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Collaborative Governance and Corporate Environmental Compliance in China

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Research Questions

Existing literature has acknowledged that collaborations between government and business are necessary for effective making and implementation of public policy (Daley, 2009; Freeman, 1997; King, 2007; Gunningham, 2009); yet most studies have neglected the organizational mechanisms through which firms respond to environmental regulation.

Q1: In what ways and to what extent the way regulatees respond to regulatory pressures are related to corporate environmental management?

Q2: What kind of role does organizational commitment play in this process?

Theoretical Background

•Proactive Environmental Management (PEM)

PEM aims more than fulfilling environmental regulations (Sharma 2000), but involves a comprehensive EM process that requires greater managerial efforts. (Liu et al. 2010; Lo, et al. 2010).

Firms differ in the extent to which EM programs are genuinely integrated into business operation. In China, internal implementation is a barrier in many business cases (Lo, Fryxell, & Tang, 2010).

Determinants of PEM—1

- 1. The Natural-Resource-Based-View (NRBV) of Firm: resources that allow firms to reduce the negative impact on the natural environment, and thus addresses the fit between what a firm is capable of and what it has the opportunity to do on environmental issues (Berchicci & King, 2007; Russo & Fouts, 1997).
- 2. Corporate compliance styles: the general approaches adopted by regulatees to meet regulatory requirements (Liu et al., working paper).

A Dimensional View of CCS

Responsive dimensions

<i>Formalism</i>	Adhere to formal rules and use them as sole compliance benchmarks
<i>Accommodation</i>	Actively respond to, negotiate, or reconcile political / bureaucratic demands

