

**The impact of boards of directors on CSR: The complementary and supporting
role of board information search and board size**

Jeremy Galbreath

Curtin Graduate School of Business, Curtin University, Perth, Australia
jeremy.galbreath@gsb.curtin.edu.au

Gavin Nicholson

School of Business, Queensland University of Technology, Brisbane, Australia
g.nicholson@qut.edu.au

Mohammed Quaddus

Curtin Business School, Curtin University, Perth, Australia
m.quaddus@curtin.edu.au

Stream 8: Leadership and Governance
Competitive Session**The impact of boards of directors on CSR: The complementary and supporting role of board information search and board size**

ABSTRACT: Board processes are likely to affect the degree to which boards influence corporate social responsibility (CSR). Research also indicates that these processes may also be influenced by board size. To explore these relationships, companies from the Australian Securities Exchange (ASX) 300 index are studied using partial least squares (PLS) structural modelling. We introduce a new board process construct, social issues information search, and find evidence it is positively associated with CSR. Further, board size directly affects CSR, as well as positively moderates the relationship between social issues information search and CSR. This study advances an understanding of how board behaviour and board demography perspectives can converge to effect firm outcomes, demonstrating their complementary nature.

Keywords: Boards of directors, board processes, board size, CSR, moderation

Corporate social responsibility (CSR) is defined as “a discretionary allocation of corporate resources toward improving social welfare that serves as a means of [meeting the interests of] key stakeholders” (Barnett, 2007, p. 801). CSR therefore reflects the extent to which firms actively engage in voluntary initiatives that respond to stakeholder interests in social issues (Barnett, 2007; Galbreath, 2009; Wood, 1991). Increasingly, boards of directors are being called on to oversee a firm’s social initiatives (Eccles & Youmans, 2015; Lawler & Mohrman, 2013; Paine, 2014; Rangan, Chase, & Karim, 2014). Yet, due to factors such as a lack of experience or a lack of understanding of the issues related to social initiatives, some directors claim that they are uncertain about how best to approach CSR (Lawler & Mohrman, 2013; Paine, 2014).

We posit that as CSR becomes important to firm strategy and competitive advantage (Galbreath, 2009, Porter & Kramer, 2006), there remains an imperative to understand what links boards to CSR (cf. Brammer & Millington, 2008). A potentially fruitful, emerging research avenue is the behavioural theory of boards (Pettigrew, 2013; van Ees, Huse, & Gabrielsson, 2009). This is because the behavioural theory of boards is particularly interested in the constraints in effectively gathering and processing information, which can create process losses leading to ineffectual decision making (Pugliese, Nicholson, & Bezemer, 2015; van Ees, Huse, & Gabrielsson, 2009). If directors demonstrate reservation and uncertainty around

CSR (Lawler & Mohrman; 2013; Paine, 2014), then a behavioural understanding could lead to new insights. More specifically, a behavioural theory of boards seeks mainly to understand what group processes lead to improved board task performance and firm outcomes. Scholars are particularly interested in the processes boards use in decision making (e.g., Finklestein & Mooney, 2003; Minichilli, Zattoni, & Zona, 2009; Minichilli, Zattoni, Nielsen, & Huse, 2012; Nielsen & Huse, 2010; Zhang, 2010; Zona & Zattoni, 2007). Given group effectiveness is also contingent on group size (Forbes & Milliken, 1999; Steiner, 1974), this study poses the question: *Do board processes and board size affect CSR and, if so, is there any interaction?*

This study makes three key contributions. First, directors' human capital is widely acknowledged as a key attribute that affects their contribution to firm outcomes (e.g., Hillman & Dalziel, 2003). But an individual's human capital is dynamic, changing in response to the individual's accumulation of knowledge and experience. Thus, a director's active search for information is thought to improve firm outcomes by "enhanc[ing] knowledge creation through integrating information, and controlling sampling and evaluation biases" (Zhang, 2010, p. 478). Following this line of thinking, our study introduces and examines a new board process; namely, social issues information search (SIIS). SIIS is the degree to which actors search for information that reflects stakeholder interests in societal issues (Galbreath, 2009). We therefore extend research on the process of information search at the board level, a fruitful yet markedly understudied area (Zhang, 2010). Second, CSR is the primary firm outcome of interest. CSR increasingly falls under the auspices of board responsibility (Eccles & Youmans, 2015; Lawler & Mohrman, 2013; Paine, 2014; Rangan et al, 2014), yet we know of no prior studies exploring the effects of board processes on CSR. Hence, this research contributes new knowledge to an expanding area of board oversight. Third, previous board process studies have given limited treatment of how or why the size of the board might mediate or moderate board processes. This omission is surprising, given that the size of a group influences its effectiveness (Kerr & Tindale, 2004; Steiner, 1974). Board size is included in the investigation, to further integrate board demography and process perspectives (Forbes & Milliken, 1999).

