

Responding to sustainability: A model exploring the impacts of boards of directors and organisational strategic flexibility

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ABSTRACT: As the strategic apex of decision making, boards of directors have ultimate responsibility in ensuring that firms address economic, environmental and social sustainability. We contend that board information-processing activities act as the mediational pathway by which board composition affects sustainability. Further, because of the complexity of the sustainability paradigm, strategic flexibility is posited to moderate relationships between information-processing activities and sustainable outcomes. The model proposed in this paper offers original insight into the drivers of sustainability in organisations and thus, we conclude the discussion with implications for both research and practice.

Keywords: boards of directors, board composition, corporate governance, information processing, strategic flexibility, sustainability

Sustainability is one of the most important management paradigms facing today's strategic decision makers (Bansal 2005; Konrad, Steurer, Langer & Martinuzzi 2006; Steurer, Langer, Konrad & Martinuzzi 2005). Pundits suggest that the ability to integrate the sustainability agenda into a firm's business mission and its relationships with stakeholders will be a requirement for success in the 21st century (e.g., Bacon 2007; Stranislav 2007). Perhaps most controversially, Bansal (2001: 48) posits that firms who do not respond to the sustainability challenge will "almost certainly face extinction". In light of these bold assertions, it is clear that understanding how firms respond to sustainability is an important area of enquiry.

Our goal is to consider how organisational processes, specifically corporate governance and strategy processes, impact on sustainability. Waves of corporate scandals over the past 30 years have placed considerable emphasis and pressure on corporate boards to take more responsibility for the corporations they govern (Nadler, Behan, Nadler & Lorsch 2006). Yet despite more than two decades of effort the general conclusion is that we are yet to find systemic, general relationships between boards of directors and one the most important firm outcomes; namely, economic performance (Dalton, Daily, Ellstrand & Johnson 1998; Daily, Dalton & Cannella 2003).

Beyond the principal-agent aspect of corporate governance and the need to align management and owners' interests so as to minimize opportunism and maximize profits, demands and pressures on

corporate boards have extended responsibilities for economic returns to include those related to environmental and social dimensions as well (Cadbury 1999; Huse 2005; Jamali, Safieddine & Rabbath 2008). Research has explored boards of directors and firms' social responsibilities. For example, evidence suggests that boards consisting of a higher percentage of outside (independent) directors appear to demonstrate more of a positive response to particular environmental and social issues than those boards comprised of a majority of inside (non-independent) directors (Ibrahim & Angelidis 1995; Johnson & Greening 1999). However, as with the research into firm economic performance, results are inconclusive and often contradictory as to the influence of board of director composition on broader sustainability dimensions (Coffey & Wang 1998; Wang & Coffey 1992).

One reason posited for these inconclusive and contradictory findings is a lack of focus on intervening variables involved in the decision processes of the board (e.g., Huse 2005). In particular, a directors' cognitive (Forbes & Milliken 1999; Pettigrew 1992) and social influence (Westphal 1999; Westphal & Zajac 1997) processes are thought to inhibit or enhance boards of directors impact on organisational outcomes. Board cognition processes might be particularly important factors impacting on a firm's ability to demonstrate sustainability due to its inherent complexity. However, we also argue that addressing sustainability requires seeing a business as a part of a much larger system involving a wide variety of stakeholders – more like the complex interactions in a natural ecosystem than the traditional mechanistic view of a corporation. Success in this complex and dynamic context requires a firm-wide perspective that incorporates environmental and social dimensions as well as economics, and relies on a flexible, adaptive and inclusive approach.

We propose a model that links boards of directors, information processing and strategic flexibility in order to bridge some of the gaps that currently characterize much theorizing about corporate governance, strategy and sustainability. The analysis employs the traditional measure of board composition; however, we argue that links between board composition and sustainability depends on the cognitive aspects of information processing in the boardroom. How boards conduct information searches,

engage in cognitive conflict and information assimilation are, we argue, critical to sustainability outcomes. We also draw upon resource-based and strategy perspectives to suggest that the expanded corporate objective that comprises sustainability requires substantial flexibility. Thus, we propose that strategic flexibility moderates the link between boards' information-processing activities and sustainable outcomes.