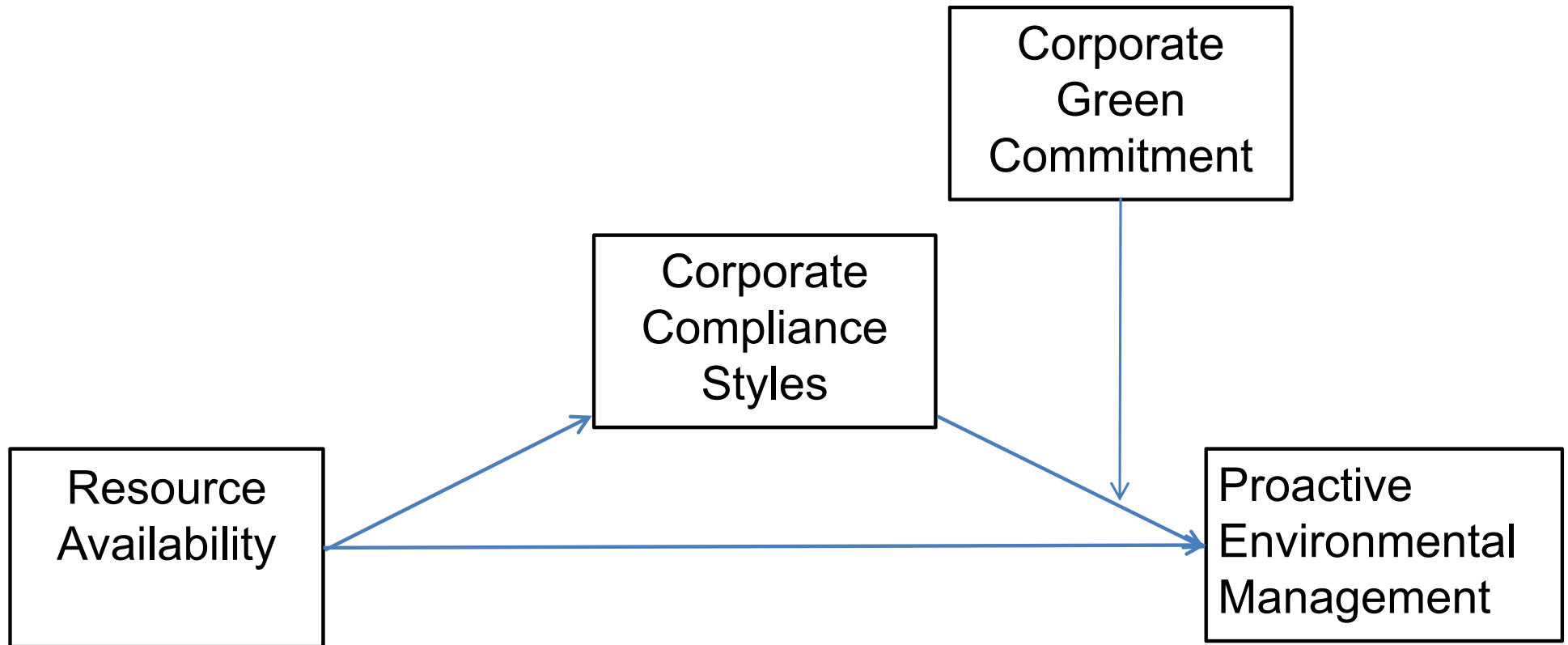
Voluntary dimensions

<i>Referencing</i>	Either conscious or unconscious imitation of reference groups
<i>Self-determination</i>	Prioritize firms' own interests and preferences in decision making

Determinants of PEM—2

- 3. Organizational commitment (Scholz & Lubell, 1998; Weaver, Treviño, and Cochran, 1999): many adopted a behavioral perspective (Coglianese and Nash 2001; Ramus and Steger 2000; Roy et al. 2001).
- To capture the role of corporate green commitment (CGC), we adopt Meyer and Allen's (1991) organization commitment (OC) model, and define CGC as the strength of a firm's identification with and willingness to improve environmental performance.

Figure 1 The research model



Hypothesis 1

- The positive association between organizational resources (capabilities) and environmental performance (Aragón-Correa & Sharma, 2003; Russo & Fouts, 1997; Sharma & Vredenburg, 1998).
- One major reason that ISO-certified firms in China did not fully implement the standards is the high costs of complying with the continual improvement principle of management system standards (Yeung & Mok, 2005).

***Hypothesis 1.** A firm's resource availability (RA) is positively related to its proactive environmental management (PEM).*

Hypothesis 2

- Besides a direct impact, a firm's resource availability could also affect its proactive environmental management via adopting a certain compliance style.
- E.g. accommodative firms usually take proactive stand to deal with bureaucratic stakeholders, and hence are more likely to have an better PEM; The greater latitude on how to meet goals also allows firms time to deploy new means to meet goals (Majumdar & Marcus, 2001).

Hypothesis 2: Corporate compliance styles (CCSs) mediate the positive association between firms' resource availability (RA) and proactive environmental management (PEM).

Hypothesis 3

- **CGC's MODMED effect on responsive CCSs**
- Highly committed firms are more likely to integrate formal demands into its daily practices to obtain continuous improvement. Less committed firms may adopt a ceremonial behavior to reconcile regulatory pressure without genuine progress (Weaver, Treviño, and Cochran, 1999).
- Highly committed enterprises are likely to overestimate the potential benefit and nature through accommodating additional political demands, while less committed may concern the cost more.

Hypothesis 3

- **CGC's MODMED effect on voluntary CCSs**
- Highly committed firms are more likely to follow proactive models while those with a low CGC may think it is unnecessary to invest in greener technologies, or even follow bad apples.
- Firms strongly perceive reducing environmental harm to be a social duty are more likely to encourage internal eco-innovation to promote environmental performance (Gunningham & Grabosky, 1998).

Hypothesis 3: CGC moderates the indirect effect of RA on PEM through CCSs. The mediation effect of CCS is stronger when a firm has a higher degree of green commitment.

Methodology

Data Collection: Survey in manufacturing industries in the Pearl River Delta (PRD) Region in China: N=192 (52%)

Measurement

- **PEM:** 10 items (Liu et al., 2010; Yee et al. 2013) $\alpha = .93$.
- **RA:** 12 items (Russo and Fouts, 1997) $\alpha = .87$.
- **CCS:** 14 items: formalism ($\alpha = .70$), accommodation ($\alpha = .72$), referencing ($\alpha = .78$), self-determination ($\alpha = .73$).