THEORY AND HYPOTHESES

Mainstream theories of the firm posit that firms, and therefore boards, are tasked solely with ensuring profits are maximized in the interests of shareholders (e.g., Fama & Jensen 1983). However, board responsibilities continue to expand to include oversight of a broader group of stakeholder interests and non-financial outcomes such as CSR (Eccles & Youmans, 2015; Lawler & Mohrman, 2013; Paine, 2014; Rangan et al., 2014; Wagner et al., 2009). Yet, directors have highlighted that they are uncertain about how best to approach CSR (Lawler & Mohrman; 2013; Paine, 2014). In situations of uncertainty, access to new information is necessary to interpret the environment and to inform decision making (Daft & Weick, 1984). This is backed up by Jensen (1993), who argues that serious information problems limit the effectiveness of board members' decision-making capabilities. This study therefore posits that certain board processes are critical to effect strategic decision making in CSR (Galbreath, 2009). Both practitioner studies and the academic literature demonstrate that board effectiveness is dependent upon the extent to which the group has access to relevant information (Sonnenfeld, 2002; Zhang, 2010). Further, there is a distinguished group theory tradition (Kerr & Tindale, 2004; Steiner, 1974), highlighting that board size likely plays a role in board influence on firm outcomes such as CSR.

Direct effects

Boards face multi-faceted tasks involving complex strategic-issue processing (Jackson, 1992). Furthermore, because they meet infrequently and for short periods of time (Forbes & Milliken, 1999), they are particularly subject to process loss and sub-optimal decision making. This suggests that board processes, such as those related to information acquisition, are central to decision effectiveness (Conger & Lawler, 2009; Jackson, 1992). For example, information provided by management on a firm's financial position with respect to achieving results for shareholders is central for board decision making (Charan, 1998), yet is likely of limited value when making CSR decisions. This is because CSR must address a variety of stakeholders and non-financial outcomes—not just shareholders and wealth creation (Clarkson, 1995). Therefore, information on the social issues impacting on a firm—for example, fair work practices

and human rights, community obligations, and supply chain requirements (Galbreath, 2009)—is likely to require a clear process separate from traditional economic information search.

Engaging in SIIS would, we contend, lead directors to an increased awareness of the need for CSR through providing insight of the external environment and the concerns important to stakeholders and CSR strategies (Galbreath, 2009). Following Ocasio (1997), exposure to this information is likely to direct board attention to and create an enhanced understanding of CSR (cf. Galbreath, 2009; Sonnenfeld, 2002; Tuggle, Schnatterly, & Johnson, 2010). This process of “noticing and constructing meaning” about what is driving the need for a CSR response on behalf of stakeholders is expected to lead to strategic action (Kiesler & Sproull, 1982). Hence:

Hypothesis 1: Social issues information search (SIIS) is positively associated with CSR.

While there is contradictory evidence regarding the impact of board size on firm outcomes (Dalton, Daily, Johnson, & Ellstrand, 1999; De andres, Azofra, & Lopez, 2005), board size is likely important to CSR decision-making due to *uncertainty*. For example, if a board is considering a quarterly dividend policy, there is unlikely to be a high level of uncertainty surrounding such a decision given clear financial parameters and so the size of the board is unlikely to make a significant difference to the decision. This particularly would be the case where institutional memory exists and prior experience with similar decisions allow for shared mental models. However, as boards take on expanded roles and confront emerging challenges where little institutional memory exists, or where past decision-making experience is limited, the size of the board could be an advantage. This is because there is an increasing knowledge base on which the board can draw (Hillman & Dalziel, 2003). CSR appears to be one such issue (Lawler & Mohrman; 2013; Paine, 2014).

Boards are looking to improve their expertise with CSR decision-making, a view supported both by normative descriptions (e.g., Paine, 2014) and academic interest (e.g., Bear, Rahman, & Post, 2010). This is likely to be the case for several reasons. First, CSR investments are subject to much unquantified risk and have payback periods that are longer term—if not unknown (Bansal, 2005). This challenges existing mental models, thinking, and knowledge. Second, CSR requires significant change in

organizations and their strategies (Shrivastava & Hart, 1995). Third, according to Siebenhüner and Arnold (2007), firms that seek to integrate CSR into their core business processes are likely to face significant challenges as they seek to adopt these processes. These challenges may include the reinvention of products, the complete re-engineering of existing corporate processes, and the requirement to transform basic values and knowledge systems. Such transformations are unlikely to be met by applying ready-made concepts or by attempting to implement conventional strategies in new contexts.

Because CSR poses new challenges for boards (Lawler & Mohrman; 2013; Paine, 2014), larger boards may be in a position to more effectively respond. For example, larger boards are expected to offer greater variety in experiences and backgrounds (Zahra & Pearce, 1989), and therefore are likely to have a greater capacity to address situations where there is uncertainty surrounding decision making. Larger boards are also expected to have a greater capacity to link to the environment to secure resources (Goodstein, Gautam, & Boeker, 1994). Having access to more resources is expected to provide boards with greater financial leeway towards achieving CSR outcomes (Kassins & Vafeas, 2002). Further, larger boards have greater recognition of the need to initiate or support strategic change because of their wider-ranging backgrounds and experiences, while offering a broader range of alternatives with respect to required changes (Golden & Zajac, 2001). As CSR requires significant change and initiative (Bansal, 2005; Shrivastava & Hart, 1995; Siebenhüner & Arnold, 2007), larger boards would be expected to be in a position to initiate and endorse the changes required to advance CSR. Thus:

Hypothesis 2: Board size is positively associated with CSR.

The moderating influence of board size

In addition to any direct effects of group size due to increased experiences, perspectives, and links to the environment, the extant literature on work groups suggests that the size of the group can also impact on the effectiveness of group processes (Wheelan, 2009; Steiner, 1972). For example, some research finds that smaller groups demonstrate more effective use of group processes (Laughlin, Hatch, Silver, & Boh, 2006). On the other hand, Wanous and Youtz (1986) conclude that large sized groups enhance the productive use of group processes. In an observation of why such contradictory results could exist,

Steiner (1972) notes that the influence of the size of the group on process productivity depends on the type of task the group is working on. Following Steiner's (1972) perspective, the information search behaviour needed to effect CSR is the focal task for consideration.

