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Research Note

Corporate governance and environmental responsibility

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As a key engine for continued global growth and job creation, tourism-related firms have long been identified as standing in contrast to the global policy momentum that aims to mitigate carbon emissions and enhance resource efficiency and social inclusiveness (United Nations Environment Programme, 2011). To become responsible entities, nowadays, tourism-related firms actively engage in corporate environmental responsibility (CER) activities to deal with their negative effects on the society in which they operate. Although the pressure exerted by external factors undoubtedly affects a firm's CER practices, Sharma and Henriques (2005) point out that the corporate governance (CG) that drives firms should be analysed as it will reveal how firms understand CER and how they put it into practice. In this regard, understanding whether CG mechanisms improve CER is an issue of utmost importance as it might help in promoting and implementing environmental responsibility in organisations, which in turn will contribute to the sustainable development of firms. This study therefore aims to investigate the relation between CG and CER by empirically testing the impact of various CG mechanisms on firms' CER in the tourism-related firms.

Unlike the traditional CG system which intends to safeguard shareholders' wealth and assure a proper return for their investment, the evolution of CER in the contemporary business has developed the notion of CG as a vehicle for pushing management to incorporate business practices that increasingly concern environmental issues. While the importance of CG and CER have recently been highlighted in the tourism literature (Guillet & Mattila, 2010; Wells, Gregory-Smith, Taheri, Manika, & McCowlen, 2016), the two competing arguments concerning the relationship between CG-CER remain open for discussion. On the one hand, the agency theory-based overinvestment hypothesis (Barnea & Rubin, 2010) posits a negative impact of CG on CER as firms with effective CG curtail the managerial self-interest for CER over-investment (less agency problem). While, on the other, the stakeholder theory-based conflict-resolution hypothesis (Freeman, 1984) posits that CER is positively related to CG as effective CG enforces managers to act in the best interests of shareholders and reduces conflicts between shareholders and non-investing stakeholders.

The evidence concerning the CG-CER link is scant in the tourism literature (with the exception of Paek, Xiao, Lee, & Song, 2013). Moreover, Deschênes, Rojas, Boubacar, Prud'Homme, and Ouedraogo (2015) and Lin, Li, and Bu (2015) suggest the need to examine more comprehensive CG mechanisms, rather than focus on a single measure of CG characteristic, to better assess how each mechanism drives managers in promoting the CER objectives. This study thus contributes to the tourism literature in the following ways. First, this study merges the ideas of Deschênes et al. (2015) and Lin et al. (2015), by investigating various CG mechanisms and their impacts on CER in the tourism-related firms under the context of a new dataset, namely, DataStream ASSET4 database. Second, complementing previous studies, this study offers additional insights in determining the relative importance of the conflict resolution compared with the overinvestment hypothesis in the tourism context.

To investigate the CG-CER relationship, this study utilises the samples of all tourism-related firms across different countries for the period 2005–2013, which are available in the DataStream ASSET4 database. This yields a number of 144 tourism-related firms. The final sample is an unbalanced panel of 926 firm-year observations. This study hypothesises that the tourism-related firms with effective CG tend to engage more in CER as a way of discharging their environmental responsibility, and argues that the conflict-resolution hypothesis has greater validity than the overinvestment hypothesis.

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The measure of CER (CER Index) is calculated based on the CER-related items provided by the DataStream ASSET4 database. There are total of 70 items: emission reduction (28 items), resource reduction (17 items) and product innovation (25 items). The CER Index for firm i at year t (CER Index_{it}) is constructed by dividing the sum of all CER items for firm i at year t by total maximum possible number of CER items at year t. The constructed CER Index is then regressed on CG mechanisms and firm-level control variables using the dynamic model, as below:

$$\text{CER Index}_{it} = \alpha + \phi\text{CER Index}_{it-1} + \beta\text{CG Mechanisms}_{it} + \delta\text{Firm Controls}_{it} + \eta_i + \varepsilon_{it} \quad (1)$$