BACKGROUND ON SUSTAINABILITY

Firms have a responsibility to ensure economic viability in perpetuity (Dyllick & Hockerts 2002). When firms successfully create and capture value through economic activities, they benefit through returns, consumers benefit through better products and services supplied at reduced cost, shareholders benefit through dividends and equity, employees benefit through salaries and society benefits through higher living standards (Holliday, Schmidheiny & Watts 2002). However, the benefits of economic activity and the process of value creation are not easily captured. Market forces, competition, regulatory frameworks and scarce resources place significant pressure on firms to survive and contribute to societal welfare in the form of economic sustainability. Complications further arise in the process of value creation by firms, as natural resource depletion, environmental degradation, disruption of communities, worker displacement and problems with health and safety can be negative by-products. While some of these complications are dealt with through the pricing/allocation mechanism of the market (e.g., carbon emissions) and others through regulation (e.g., worker health and safety), many are unpriced externalities or 'exploitations of the commons' (e.g., loss of natural habitat, disruption of communities, worker displacement) (Boehlje 1993; Tirole 2001).

Given the many unpriced externalities in firms' value-creating activities (Tirole 2001), truly sustainable organisations need to move beyond pure market mechanisms to voluntarily address environmental quality and social responsiveness as these two aspects are tied intrinsically to ongoing, sustainable economic activity (Bansal 2001 & 2005; Schmidheiny 1992; Steurer et al 2005). That is, in the sustainability paradigm, economic sustainability is achieved not by indiscriminately externalizing

costs onto other legitimate stakeholders, but rather by balancing economic activity with maintaining 'natural'/environmental capital while delivering social improvements (Konrad et al., 2006). Addressing sustainability thus raises a unique set of challenges for firms in that bottom line (i.e., economic) results are not the sole focus of governance and business policy, nor are shareholders the only actors tied to the firm that require managerial attention (Table 1).

THEORY AND PROPOSITIONS

Boards of directors are elite workgroups mainly faced with complex tasks related to information processing and decision making. Therefore, it is logical to consider the cognitive aspects of board decision-making as important (Forbes & Milliken 1999). We are particularly interested in the informational processing (Daft & Weick 1984) abilities of the board. Informational processing is thought to be critical to organisational success (Daft & Weick 1984), a thesis with empirical support (Thomas, Clark & Gioia 1993). We contend that successful boards may acquire a high degree of flexibility in acquiring, assimilating, transforming and processing information. This ability may lead to better management of information, thus reducing information costs and achieving favourable organisational outcomes. From the perspective of sustainability as an organisational outcome, cognitive processes of boards are posited to be especially important. In the case of meeting the complex challenges of the focal subject, three key information-processing activities are studied: 1) information search; 2) cognitive conflict; and 3) information assimilation (Figure 1).

Information Search

Boards of directors have a legal (e.g., du Plessis, McConvill & Bagaric 2005) and normative (Charan, 2005) function to preserve and build the enterprise, including establishing a vision and mission, evaluation and control of strategic proposals, appointing CEOs, setting strategies and developing policies (Hendry & Kiel 2004; Kiel & Nicholson 2005; Nicholson & Kiel 2004). As such, the board wields substantial power and responsibility in overseeing the achievements of firms. To successfully engage in and influence the affairs of firms, board members need to be active information searchers (Eisenhardt, Kahwajy & Bourgeois 1997; Sonnenfeld 2002).

Board members' information search refers to data gathering before meetings. Data gathering includes the willingness and ability to participate in board meetings with a thorough knowledge of the topics to be discussed in order to actively contribute to information processing (Sonnenfeld 2002). Information search is related to the degree to which board members take initiatives to scan and collect further information, particularly beyond that provided by management (Forbes & Milliken 1999). Acquiring new information is essential so that tasks are performed under a reduced level of uncertainty (Daft & Lengel 1986). Preparation through information search is arguably important in developing a firm that can demonstrate sustainability.