While the information that directors bring to a board provide inputs to board decision-making (Pelled, Eisenhardt, & Xin, 1999), the magnitude of the effect of SIIS on firm outcomes could be contingent on the number of directors on the board. For example, larger groups increase the potential of the volume—if not variety—of information available. Compared to small workgroups with limited information search capacity, an expanded information set from a larger group helps in the recognition and constructive response to complex issues (Eisenhardt, Kahwajy, & Bourgeois, 1997; Greitemeyer, Schulz-Hardt, & Frey, 2003). The level of response may therefore subject to workgroup size.

Given that CSR encompasses a variety of social issues (Galbreath, 2009), larger boards would be expected to have a greater potential to offer a broader base of information. Here, as board size increases, so does the potential of an expanded set of information related to social issues. This would increase the richness of information available to the group related to CSR decision-making. Thus, as the size of the board increases, the larger the expected effect of SIIS search on CSR. This leads to the final hypothesis:

Hypothesis 3: Board size positively moderates the relationship between SIIS and CSR.

METHODS

Sample and data collection

This study uses firms in the Australian Securities Exchange (ASX) 300 Index, which have been assessed by GES Investment Services (GES), a top-three ranked global CSR research agency (Schäfer, Beer, Zenker, & Fernandes, 2006). GES analysts rate firms' CSR based on information obtained from official company documents (e.g., annual reports), through direct dialogue that comes in the form of company surveys or site visits, and public information from, for example, the media and NGOs.

Data on the board process variable was collected via a larger survey on corporate governance practices in Australia, which was completed in 2011. The survey was mailed to 792 directors (including

CEOs, chairpersons who were not also the CEO, and company secretaries) representing 300 firms. These respondents were deemed to be well positioned to assess board room dynamics and processes. After an initial mailing and follow-up, responses were received from 96 participants representing 72 firms. This equates to a 12 percent response rate at the individual participant level and 24 percent at the firm level, in line with expectations (Cycyota & Harrison, 2006). To test for non-response bias, early versus late respondents were compared. No significant differences were found between any of the variables. This suggests that the results should not suffer from non-response bias.

Dependent variable

GES assessment of CSR is based on employee, community, and supplier subcategories. For each subcategory, there are between three and six indicators covering local community involvement, corruption, discrimination, human rights, labour standards, and supply chain compliance (Appendix I). In this way, the GES ratings provide a reasonable proxy for a range of CSR indicators. For measurement, scores for each indicator are on a 7-level scale ranging from C (low) to A+ (high). These are converted into a metric variable from 1 (lowest) to 7 (highest) for analysis. Scores for each subcategory are then taken for each firm for each year for the time period (2011–2013). The three-year average for each subcategory is used to avoid possible anomalies in single year measures.

Independent and moderating variables

Social issues information search is the extent to which actors search for information related to societal issues that are important to stakeholders (Galbreath, 2009). To assess the construct, the Zhang (2010) measure of “active search” was adapted to the specific requirements of this study. The measure contained five items designed to capture perceptions that directors on the focal board engage in social issues information search (the scale ran from 1 = *never* to 4 = *always*). The items were: 1) directors can be characterized as collecting information related to social issues for board meeting discussion; 2) directors on this board can be characterized as contributing information during boards meetings that reflect perspectives related to social issues; 3) during board meetings, directors offer information on ways to approach social issues affecting the company; 4) directors compile relevant information for board

meetings about a variety of stakeholder interests and concerns that affect the social responsibilities of the company; and 5) during board meetings, directors provide information on the social challenges facing the company. The Cronbach α for the measure was .87.

Where there were multiple survey respondents for firms, within-group agreement was calculated for the SIIS construct by computing $r_{wg(i)}$. The obtained mean value of 0.93 suggests a sufficient level of agreement among multiple respondents to treat the independent variable as representing the board perspective (LeBreton & Senter, 2008). Hence, where appropriate, the construct rated by multiple respondents was aggregated for analysis and the mean taken.

Board size was measured as the total number of directors residing on the board. Data were collected from DatAnalysis. DatAnalysis is an online database offering extensive information on Australian firms, including information on boards of directors.

Control variables

Because of the small sample, care was taken to be parsimonious with respect to the use of control variables. Each was collected for the year 2011. Firm size is critical because larger firms are expected to have more resources to commit to CSR (Galbreath, 2011). Therefore, *firm size* was measured as total assets, and data was collected from DatAnalysis. Given the highly skewed nature of this distribution, a natural logarithm function was used to transform this variable. A second critical control variable relevant to CSR studies is industry. Different industries face different institutional pressure to respond to CSR (Bansal, 2005). To account for these differences, the FTSE4Good Index Series Inclusion Criteria (FTSE Group, 2010) were used to assign each industry category a high (consumer discretionary, consumer staples, energy, industrials, and materials), medium (financials, health care, and utilities), or low (information technology, property trusts, and telecommunications services) *industry impact* rating based on social issues impact. Dummy variables were then created for each category. The high impact dummy variable acted as the referent group and was omitted from the analysis. Lastly, gender diversity is a critical control variable as “board gender diversity is [consistently] associated with a greater commitment

to CSR (Cook & Glass, 2015, p. 119). *Gender diversity* was measured by the percentage of women on the board, sourced from DatAnalysis.

