct

superiors of power generation enterprises and mainly responsible for supervising and driving enterprises to observe the relevant industry regulations. Therefore, enterprises need to conform to the pressures from these industry regulations in order to achieve regulative legitimacy.

Figure 4. Test result of H1, H2.

Second, the media are positive and significant to corporate social performance through the mediating effect of corporate environment strategy between them. Some research has proved the positive effect of the media on corporate environmental protection practice (Bansal & Clelland, 2004; Bowen, 2000). Bansal and Roth (2000) found that the media play an intermediary role between corporates and society. The media mainly undertake the responsibility of supervising corporates' practices and immediately revealing enterprises' negative actions to the public. To a certain extent, the media represent public opinion; therefore, enterprises need to make responses to the media in order to obtain normative legitimacy. In addition, the media should vigorously advertise the idea of sustainable development to form a beneficial institutional environment for pressuring corporates' green development.

Third, the public and customers do not have an obvious effect on corporate social performance and thus the mediating effect of corporate environmental strategy is not significant either. According to stakeholder theory, corporate social responsibility practices promote people's desire to accept their products or services (Sen & Bhattacharya, 2001), so corporates have to respond to corporate stakeholders' expectations in order to achieve legitimacy. However, in this paper, the analysis results of H1-3, H1-5, H2-3, and H2-5 are negative, which means that the public and customers do not have significant effects on corporate social performance in China.

For the variable of the public, explanations for this result are as follows: First, the product of power provided by the power generation industry is a necessity not only for people's lives but even for the whole

national economy. Based on the statistics of 2010, domestic consumption only accounted for 10.66% of the whole national electricity consumption. Therefore, the influence of public expectations on corporate development strategy is limited. Second, in China, people's awareness of environmental protection and public participation is relatively weak and sometimes the public does not pay long-term attention to enterprises' actions. Reasoning from these, the hypothesis testing result is reasonable.

For the variable of customers, it is generally believed that corporate strategy choice and performance is closely related to customers' requirements (Simpson & Kohers, 2002; Mohr & Webb, 2005). However, in this research, the effect of customers on CSP was not verified. Linking with the special characteristics of the power generation industry and China's economic system, the result can be explained as follows: First, in China, the power industry is a kind of monopolized industry and not merged with the market economy system, which means that enterprises do not pay attention to customers' requirements. Second, under the current electric supervisory system, the government normally decides the price of electricity and power generation enterprises almost have no voice on it. Therefore, electricity customers' requirements will not have a direct effect on power generation enterprises' strategy and performance.

Discussion about H3. The effect of institutional pressures on corporate social performance has been confirmed by research. According to Greening and Gray (1994), the improvement of corporate social performance is not only affected by regulative pressures like laws and regulations, but also simultaneously affected by normative pressures such as from the public and media, and even by cognitive pressures like the perceptions of corporate managers (Angelidis & Nabil, 2004). Based on this, this paper experimentally and empirically verifies the collective effect of different types of institutional pressures on corporates and the results are shown in Figure 5.

First, corporate market performance and environment performance are collectively affected by government policy and industry regulation. Bansal's (2000) research on the driving forces behind corporate social performance included government policy, competitive advantage, critical events, and shareholders, which involved different types of institutional pressures. For power generation enterprises in China, on the one hand, they need to respond to government policies' requirements regarding green development; on the other hand, they also have to accept electric supervisory departments' regulations on power demand and power generation quality in order to achieve market performance. Therefore, government policy and industry regulation collectively affect corporate market and environment performance.

Second, corporate markets and social performance are collectively affected by government policy and the media. A healthy media environment is beneficial for promoting corporate social responsibility practices. The media can publicize government policies on environmental protection to society and form a social consensus of sustainable development. The media play an intermediary role between the government and society, and between enterprises and society. Therefore, government policy and media can collectively affect corporate social performance. More importantly, this result also empirically proves that CSP is affected by different types of institutional pressures, i.e. regulative and normative pressures.

Third, the public and customers have no significant effects on corporate social and environmental performance. The testing result for H2-3 was negative, just in line with the test results for H1-3 and H1-5. The public and media do not affect corporate social performance both individually and collectively, which is related to the special properties of the power generation industry and economic regulation system of China as analysed above.

Figure 5. Test result of H3.

Conclusions

The power generation industry is one of the most important infrastructure industries of national economy, so its development strategy is closely connected with national economic development orientation. With the increasingly attention being paid to environmental protection in China, enterprises are supposed to undertake more social responsibilities of promoting sustainable development. Therefore, based on the above data analysis results, some conclusions and policy implications regarding how to improve sustainable development strategies of Chinese enterprises are recommended.

First is enhancing the steering function of government policies and industry regulations. In the social-political system, regulative pressures stemming from government policies and industry regulations play a critical role in directing enterprise strategy. Government should formulate relevant policies to develop general guidelines for enterprises' green development. Meanwhile, the supervisory institutes should play an important role in regulating enterprises' activities and improving their self-discipline capacity.