Since sustainability involves balancing multiple stakeholders, we contend that it involves more complexity and greater information search demands than a shareholder-focused model. Economic, environmental and social sustainability requires consideration of stakeholders including investors and shareholders, customers, employees, governments, suppliers, the natural environment and communities (Konrad et al 2006; Steurer et al 2005). When multiple stakeholders require attention, the expectation is that information-processing demands increase. Further, the ability to identify the multiple issues related to sustainability requires extensive research, including information search, issue prioritization and complex decisions on strategic actions (Galbreath 2009a). Therefore, boards that are apprised of current issues facing stakeholders by scanning the environment and collecting information beyond that supplied by management would be in a better position to address sustainability.

Evidence suggests that workgroups that engage in information maximising behaviours are more adept at responding to aspects of sustainability. Specifically, groups that search out and collect information until no additional value is obtained from that new information are adept at responding to aspects of sustainability such as ensuring corporate activities address care for the natural environment (Sweet, Roome & Sweet 2003; see also Eisenhardt et al 1997). As the company's most highly influential workgroup we contend that the complexity and multiple issues inherent in the sustainability paradigm,

board members need to actively seek out and leverage a breadth of information in meetings for effective decision making.

Cognitive Conflict

Brodbeck and colleagues (2007) argue that biases occur when a work group is dominated by shared information only. In these situations, the unique information possessed by individual members is not recognized to produce new insights and knowledge. Shared information is more often assessed first before unique information during discussion, it is more often repeated and is more favourably judged in light of social validation and importance. These multiple bias mechanisms (sampling, repetition bias and evaluation biases), with each thought to feed into the other (Brodbeck, Kerschreiter, Mojzisch & Schulz-Hardt 2007), and are a particular cause for concern in boards of directors who often possess quite disparate backgrounds and meet infrequently (Kiel & Nicholson 2004).

Cognitive conflict in board meetings may reduce these information biases. Cognitive conflict can be defined as “disagreements about the content of the tasks being performed, including differences in viewpoints, ideas and opinions” (Jehn 1995: 258). Since effective information processing must bridge the gap between information activities of isolated individuals and the broader organisation (Daft & Lengel 1986), board dynamics that encourage discussion of gaps are important. Thus, effective processing of information relies on the board’s ability to engage in conflict. For instance, Eisenhardt et al. (1997) suggest that boards that challenge one another in board meetings have greater strategic insight than those that do not. Specifically, these boards possess expanded viewpoints and insights into strategic issues that the company faces and so are able to make more effective decisions.

We contend that cognitive conflict is even more important for boards engaging with sustainability. Boards who do not engage in constructive debate are more likely to discuss a strategic option facing the firm based solely on a single dimension such as the economic merits of the option. Quite simply, they lack Eisenhardt et al’s (1997) multiple viewpoints and insights. In contrast, where conflict is present, the expectation is that boards would engage in debate from multiple stakeholder perspectives.

Consider a major strategic decision facing a company that involves harvesting forests for new product development. While there may be clear economic gain for shareholders the decision potentially forces externalities on the natural environment; such externalities would have impacts on actors well beyond shareholders. Boards demonstrating cognitive conflict would, we contend, be expected to debate such a direction beyond impacts on shareholders, and so be more actively engaged in sustainability discussions.

Information Assimilation

While information search and cognitive conflict can have positive affects on organisation outcomes (Charan 2005; Huse 2007; Huse, Minichilli & Schøning 2005; Leblanc & Gillies 2005; Sweet et al 2003), they are not always sufficient to maximise information processing (e.g., van Knippenberg, De Dreu & Homan 2004). For example, boards could conceivably opt for a quick compromise to avoid conflicts or rely mainly on shared information. Therefore, means or mechanisms to ensure that rich information processing is achieved are important. The absorptive capacity perspective (Cohen & Levinthal 1990; Zahra & George 2002) suggests that effective information processing requires that workgroups, such as boards of directors, to interpret, comprehend and effectively learn from individually-derived perspectives. This allows the group to mobilize a diversity of ideas, opinions and viewpoints (cf. Williams & O'Reilly 1998). *Information assimilation*, therefore, is posited to enhance the benefits of information search and cognitive conflict as well as directly impact on corporate outcomes such as sustainability.