RESULTS

Means, standard deviations, and correlations are presented in Table 1. The measurement model is provided in Appendix II and demonstrates excellent psychometric properties. Further, the highest variance inflation factor (VIF) of 2.497 and the lowest tolerance value of .400 suggest that multicollinearity is unlikely to be present. Hypotheses were tested using PLS (partial least squares), a structural equation modelling (SEM) technique. PLS is particularly suited to analysis of small samples (Barclay, Higgins, & Thompson, 1995), which is the case here. The goodness of fit for the structural model is 0.5 (> 0.36), which is considered high for PLS models (Wetzels, Odekerken-Schröder, & Van Oppen, 2009). Lastly, prior research has noted that large firms in some industries may achieve economies of scale from investment in CSR (Hillman & Keim, 2001; Hull & Rothenberg, 2008; Waddock & Graves, 1997). Thus, CSR could be endogenous to factors such as industry and firm size. Because PLS permits variables to have both antecedents and consequences in the model (Barclay et al., 1995), the use of PLS therefore simplifies the modelling of CSR as an endogenous variable.

 Insert Table 1 about here

Prior to analysis, interaction variables were mean-centred. Figure 1 provides the standardized path coefficients of the structural model. The path from SIIS to CSR is positive and significant ($\beta = 0.35$; $p < 0.001$), suggesting support for Hypothesis 1. The path from board size to CSR is also positive and significant ($\beta = 0.37$; $p < 0.001$), supporting Hypothesis 2. Lastly, the path from the interaction term to CSR is positive and significant ($\beta = 0.19$; $p < 0.05$), demonstrating that board size positively moderates the relationship between SIIS and CSR. This finding offers support for Hypothesis 3.

 Insert Figure 1 about here

DISCUSSION

The findings of this study broadly support the proposal that director engagement in SIIS and board size are directly and positively associated with CSR and that board size positively moderates the relationship between SIIS and CSR. These findings offer three key contributions.

First, prior research concentrates on the effect of board processes on board task performance (e.g. Minichilli et al., 2009; Minichilli et al., 2012; Nielsen & Huse, 2010; Zhang, 2010; Zona & Zattoni, 2007). While such research has provided insight into the processes that help (hinder) a board's monitoring and advice-giving tasks, the present study takes a different approach. More specifically, by concentrating on an emerging challenge, CSR, we investigate an area where boards are likely to especially suffer from an information void. By introducing a way to measure social issues information search by boards (an instrument with promising results demonstrating that social issues information search has acceptable psychometric properties) we link a board process directly with a logical firm outcome, CSR. Hence, by expanding Zhang's (2010) "active search" to a specific *type* of information search, the study contributes a new construct that researchers can use in the further study of board processes and then links that to a firm level outcome.

Second, the study advances our understanding of the relationship between board process and board demography. For example, Nielsen and Huse (2010) find that more gender diverse boards are positively associated with strategic control and development tasks, while at the same time they decrease group conflict in the boardroom. In their study of private family firms, Basco and Voordeckers (2015) show that both outside directors and board task performance positively affect firm performance. The results of the present study corroborate the view that board processes and board demography are complementary. Forbes and Milliken (1999, p. 497) suggest that that board processes appear critical to task effectiveness and ultimately firm performance, but they also argue that board demography is "very likely to be a significant predictor of board behaviour". The results here demonstrate that board size both has a direct and moderating effect in the context of board process. Hence, following Forbes and Milliken

(1999), the results demonstrate more clearly how board demography (board size) interacts with a specific board process (SIIS) and its relationship with CSR.

Lastly, given their high profile, boards are under scrutiny from regulators, the markets, and the public and face considerable backlash when the management of corporate resources is not in line with institutional and societal expectations. While a great deal of emphasis has been placed on board independence as a necessity to ensure “good” corporate governance and the proper allocation of resources, the empirical research, overall, suggests that board independence does not necessarily improve oversight (monitoring) or firm performance (Finegold, Benson & Hecht, 2007). Alternatively, emerging research suggests that board processes not only improve monitoring and advice-giving tasks (Minichilli et al., 2009; Minichilli et al., 2012; Nielsen & Huse, 2010; Zhang, 2010; Zona & Zattoni, 2007), but in the case of this study, CSR. Hence, a managerial contribution of this study points to the need for a more rigorous examination by boards of the processes they use to conduct a firm’s business. Further, for institutional bodies with an interest in boards of directors and how to achieve more effective corporate governance practices, there perhaps should be expanding interest in board processes and the group behaviour of boards.

LIMITATIONS, FUTURE RESEARCH, AND CONCLUSION

There are limitations to this study. First, the sample is relatively small. However, PLS is particularly well-suited to the analysis of small sample sizes (Barclay et al., 1995). Further, with new regulatory demands on boards, the surfeit of consulting surveys, and the growing concern of disclosed information being used in shareholder lawsuits, gaining primary data from boards is “virtually impossible” (Leblanc & Schwartz, 2007, p. 843). Hence, these positive and much needed insights into the black box of boards should be balanced against a concern over small sample size. Future research is needed on board processes looking at both firm-level and group-level outcomes. As such studies are conducted, there is the likelihood of new contributions to knowledge, if not the possibility of increased sample sizes.