EFA: four components explain 63.6% of the variance

CFA: CFI = .95, TLI = .93, RMSEA = .05; $\chi^2 / (d.f.) = 1.55 (< 2.0)$

- **CGC:** 11 items (Meyer and Allen 1997) $\alpha = .85$
- **Controls:** (1) years of operation, (2) firm size, (3) export proportion, (4) ownership, 5) degree of industrial pollution.

Findings: PEM

	Mean	SD
Clean Production Assessment	4.98	1.780
EMS certifications, such as ISO 14001	5.18	2.011
Reduction in raw resources consumption.	5.08	1.621
Substitution by renewable materials or energy sources	5.39	1.594
Routine environmental audits	5.22	1.645
Environmental training for managers	5.00	1.750
Environmental training for operatives	4.90	1.741
Setting envi perf objectives as part of the annual business plans	4.93	1.705
Including env performance measures in management evaluations	4.95	1.801
Preparation and release of environmental reports	4.56	1.865

Test of Mediation

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Steps and variables	Estimate	Estimate				Estimate
(a) Control variables						
Years of operation	-.245***	.079	-.023	-.017	.159	-.227**
Firm size	.156*	-.088	-.004	.145	-.165	.136*
Export	-.047	-.037	-.079	-.099	-.034	-.036
Ownershipd1	-.159	.080	.249	-.032	.008	-.188
Ownershipd2	-.184	.048	.042	.031	.051	-.186
Ownershipd3	-.268	.044	.089	-.049	.111	-.268*
RA	.712***	.473***	.532***	.462***	.543***	.676***
Accommodation						.002
Referencing						.124*
Self-determination						.038
Formalism						-.089
Model F statistics	30.033***	7.6***	14.15***	7.76***	10.78***	24.16***
Adjusted R ²		.21***	.34***	.21***	.28***	.59***

Test of Moderated Mediation

- Hierarchical multiple regressions following the steps suggested by Muller, Judd, and Yzerbyt (2005).
- Three models as following were tested:

$$Y = b_{10} + b_{11}X + b_{12}M + b_{13}XM + e_1 \quad (1)$$

$$M = b_{20} + b_{21}X + b_{22}Mo + b_{23}XMo + e_2 \quad (2)$$

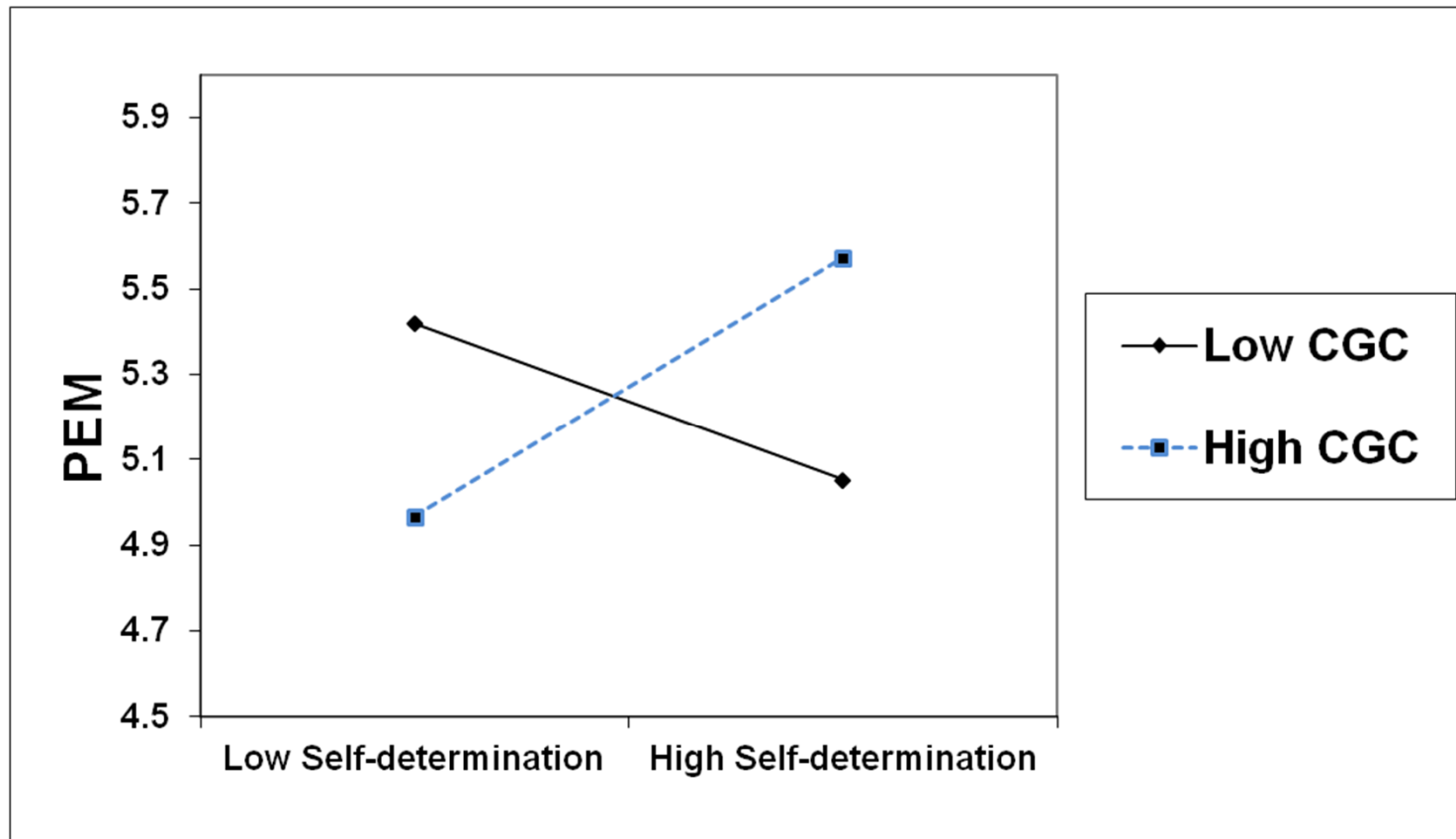
$$Y = b_{30} + b_{31}X + b_{32}M + b_{33}XM + b_{34}Me + b_{35}MeM + e_3 \quad (3)$$

Test of Moderated Mediation

	Referencing			Self-determination		Formalism		Accommodation	
	Model 1	Model 2a	Model 3a	Model 2b	Model 3b	Model 2c	Model 3c	Model 2d	Model 3d
Predictors									
Years of operation	-.301**	.012	-.303**	.010	-.322	-.009	-.210**	.055	-.214**
Size	.189*	.006	.192*	.129	.193	.142*	.122	-.039	.136*
Export	-.069	-.079	-.061	-.122	-.044	-.173	-.058	-.039	-.053
owner_dummy1	-.580	.340	-.253	-.305	-.546	-.058	-.232	.061	-.201
owner_dummy2	-.807	-.024	-.263	-.172	-.812	-.115	-.235	.119	-.232
owner_dummy3	-1.216*	.143	-.382	-.354	-1.188	-.059	-.302*	.100	-.292*
X: RA	.892***	.484***	.796**	.291*	.908***	.249*	.677***	.303***	.655***
MO: CGC	.030	.057	.073	.215	.017	.440***	.077	.161	.041
XMO: RACGC	-.085	-.115*	-.106	-.064	-.197**	.059	-.032	.047	-.036
ME:			.190*		.060		-.111		-.033
MEMO:			.091		.243**		-.050		-.056