As mentioned, while information search and debate can give rise to such diversity, boards could avoid conflict or unique information in order to come to a quick – and potentially misinformed or biased – decision. To negate such an outcome, there are several ways boards can ensure information assimilation. First, feedback can be used so that each individual perspective or viewpoint that is expressed is fully clarified and understood by the group. Feedback enhances information elaboration, which aids in the absorptive capacity of the group, encouraging common insight or understanding of individual diversity (Homan, van Knippenberg, Van Kleef & De Dreu 2007; van Knippenberg et al 2004). Second, deep-level assessment of information is necessary to maximize decision making (Homan et al 2007). One

way that boards can engage in deep-level assessment of information is to look at issues through a wide lens, consider multiple approaches and examine multiple courses of action.

Based on the work of scholars such as Miller and colleagues (1998), board members may propose different approaches to a strategic issue, for example a pure economic-based approach versus an approach that also considers environmental impacts, but never effectively compare those approaches or weigh them against each other. Engaging in information assimilation ensures that the pros and cons of alternative approaches are thoroughly examined. Thus, lastly, information assimilation ensures that the implications of a given approach are fully integrated into decision making (Homan et al 2007; van Knippenberg et al 2004). Here, information sharing, member viewpoints and perspectives and feedback are combined to assess the implications of a decision and its impact on organisational outcomes such as sustainability. Therefore, the ability of boards to engage in deep-level and comprehensive assessment of information as well as of viewpoints and opinions of individual directors is posited to further enhance capacity for effective information processing related to sustainability.

Sustainability is a multi-faceted challenge facing business firms today. As the strategic apex of decision makers, boards of directors are expected to consider and address sustainability. To ensure that sustainability is addressed effectively, information-processing activities are posited to be particularly important drivers. The following propositions, therefore, summarize our predictions regarding the influence of board information-processing activities on sustainability.

Proposition 1: Information search by board members is positively associated with sustainability.

Proposition 2: Cognitive conflict in board meetings is positively associated with sustainability.

Proposition 3: Information assimilation in board meetings is positively associated with sustainability.

Proposition 4: Information assimilation increases the positive relationships between information search, cognitive conflict and sustainability.

The Mediating Role of Board Information-Processing Activities

After decades of empirical research, consistent links between board composition and organisational outcomes, namely firm financial performance, remain elusive (Finegold, Benson & Hecht 2007). However, in the context of this paper, there is support for a positive link between board composition and sustainability. For example, Ibrahim and Angelidis (1995) identified that outside (independent) board members more readily address social responsibilities than inside, or non-independent, board members. Findings also suggest that boards with higher proportions of gender diversity address sustainability more effectively than those with less gender diversity (Galbreath 2009b). Lastly, Galbreath (2009c) found that firms who have an independent chairperson address climate change (an aspect of environmental sustainability) more effectively than boards with a CEO who also serves as chairperson. Thus, factoring in the evidence, a mediated role of board information-processing activities is posited on the relationship between board composition and sustainability.

Proposition 5: A positive relationship between board of director composition (comprising diversity and independence) and sustainability exists through the mediational effects of board information processing (comprising information search, cognitive conflict and information assimilation).