Second is emphasizing the intermediary role of the media between enterprises and society. From the above analysis, the media form normative arepressure for organizations' development. As a result, on the one hand, the media are expected to supervise enterprises' activities and guide public supervision; on the other hand, the media should also improve their own professional quality and better realize the function of interactive channels between enterprises and society.

Third, for Chinese enterprises, the effects of the public and customers on corporate social performance are not obvious. Therefore, what should be done is to improve their functions. For example, more public participation channels should be opened up to involve more social actors to promote the sustainable

development of the national economy. In addition, the power generation enterprises should take customers' requirements into consideration and improve their own competitiveness through developing new products, like developing smart power grids.

Limitations and Future Research

Although this study has contributed to the knowledge on institutional pressures and corporate social performance, a few limitations should be noted when interpreting the results: First, the data were obtained through content analysis, so some subjective biases could not be avoided although the coders were trained. Second, concerning the measurement of institutional pressures, because there is no unified and authoritative standard regarding the measurement dimensions of institutional pressures, the measurement dimensions of this paper are summarized by authors based on previous research and thus its reliability needs to be further tested. Third, some research has indicated that corporates will have different responsiveness to institutional pressures, which are not considered in this paper. Consequently, the effect of different types of institutional pressures on corporate responsiveness will be analysed in future research.

References

- Aguilera, R. V., Rupp, D. E., Williams, C. A., & Ganapathi, J. (2007). Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations. *Academy of Management Review*, 32(3), 836-863.
- Angelidis, J., & Nabil, I. (2004). An exploratory study of the impact of degree of religiousness upon an individual's corporate social responsiveness orientation. *Journal of Business Ethics*, 51(2), 119-128.
- Banerjee, I., & Kashyap. (2003). Corporate environmentalism: Antecedents and influence of industry type. *Journal of Marketing*, 67(2), 106-122.
- Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, 26(3), 197-218.
- Bansal, P., & Clelland, I. (2004). Talking trash: Legitimacy, impression management, and unsystematic risk in the context of natural environment. *Academy of Management Journal*, 47, 93-103.
- Bansal, P., & Roth, K. (2000). Why companies go green: A model of ecological responsiveness. *Academy of Management Journal*, 43(4), 717-736.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Baum, J. A. C., & Oliver, C. (1991). Institutional linkages and organizational mortality. *Administrative Science Quarterly*, 36, 187-218.
- Bowen, F. (2000). Environmental visibility: A trigger of green organizational response? *Business Strategy and the Environment*, 9(2), 92-107.
- Campbell, J. (2006). Institutional analysis and the paradox of corporate social responsibility. *American Behavioral Scientist*, 49, 925-938.
- Clarkson, M. B. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. *The Academy of Management Review*, 20(1), 92-117.
- Clemens, B. W., & Douglas, T. J. (2012). To what degree can potable water foster international economic development and sustainability? What role does health play? *Organization Management Journal*.
- Colwell, S. R., & Joshi, A. W. (2013). Corporate ecological responsiveness: Antecedent effects of institutional pressure and top management commitment and their impact on organizational performance. *Business Strategy and the Environment*, 22, 73-91.
- Delmas, M. A. (2002). The diffusion of environmental management standards in Europe and the United States: An institutional perspective. *Policy Sciences*, 35, 91-119.
- Delmas, M. A., & Toffel, M. W. (2004). Stakeholders and environmental management practices: An institutional framework. *Business Strategy and the Environment*, 13, 209-222.