where ϕ, β and δ are vectors of coefficients on lagged CER Index, CG Mechanisms and Firm Controls, respectively; η_i denotes unobserved time-invariant firm effects while ε_{it} is a random error term. Following Lin et al. (2015), this study considers four dimensions of CG mechanisms: Board characteristics, Sub-Committee, Board index and Ownership. Board characteristics includes (i) independent board (BIND), (ii) board meeting (BMEET), (iii) board size (BSIZE), and (iv) CEO pay link (CEOPay). Sub-Committee includes (i) committee independence, (ii) CER committee presence, and (iii) CER committee index. These sub-committees are set up under the board of directors to serve their individual functions. Board index refers to (i) board functionality index, and (ii) board structure index; while Ownership refers to the fraction of shares held by shareholder concentration. Firm Controls refers to firm-level control variables. The four commonly used controls in the literature are included; namely, (i) dividend yield, (ii) firm size, (iii) slack, and (iv) return on assets (ROA). Data for CG mechanisms and firm controls are obtained from the DataStream ASSET4 and WorldScope database, respectively. The variable definitions and measures used in this study are displayed in Fig. 1.

The model (1) is examined using the dynamic system generalised methods of moment (GMM), following Wintoki, Linck, and Netter (2012) and the results are presented in Table 1. The coefficients of BIND and BSIZE (column 1); all three sub-committees (column 2); together with BFI and BSI (column 3); are shown to be positive and significant at the 5% level of significance. The coefficient of Ownership (column 4), however, is negative but insignificant. In brief, the significant positive relation indicates that board characteristics, especially independent board and board size, are important elements in guiding tourism-related firms' engagement in CER activities. In addition, the tourism-related firms that reach the required level of committee independence, with the presence of a CER committee, and have a high CER committee index are shown to be positively related to CER. Moreover, firms with deliberate structuring and functionality of corporate boards, tend to engage more in CER to discharge their responsibility. The positive and significant relationship between various CG mechanisms and CER is

Dependent Variable: CER Index (source: DataStream ASSET4)	
CER Index (i, t) =	sum of all CER items for firm i at year t / total maximum possible number of CER items at year t (Total 70 items)
CG mechanisms* (source: DataStream ASSET4)	
Board characteristics	
Independent Board **(BIND) =**	Dummy of 1 if a board reaches the required independence level set by the regulator, 0 otherwise
Board Meeting **(BMEET) =**	The number of board meeting annually
Board Size (**BSIZE**) =	The number of directors on the board
CEO pay link (**CEOPay**) =	Dummy of 1 if CEO compensation is linked to firm performance, 0 otherwise.
Sub-Committee	
Committee independence (**Committee independence**) =	Dummy of 1 if sub-committee under the board of directors reaches the required independence level set by the regulator, 0 otherwise
CER committee presence (**CER Committee presence**) =	Dummy of 1 if the board has set up a CER committee, 0 otherwise
CER committee index (**CER Committee Index**) =	CGVSDP005+CGVSDP030+CGVSDP013+CGVSDP029+CGVSDP026+CGVSDP023)/6)
Board Index	
Board functionality index (**BFI**) =	Sum of board function items for firm i at year t/ total maximum possible number of board structure items at year t (Total 11 items)
Board structure Index (**BSI**) =	Sum of board structure items for firm i at year t / total maximum possible number of board structure items at year t (Total 13 items)
Ownership	
Ownership **(Ownership) =**	The fraction of shares held by shareholder concentration
Firm Controls (source: DataStream Worldscope)	
Dividend yield =	Cash dividend per share
Firm Size =	Log of total assets
Slack =	Log of (cash + short-term investment at the end of the year)
ROA =	Return on asset

*Items used for the measures of CG mechanism are directly adopted from Lin et al. (2015).

Fig. 1. Variable definitions and measures.

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