The Moderating Role of Strategic Flexibility in the Mediated Relationship

We have argued that boards of directors are critical to influencing outcomes such as sustainability. However, recognition is given that boards of directors generally address “big picture” issues rather than day-to-day operational issues and that while they participate in all phases of a firm’s strategic development process (Johnson, Daily & Ellstrand 1996), they tend to have limited involvement in strategy implementation (Hillman, Shropshire & Cannella 2007). Thus, we also recognise the importance of the broader organisation and the resources at its disposal to meet sustainable outcomes. Specifically, addressing a corporate objective that integrates three central dimensions (economic, environmental, social) requires that the organisation move flexibly, adapting to changing stakeholder conditions and competitive dynamics. *Strategic flexibility* is a well developed concept from the strategy literature that encompasses a firm’s ability to advantageously alter strategies in response to either internal or external

changes in the business and competitive environment (Sanchez, 1993 & 1997). We argue that sustainability is one such influence on change and requires strategic flexibility to be addressed effectively.

Evidence suggests that demands and pressures to adapt to the sustainability paradigm are imposing substantial changes on business firms (AMA 2007; Kolk 2008). However, according to economic and resource-based theories (e.g., Barney 1991; Penrose 1959; Richardson 1972; Teece 1980), firms operate with a scarce resource base. Thus, a firm's ability to effectively adapt to changing environments is predicated on the flexibility of its resource base. While the narrow perspective of strategic flexibility largely focuses on the manufacturing resource base and product modularity (Sanchez 1995; Worren, Moore & Cardona 2002), a broader perspective looks at flexibility in a more general sense (e.g., Aaker & Mascarenhas 1984; Hitt, Keats & DeMarie 1998; Nadkarni & Narayanan 2007).

Different types of resources possess unique characteristics that can influence the flexibility with which they are deployed. One characteristic of resource flexibility or 'slack' that is particularly important in this regard is the degree of discretion associated with the resource. Resource discretion refers to the ability to convert slack to other uses should the need or opportunity arise (Sharfman, Wolf, Chase & Tansik 1988). The more specific a resource is to a particular use, the less discretion management has in deploying excess amounts to alternative uses (Montgomery & Wernerfelt, 1988; Wernerfelt & Montgomery, 1988). Thus, resource slack is expected to create strategic options, which permits a buffer or cushion of potential resources that may be rapidly deployed as needed (Bourgeois, 1981). Resource slack gives flexibility to firms in managing responses to competitive pressures and changing environments (Sanchez, 1993 & 1997), such as those imposed by the sustainability paradigm. This permits the firm to experiment with innovation, to execute a greater number of competitive moves, to deploy resources to alternative uses and to improve the speed and degree to which it can adapt to changing environments (Cyert & March, 1963; Cheng & Kesner, 1997; Sanchez, 1993 & 1997). Alternatively, low levels of slack inhibit a firm's ability to mobilize necessary resources, constrain

strategic options and limit competitive actions and strategic change and aggressiveness (Fombrun & Ginsberg 1990; Young, Smith & Grimm 1996).

In the case of the focal subject, we posit that firms demonstrate the ability to adapt and adjust to sustainability requirements through strategic flexibility. For example, a firm that desires to bring a new product to market in the sustainability scenario needs to consider not only economic impact, but impact on the natural environment and society-at-large. Here, product life-cycle assessments would be required to ensure that manufacturing processes do not harm the natural environment and changes made where necessary, in addition to general research and development activity that would be required. Product safety would also need to be addressed to ensure that members of the public are not at risk in any way. Firms might also consider practices and processes of their input providers, ensuring that suppliers meet strict environmental and human resource policy standards, and investing resources to help them meet standards where necessary. Further, firms might keep manufacturing local – even if higher wages reduce profits to a level than what might otherwise be expected – to maintain job security and continuity in the community. Thus, we infer flexibility in areas such as finance and human and capital assets, among others, would be necessary to strategically support a broad array of stakeholder initiatives to deliver sustainability. Hence,

Proposition 6: Strategic flexibility at least partially moderates the mediated relationship among board information-processing activities and sustainability.