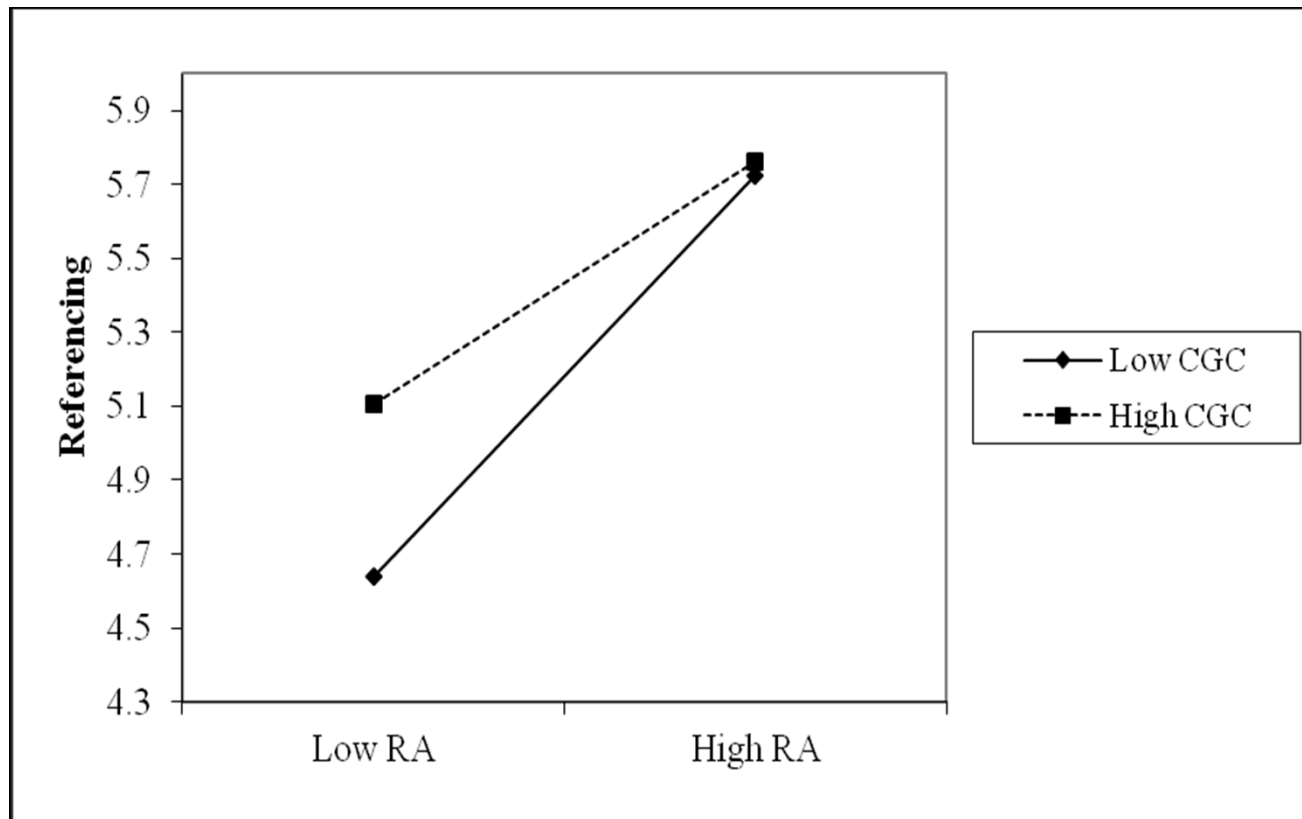
The Moderating effect of CGC

Self-determination * CGC on PEM



The Moderating effect of CGC

RA * CGC on Referencing



Discussions

- Although resource availability is still a fundamental determinant of PEM, there are indirect mechanisms through which such positive association sustains.
- Responsive and voluntary dimensions differ in their role in connecting organizational resources with PEM: firms' intrinsic motivation is indispensable in achieving environmental progress.
- The insignificant role of formalism and accommodation might be partly explained by the unique regulatory context in China.

Conclusion

- The failure of formalism and one-way accommodation by regulatees indicates that a collaborative scheme or mutually beneficial government-business relationship is more promising in bringing firms into proactive environmental management.
- A possible trend towards ecological modernization in China (Mol, 2006; Yee, Lo, & Tang, 2013): increasing firms have taken up environmental management practices due to internal commitment and entrepreneurial spirit, instead of passive response to external pressure.
- **Practical implications: policy makers and businesses**

Q&A

Thank You!