Second, the context is Australian boards of directors and the results may not apply elsewhere. However, this is one of the few known studies to examine board processes in Australia, and hence

advances knowledge on board processes beyond studies conducted in Norway, Italy, and the US. Further research is needed in other countries too, for example, in Great Britain, where corporate governance issues have historically been important to both academics and regulatory authorities. Alternatively, virtually nothing is known about how board processes are used by boards of directors of firms in emerging economies, so research in such countries would be helpful.

Third, this study did not measure an environmental aspect of social responsibility. However, there remains much debate over the definition and measurement of CSR (Sheehy, 2014). Some scholars suggest that there is a case for a separate conceptualization and measurement of an environmental dimension—the so-called environmental corporate social responsibility (ECSR) construct (e.g., Post, Rahman, & Rubow, 2011) or the corporate environmental responsibility (CER) construct (e.g., Cai, Cui, & Jo, 2015). Future research could explore the extent to which information search impacts on the strengths of a firm's environmental activities and programs.

Finally, in line with virtually all cross sectional designs, we cannot rule out issues of endogeneity and reverse causality. However, we note the strong theoretical reasons for our argued model structure and care we have taken not to invoke causality in the results section.

In conclusion, which aspects of boards of directors influence CSR is an important question facing corporate governance researchers and practitioners, particularly given that boards are increasingly tasked with overseeing a firm's social responsibilities. By surveying directors and collecting primary data, the analysis here demonstrates that SIIS positively influences CSR. Further, board size plays a dual role: 1) there is a direct relationship between board size and CSR and 2) board size positively moderates the relationship between SIIS and CSR. The findings may assist boards as they seek to gain greater levels of experience and confidence with CSR decision-making.

APPENDIX I

GES Measurement of CSR

Community sub-dimension – captures the engagement of a firm in the community; indicators are, for example, policies for local community involvement, a document policy towards prevention of corruption, and a policy to identify the social impacts of the firm's investments

Employee sub-dimension – firm rating for the compliance with general human rights issues, such as exclusion of child labour and discrimination

Supplier sub-dimension – captures the efforts of a firm in screening its entire supply chain for compliance with social responsibilities including human rights; indicators are the existence of a corresponding management system and a supplier policy that covers the core value of the International Labour Organisation

APPENDIX II

The Measurement Model

Loadings

	BrdSize_SIIS	CSR	SIIS
SocCommunityMean11_13		0.847	
SocEmployeeMean11_13		0.835	
SocSupplierMean11_13		0.675	
ZBrdSize_ZSIISQ1	0.859		
ZBrdSize_ZSIISQ2	0.891		
ZBrdSize_ZSIISQ3	0.931		
ZBrdSize_ZSIISQ4	0.771		
ZBrdSize_ZSIISQ5	0.877		
ZSIISQ1			0.813
ZSIISQ2			0.867
ZSIISQ3			0.888
ZSIISQ4			0.614
ZSIISQ5			0.872

Composite reliability and AVE

	Composite Reliability	AVE	Cronbach Alpha
BrdSize_SIIS	0.938	0.752	0.918
CSR	0.831	0.624	0.714
SIIS	0.908	0.668	0.876

Internal consistency

All composite reliabilities are greater than minimum threshold value of 0.7. Hence the constructs are internally consistent (Barclay et al., 1995). The Cronbach alphas are also above the minimum threshold of 0.7. The average variance extracted (AVEs) for each construct is greater than the minimum threshold value of 0.5. Hence, more variance explained are attributed to the constructs than the errors (Barclay et al., 1995).

Discriminant validity:

(a) Construct level:

Correlations of constructs

	BrdSize_SIIS	CSR	SIIS
BrdSize_SIIS	0.867		
CSR	0.238	0.790	
SIIS	-0.053	0.354	0.817

The bold main diagonal elements are square root of AVEs

The correlation of constructs and the square root AVE are in the main diagonal. Since the square root of AVE (bold) is greater than the corresponding correlations across the row and down the column, discriminant validity is verified (Barclay et al., 1995).

(b) At item level:

Cross loading matrix

	CSR	BrdSize_SIIS	SIIS
SocCommunityMean11_13	0.847	0.238	0.326
SocEmployeeMean11_13	0.835	0.210	0.329
SocSupplierMean11_13	0.675	0.053	0.107
ZBrdSize_ZSIISQ1	0.177	0.859	-0.071
ZBrdSize_ZSIISQ2	0.258	0.891	-0.120
ZBrdSize_ZSIISQ3	0.220	0.931	-0.047
ZBrdSize_ZSIISQ4	0.133	0.771	-0.005
ZBrdSize_ZSIISQ5	0.210	0.877	0.038
ZSIISQ1	0.279	-0.073	0.813
ZSIISQ2	0.290	-0.114	0.867
ZSIISQ3	0.388	-0.041	0.888
ZSIISQ4	0.116	-0.01	0.614
ZSIISQ5	0.275	0.037	0.872

It is observed that the magnitude of the loadings of a construct (e.g., CSR) with its own items are higher than loadings of the same construct with other items in the same column. Hence construct validity is achieved (Hair, Anderson, Tatham, & Black, 1992).