DISCUSSION AND CONCLUSION

The tendency of management scholars and practitioners to ignore the cognitive aspects of boards of directors and organisational constructs such as strategic flexibility have, we contend, led to an empirical base of research that has failed to explain, on a consistent basis, relationships between board composition and outcomes such as sustainability. Rather than a direct link, board composition is indirectly linked to sustainability through the mediational pathway of information-processing activities. Further, strategic flexibility is a vital link facilitating a firm's ability to shift and change strategies and resources so as to address multiple stakeholder demands across economic, environmental and social dimensions. Following these arguments, there are implications for research.

Implications

The model proposed in this paper attempts to untangle driving forces behind a firm's ability to demonstrate sustainability. In terms of research, at least three implications are identified.

First, following the resource-based view of the firm, boards of directors represent human capital (Barney 1991). However, possession of human capital does not automatically generate or guarantee successful organisational outcomes (Eisenhardt & Martin 2000; Teece, Pisano & Shuen 1997). Under the dynamic capability approach, process variables such as routines systematically leverage, integrate and release human capital for firm advantage (Eisenhardt & Martin 2000; Teece et al 1997). Similarly, the absorptive capacity perspective suggests that individuals are limited in their ability to interpret the environment around them and therefore effective cognitive processes are necessary to maximize understanding (Zahra & George 2002). An implication of the model proposed in this paper suggests that while important, boards of directors as human capital represent a latent dimension related to the knowledge and skills (capital) they possess, while cognitive processes such as information-processing activities represent the dynamic dimension that effectively releases board capital. Future research, therefore, should specifically examine static and dynamic perspectives of boards of directors to determine relationships with a range of outcomes.

Second, according to Daft and Weick (1984), a firm's main task is to process information. If boards of directors represent the highest level of decision making in an organisation, then logic follows that their information-processing effectiveness is critical to organisational functioning and success. Specifically, in the sustainability paradigm, not only do three core dimensions represent a firm's overall objective, but a multitude of stakeholder considerations must be weighed and evaluated to determine how best to meet such an objective. Thus, sustainability expands the corporate objective and the information-processing demands of boards. Following, the model presented here posits that information search, cognitive conflict and information assimilation are critical cognitive processes boards need to engage in

to effectively address sustainability. Future studies could operationalise these constructs and empirically study their mediating effects on the board composition-sustainability relationship.

Lastly, firms are under relentless pressure to adapt to business conditions that are unstable and rapidly changing. As the world is more interconnected and trade transnational, competition from non-traditional or unknown market players is a continuous threat (Hitt & He 2008). Consumer product choice is diversified through the expansive reach of the Internet and global competitors, placing strain on firms to regularly rethink breadth and type of product offerings, while developing faster response and implementation times (Johnson, Bellman & Lohse 2003; Karin 2004; Murphy, Celuch & Callaway 2007; Zang, 2005). Further, economic conditions seem to change from boom to bust in relatively short time spans, placing strain on firms to survive, let alone thrive (Bryan & Farrell 2008; Grewai & Tansuhaj 2001; Rumelt 2009). Add to this the fact that stakeholders increasingly look to the business sector to engage in a balanced corporate objective that includes environmental and social, as well as economic sustainability, then firms face considerably complex challenges. This paper suggests that strategic flexibility is a key mechanism for adapting to such challenges but expands the dynamic under which the construct might be studied. Thus, this paper stimulates future research opportunities for broadening the study of strategic flexibility and its impact on organisational outcomes.

Conclusion

The purpose of this article was to set out a framework for understanding how firms respond to the growing challenges posed by balancing the economic, environmental and societal interests touched by the modern firm. While there are many avenues to pursue a sustainability agenda, we contend that board processes and flexible organisational response are important components of any successful sustainability program. By setting out how boards engage in effective information processing and through assessing the need to exhibit flexibility in response to changing environments, we hope that this paper opens up exciting opportunities for the study of boards of directors and strategy mechanisms in responding to sustainability.