- Delmas, M. A., & Toffel, M. W. (2008). Organizational responses to environmental demands: Opening the black box. *Strategic Management Journal*, 29, 1027-1055.
- DiMaggio, P. J., & Walter, W. P. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48, 147-160.
- Doh, J. P., & Guay, T. R. (2006). Corporate social responsibility, public policy, and NGO activism in Europe and the United States: An institutional-stakeholders perspective. *Journal of Management Studies*, 43(1), 47-73.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman/Ballinger.
- Gluch, P., & Stenberg, A.-C. (2006). How do trade media influence green building practice? *Building Research and Information*, 34, 104-117.
- Greening, D., & Gray, B. (1994). Testing a model of organizational response to social & political issues. *Academy of Management Journal*, 37, 467-498.
- Guffey, & Robert, W. (1992). The role of organization communication in the implementation of a business unit strategy.
- Heugens, P. P., & Lander, M. W. (2009). Structure! Agency! (and other quarrels): A meta-analysis of institutional theories of organization. *Academy of Management Journal*, 52, 61-85.
- Hoffman, A., & Ventresca, M. (1999). The institutional framing of policy debates. *American Behavioral Scientists*, 42(8), 1368-1392.
- Ingram, P., & Silverman, B. (Eds.). (2002). Introduction: The new institutionalism in strategic management. *The New Institutionalism in Strategic Management (Advances in Strategic Management, Volume 19)* (pp. 1-30), Emerald Group Publishing Limited.
- Ioannis, I., & George, S. (2010). What drives corporate social performance? International evidence from social, environmental and governance scores. *Working Paper 11-016*, August, 2010.
- IUCN. (2006). The future of sustainability: Re-thinking environment and development in the twenty-first century. *Report of the IUCN Renowned Thinkers Meeting*, 29-31 January, 2006.
- Jennings, P. D., & Zandbergen, P. A. (1995). Ecologically sustainable organizations: An institutional approach. *Academy of Management Review*, 20, 1015-1052.
- Joseph, F. H. Jr., Rolph, E. A., Ronald, L. T., & William, C. B. (1998). *Multivariate data analysis* (5th ed.). Prentice Hall, Inc.
- Kollman, K., & Prakash, A. (2002). EMS-based environmental regimes as club goods: Examining variations in firm-level adoption of ISO 14001 and EMAS in UK, US, and Germany. *Policy Sciences*, 35(1), 43-67.
- Kostova, T. (1999). Transnational transfer of strategic organizational practices: A contextual perspective. *Academy of Management Review*, 24(2), 308-324.
- Makino, S., Isobe, T., & Chan, C. M. (2004). Does country matter? *Strategic Management Journal*, 25, 1027-1043.
- Margolis, J. D., & Walsh, J. P. (2003). Misery loves companies: Rethinking social initiatives by business. *Administrative Science Quarterly*, 48(48), 268-305.
- Margolis, J. D., Elfenbein, H. A., & Walsh, J. P. (2007). Dose it pat to be good? A meta-analysis and redirection of research on the relationship between corporate social and financial performance. *Working Paper*.
- McWilliams, A., Siegel, D. S., & Wright, P. M. (2006). Corporate social responsibility: Strategic implications. *Journal of Management Studies*, 43(1), 1-18.
- Mohr, L. A., & Webb, D. J. (2005). The effects of corporate social responsibility and price on consumer responses. *Journal of Consumer Affairs*, 39(1), 121-147.
- North, D. C. (1990). *Institutions, institutional change and economic performance*. Washington University, St Louis.
- Oliver, C. (1991). Strategic responses to institutional processes. *Academy of Management Review*, 16, 145-179.
- Oliver, C. (1997). The influence of institutional and task environment relationships on organizational performance: The Canadian construction industry. *Journal of Management Studies*, 34, 99-124.
- Peng, M. W. (2002). Towards an institution-based view of business strategy. *Asia Pacific Journal of Management*, 19, 251-267.
- Peng, M. W. (2003). Institutional transitions and strategic choices. *Academy of Management Review*, 28(2), 272-296.
- Peng, M. W. (2006). *Global strategy*. Cincinnati: South-Western Thomson.
- Peng, M. W., & Chen, H. (2009). The institution-based view as a third leg for a strategy tripod. *Academy of Management Executive*, 23(3), 63-81.
- Porter, M. E., & Kramer, M. R. (2006). Strategy and society: The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84(12), 78-92.
- Qu, R. (2007). Effects of government regulations, market orientation and ownership structure on corporate social responsibility in China: An empirical study. *International Journal of Management*, 24(3), 582-591.

- Martínezros, E., & Kunapatarawong, R. (2013). Influences of institutional pressures on corporate social responsibility attitude and corporate social responsibility outcomes. *Business Economics Working Papers*.
- Rowley, T., & Berman, S. (2000). A brand new brand of corporate social performance. *Business & Society*, 39(4), 397-418.
- Rugman, A. M., & Verbeke, A. (1998). Corporate strategies and environmental regulations: An organizing framework. *Strategic Management Journal*, 19(4), 363-375.
- Sanjay, S., & Harrie, V. (1998). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. *Strategic Management Journal*, 19, 729-753.
- Sankar, S., & Bhattacharya, C. B. (2001). Does doing good always lead to doing better? Consumer reactions to corporate social responsibility. *Journal of Marketing Research*, 38(2), 225-244.
- Scott, W. R. (1987). The adolescence of institutional theory. *Administrative Science Quarterly*, 32, 493-511.
- Scott, W. R. (1994). Institutional analysis: Variance and process theory process theory approaches. In R. W. Scott and I. W. Meyer (Eds.), *In institutional environments and organizations: Structural complexity and individualism* (pp. 81-99). Thousand Oaks, CA: Sage.
- Scott, W. R. (1995). *Institutions and organizations*. London: Sage.
- Shah, K. U. (2011). Organizational legitimacy and the strategic bridging ability of green alliances. *Business Strategy and the Environment*, 20(8), 498-511.
- Simpson, W. G., & Kohers, T. (2002). The link between corporate social and financial performance: Evidence from Banking Industry. *Journal of Business Ethics*, 35(2), 97-109.
- Ullmann, A. A. (1985). Data in search of a theory: A critical examination of the relationships among social performance, social disclosure, and economic performance of US firms. *Academy of Management Review*, 10(3), 540-557.
- UN. (2010). A new era of sustainability. *UN Global Compact—Accenture CEO Study 2010*, last accessed July 28th, 2010.
- Wood, D. J. (1991). Corporate social performance revisited. *The Academy of Management Review*, 16(4), 691-718.
- Wright, P., & Ferris, S. (1997). Agency conflict and corporate strategy: The effect of divestment on corporate value. *Strategic Management Journal*, 18(1), 77-83.