REFERENCES

- Bansal, P. (2005). Evolving sustainability: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, 26, 197-218.
- Barclay, D., Higgins, C. & Thompson, R. (1995). The partial least squares (PLS) approach to causal modelling: Personal computer adoption and use as an illustration. *Technology Studies*, 2, 285-309.
- Barnett, M.L. (2007). Stakeholder influence capacity and the variability of financial returns to corporate social responsibility. *Academy of Management Review*, 32, 794-816.
- Basco, R. & Voordeckers, W. (2015). The relationship between the board of directors and firm performance in private family firms: A test of the demographic versus behavioural approach. *Journal of Management & Organization*, 21, 411-35.
- Bear, S., Rahman, N., & Post, C. (2010). The impact of board diversity and gender composition on corporate social responsibility and firm reputation. *Journal of Business Ethics*, 97, 207-221.
- Brammer, S. & Millington, A. (2008). Does it pay to be different? An analysis of the relationship between corporate social and financial performance. *Strategic Management Journal*, 29, 1325-1343.
- Cai, L., Cui, J. & Jo, H. (2015). Corporate environmental responsibility and firm risk. *Journal of Business Ethics*, in press.
- Charan, R. (1998). *Boards at work: How corporate boards create competitive advantage*. San Francisco, Jossey-Bass.
- Clarkson, M.B.E. (1995). A stakeholder framework for analysing and evaluating corporate social performance. *Academy of Management Review*, 20, 92-117.
- Conger, J. & Lawler, E.E. III (2009). Sharing leadership on corporate boards: A critical requirement for teamwork at the top. Marshall working paper MOR 19-09, Marshall School of Business, University of Southern California.
- Cook, A., & Glass, C. (2015). Do minority leaders effect corporate practice? Analysing the effect of leadership composition on governance and product development. *Strategic Organization*, 13, 117-40.

- Cycyota, C.S. & Harrison, D.A. (2006). What not to expect when surveying executives: A meta-analysis of top manager response rates and techniques over time. *Organizational Research Methods*, 9, 133-60.
- Daft, R.L. & Weick, K.L. (1984). Towards a model of organizations as interpretation systems. *Academy of Management Review*, 9, 284-95.
- Dalton, D.R., Daily, C.M., Johnson, J.L. & Ellstrand, A.E. (1999). Number directors and financial performance: A meta-analysis. *Academy of Management Journal*, 42, 674-86.
- De andres, P., Azofra, V. & Lopez, F. (2005). Corporate boards in OECD countries: Size, composition, functioning, and effectiveness. *Corporate Governance: An International Review*, 13, 197-210.
- Eccles, R.G. & Youmans, T. (2015). Why boards must look beyond shareholders. Available at <http://sloanreview.mit.edu/article/why-boards-must-look-beyond-shareholders/> (Accessed 23 October, 2015).
- Eisenhardt, K.M., Kahwajy, J.L. & Bourgeois, L.J. III. (1997). How management teams can have a good fight. *Harvard Business Review*, 75, 77-85.
- Fama, E.F. & Jensen, M.C. (1983). Separation of ownership and control. *Journal of Law and Economics*, 26, 327-49.
- Finegold, D., Benson, G.S. & Hecht, D. (2007). Corporate boards and company performance: Review of research in light of recent reforms. *Corporate Governance: An International Review*, 15, 865-78.
- Finklestein, S. & Mooney, A. (2003). Not the usual suspects: How to use board process to make boards better. *Academy of Management Executive*, 17, 101-13.
- Forbes, D.P. & Milliken, F.J. (1999). Cognition and corporate governance: Understanding boards of directors as strategic decision-making groups. *Academy of Management Review*, 24, 489-505.
- FTSE Group. (2010). *FTSE4Good index series inclusion criteria*. London: FTSE Group.
- Galbreath, J. (2009). Addressing sustainability: A strategy development framework. *International Journal of Sustainable Strategic Management*, 1, 303-19.

- Galbreath, J. (2011). Are there gender-related influences on corporate sustainability? A study of women on boards of directors. *Journal of Management and Organization*, 17, 17-38.
- Golden, B.R. & Zajac, E.J. (2001). When will boards influence strategy? Inclination x power = strategic change. *Strategic Management Journal*, 22, 1087-1111.
- Goodstein, J., Gautam, K. & Boeker, W. (1994). The effects of board size and diversity on strategic change. *Strategic Management Journal*, 15, 241-50.
- Greitemeyer, T., Schulz-Hardt, S. & Frey, D. (2003). Preference consistency and sharedness of information as predictors of information evaluation and intended behaviour in group discussions. *Zeitschrift für Sozialpsychologie*, 34, 9-23.
- Hair, J.F., Anderson, R.E., Tatham, R.L. & Black, W.C. (1992). *Multivariate data analysis with readings* (3rd ed). New York, Macmillan.
- Hillman, A. & Keim, G. (2001). Shareholder value, stakeholder management, and social issues: What's the bottom line? *Strategic Management Journal*, 22, 125-39.
- Hull, C.E. & Rothenberg, S. (2008). Firm performance: The interactions of corporate social performance with innovation and industry differentiation. *Strategic Management Journal*, 29, 781-89.
- Jackson, S. (1992). Consequences of group composition for the interpersonal dynamics of strategic issue processing. In J. Dutton, A. Huff & P. Shrivastava, P. (Eds.), *Advances in strategic management*, 8, 345-82. Greenwich, CT, JAI Press.
- Jensen, M. (1993). The modern industrial revolution, exit, and failure of internal control systems. *Journal of Finance*, 48, 831-880.
- Kassins, G. & Vafeas, N. (2002). Corporate boards and outside stakeholders as determinants of environmental litigation. *Strategic Management Journal*, 23, 399-415.
- Kerr, N.L. & Tindale, R.S. (2004). Group performance and decision making. *Annual Review of Psychology*, 56, 623-55.
- Kiesler, S. & Sproull, L. (1982). Managerial response to changing environments: Perspectives on problem sensing from social cognition. *Administrative Science Quarterly*, 27, 548-70.