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TABLES

Dimension of sustainability	Representative stakeholders	Core aspect	Examples
Economic sustainability	Shareholders, investors	Creating value in a way that enables a company to remain economically viable for an indefinite time	Sufficient cash-flow to ensure liquidity; persistent returns to capital providers; an asset base that the market predicts has future value-creation potential
Environmental sustainability	The natural environment/ecosystems, customers, communities, suppliers, nations	Limiting impact of firm activities on the natural environment while minimising the use of natural capital	Various emission reduction actions in company and supplier facilities and processes; various resource-saving actions in company and supplier facilities and processes; risk assessment of impacts on natural environment; reduced environmental impact of products/services
Social sustainability	Employees, customers, communities, nations	Continuously contributing to the social well-being of society and individuals	Wage policy, gender mainstreaming, job evaluation systems, fair trade, work-life balance, human rights, employee training, health and safety precautions, product safety, sponsorships and donations, volunteer work

Table 1: Aspects of Sustainability

FIGURES

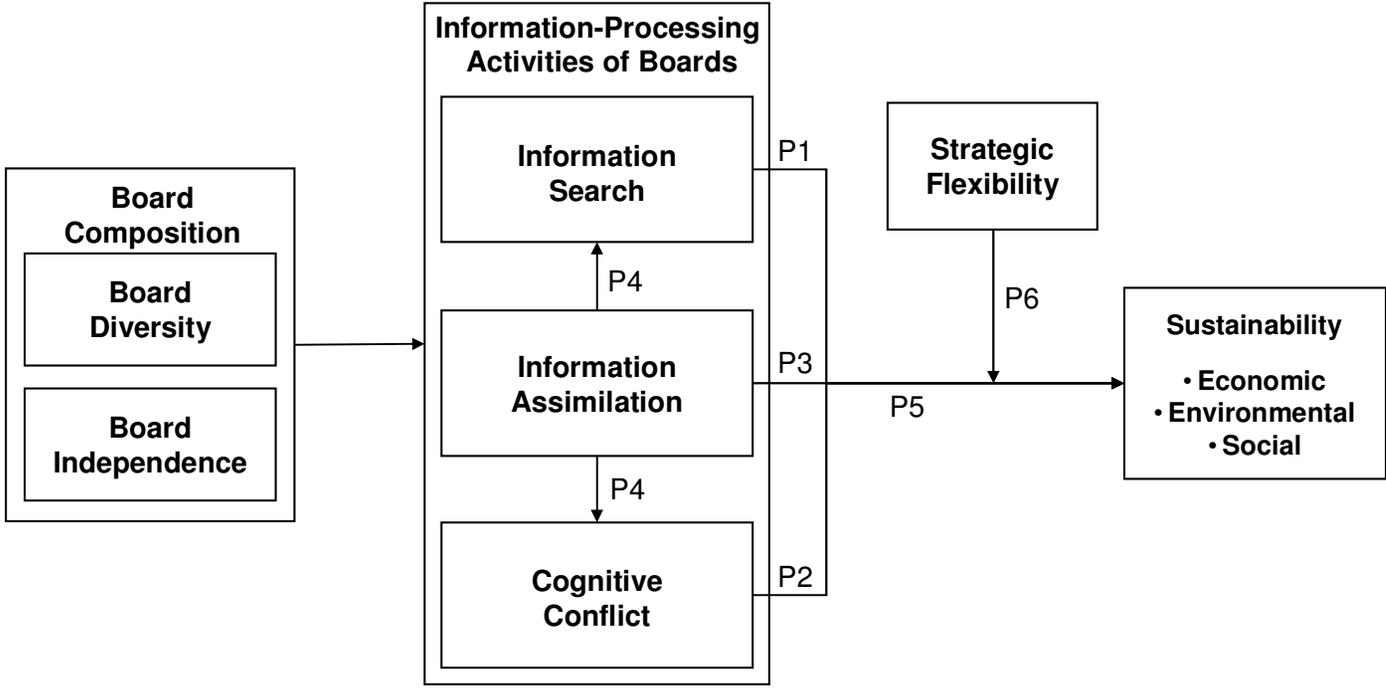


Figure 1: Conceptual Model and Propositions