- Laughlin, P., Hatch, E., Silver, J. & Boh, L. (2006). Groups perform better than the best individuals on letters-to-numbers problems: Effect of group size. *Journal of Personality and Social Psychology*, 90, 644-51.
- Lawler, E.E. III & Mohrman, S.A. (2013). Sustainability: What should boards do? Centre for Effective Organizations Publication G13-2 (621), Marshall School of Business, University of Southern California.
- Leblanc, R.W. & Schwartz, M.S. (2007). The black box of board process: Gaining access to a difficult subject. *Corporate Governance: An International Review*, 15, 843-51.
- LeBreton, J.M. & Senter, J.L. (2008). Answers to 20 questions about interrater reliability and interrater agreement. *Organizational Research Methods*, 11, 815-52.
- Minichilli, A., Zattoni, A., Nielsen, S. & Huse, M. (2012). Board task performance: An exploration of micro- and macro-level determinants of board effectiveness. *Journal of Organizational Behaviour*, 33, 193-215.
- Minichilli, A., Zattoni, A. & Zona, F. (2009). Making boards effective: An empirical examination of board task performance. *British Journal of Management*, 20, 55-74.
- Nielsen, S. & Huse, M. (2010). The contribution of women on boards of directors: Going beyond the surface. *Corporate Governance: An International Review*, 18, 136-48.
- Ocasio, W. (1997). Towards an attention-based view of the firm. *Strategic Management Journal*, 18, 187-206.
- Paine LS. (2014). Sustainability in the boardroom. *Harvard Business Review*, 92, 86-94.
- Pelled, L.H., Eisenhardt, K.M. & Xin, K.R. (1999). Exploring the black box: An analysis of work group diversity, conflict, and performance. *Administrative Science Quarterly*, 44, 1-28.
- Pettigrew, A.M. (2013). The conduct of qualitative research in organizational settings. *Corporate Governance: an International Review*, 21, 123-27.
- Porter, M.E. & Kramer, M.R. (2006). Strategy and society: the link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84, 78-92.

- Post, C., Rahman, N. & Rubow, E. (2011). Green governance: Boards of directors' composition and environmental corporate social responsibility. *Business & Society*, 50, 189-223.
- Pugliese, A., Nicholson, G. & Bezemer, P.-J. (2015). An observational analysis of the impact of board dynamics and directors' participation on perceived board effectiveness. *British Journal of Management*, 26, 1-25.
- Rangan, K., Chase, L. & Karim, S. (2014). The truth about CSR. *Harvard Business Review*, 93, 40-49.
- Schäfer, H., Beer, J., Zenker, J. & Fernandes, P. (2006). Who is who in corporate social responsibility rating? A survey of internationally established rating systems that measure corporate social responsibility. Bertelsmann Foundation and the University of Stuttgart.
- Sheehy, B. (2014). Defining CSR: Problems and solutions. *Journal of Business Ethics*, in press.
- Shrivastava, P. & Hart, S. (1995). Creating sustainable corporations. *Business Strategy and the Environment*, 4, 154-65.
- Siebenhüner, B. & Arnold, M. (2007). Organizational learning to manage sustainable development. *Business Strategy and the Environment*, 16, 339-53.
- Sonnenfeld, J.A. (2002). What makes great boards great? *Harvard Business Review*, 80, 106-13.
- Steiner, I.D. (1972). *Group process and productivity*. New York, Academic Press.
- Tuggle, C.S., Schnatterly, K., & Johnson, R.A. (2010). Attention patterns in the boardroom: How board composition and processes effect discussion of entrepreneurial issues. *Academy of Management Journal*, 53, 550-571.
- van Ees, H., Huse, M. & Gabrielsson, J. (2009). Toward a behavioural theory of boards and corporate governance. *Corporate Governance: An International Review*, 17, 307-19.
- Waddock, S.A. & Graves, S.B. (1997). The corporate social performance-financial performance link. *Strategic Management Journal*, 18, 303-19.
- Wagner, S., Hespeneide, E. & Pavlovsky, K. (2009). The responsible and sustainable board. *Deloitte Review*, 4, 61-71.

- Wanous, J. & Youtz, M. (1986). Solution diversity and the quality of group decisions. *Academy of Management Journal*, 29, 149-59.
- Wetzels, M., Odekerken-Schröder, G. & Van Oppen, C. (2009). Using PLS path modelling for assessing hierarchical construct models: Guidelines and empirical illustration. *MIS Quarterly*, 177-95.
- Wheelan, S.A. (2009). Group size, group development, and group productivity. *Small Group Research*, 40, 247-62.
- Wood, D.J. (1991). Corporate social performance revisited. *Academy of Management Review*, 16, 691-718.
- Zahra, S.A. & Pearce, J.A. (1989). Boards of directors and corporate financial performance: A review and integrative model. *Journal of Management*, 15, 291-334.
- Zhang, P. (2010). Board information and strategic tasks performance. *Corporate Governance: An International Review*, 18, 473-87.
- Zona, F. & Zattoni, A. (2007). Beyond the black box of demography: Board processes and task effectiveness within Italian firms. *Corporate Governance: An International Review*, 15, 852-64.

TABLES

Table 1. Means, standard deviations, and correlations

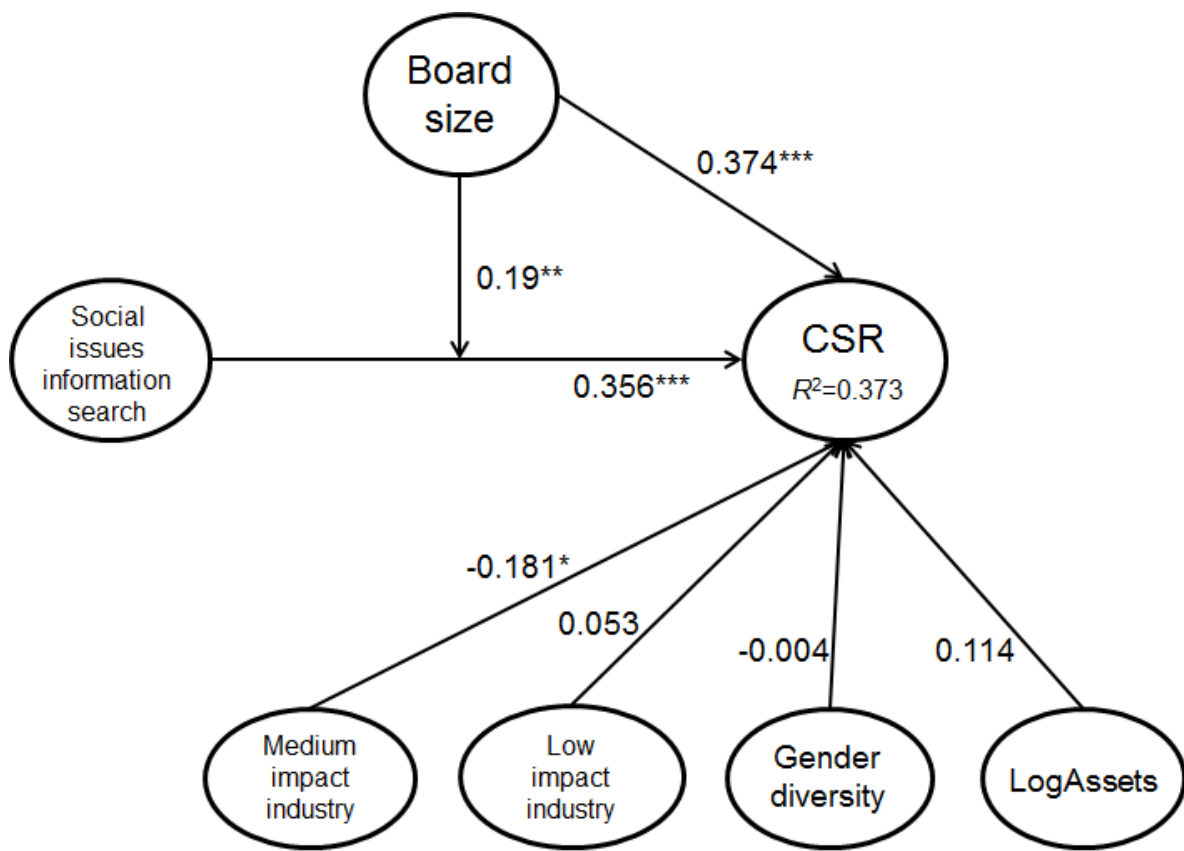
Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13
1. SocialCommunityMean11_13	2.65	0.78	1.00												
2. SocialEmployeeMean11_13	2.74	0.85	0.47**	1.00											
3. SocialSupplierMean11_13	1.43	0.49	0.43**	0.46**	1.00										
4. SIISQ1 [•]	2.83	0.84	0.27*	0.24*	0.09	1.00									
5. SIISQ2	2.94	0.90	0.30*	0.22	0.10	0.64**	1.00								
6. SIISQ3	2.76	0.76	0.32**	0.38**	0.14	0.60**	0.72**	1.00							
7. SIISQ4	2.24	0.86	0.10	0.15	-0.05	0.39**	0.40**	0.49**	1.00						
8. SIISQ5	2.75	0.82	0.25*	0.27*	0.06	0.66**	0.69**	0.67**	0.60**	1.00					
9. BoardSize_2011	7.35	1.83	0.31**	0.37**	0.23*	-0.07	-0.09	-0.06	-0.14	-0.01	1.00				
10. LgTotalAssets_2011	9.22	0.86	0.29*	0.34**	0.14	0.12	0.11	0.07	0.14	0.25*	0.60**	1.00			
11. MediumIndustry_Impact	0.11	0.32	-0.22	0.05	-0.01	-0.04	-0.22	-0.12	-0.05	-0.11	0.25*	0.37**	1.00		
12. LowIndustry_Impact	0.17	0.38	0.00	-0.04	-0.04	-0.09	-0.14	-0.11	0.05	-0.09	-0.19	0.01	-0.16	1.00	
13. GenderDiversityPerctg_2011	0.13	0.13	0.29*	-0.01	0.14	0.21	0.21	0.16	0.08	0.16	0.20	0.52**	0.26*	0.03	1.00

[•]SIIS = Social issues information search

* $p = 0.05$; ** $p = 0.01$

FIGURES

Figure 1. Structural model



Standardized path coefficients where * $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$