Influences on the Organizational Implementation of Sustainability:

An Integrative Model

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ABSTRACT

Multiple forces in the 21st century have propelled businesses into confronting conditions that challenge their own and the world's sustainability. This paper illuminates the factors influencing companies to implement sustainability practices. It validates an integrative model of the effects that external influences, foundational organization enablers, decision drivers, and inhibitors had on both sustainability implementation and organizational performance. Using data from a worldwide survey of 1,514 managers, we showed how external forces for sustainability and support from organizational leaders to create an enabling foundation are likely to translate into decision priorities, implementation of sustainability practices, and perceived performance improvement. We also showed the considerable power of internal inhibiting forces and outlined how they may be overcome. The results point to the steps leaders can take to achieve their environmental, social, and financial goals, as well as to further streams of inquiry.

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In the last decade, the issue of sustainability has become a critical issue for the world and for business (Anderson, 1998; Hawken, 2007; Prahalad & Hammond, 2002; The UN Global Compact, 2004). Global issues relating to water, food, energy, health, corruption, human rights, poverty, climate, and population threaten societal well being and thus the pillars of a healthy marketplace. While various definitions exist for "corporate sustainability" (sometimes also referred to as "corporate social responsibility" or "environmental, social, and governance" concerns), it may be considered as a "company's ability to achieve its business goals and increase long-term shareholder value by integrating economic, environmental and social opportunities into its business strategies" (Symposium on Sustainability, 2001, p.1). Mirchandani and Ikerd (2008) refer to a new paradigm of "global business citizenship" in which future sustainable organizations will work in cooperative structures to achieve ecological, social, and economic integrity.

The extent to which organizations should proactively address societal sustainability issues continues to be debated in the management literature. In a special issue of the *Academy of Management Perspectives* linked to its "Green Management Matters" 2009 conference theme, one article essentially argued that firms should address the world's social and environmental challenges because it is the right thing to do (Marcus & Fremuth, 2009), while another argued they should do so only when it makes good strategic sense and pays off (Siegel, 2009). What is clear is that companies increasingly are being urged to shape the content of their corporate strategies to achieve greater mutuality between their own and society's strategic needs (Porter & Kramer, 2006), and many are searching for ways to achieve success on a broader and more balanced array of outcomes such as those delineated by the "triple bottom line" of people, planet, and profits

(Elkington, 1997; Savitz & Weber, 2006). A large practitioner-oriented literature documents the wide variety of sustainability practices being implemented by organizations, and offers compelling logical arguments and anecdotal evidence regarding the ways that such practices can strengthen competitive advantage (see, for example, Blackburn, 2007; Esty & Winston, 2006; Willard, 2002). The findings from a growing set of financial and econometric studies examining the relationship between sustainability investments and firm performance shows that such investments often improve and almost never detract from performance (Goldman and Sachs, 2007; Siegel, 2009).

Much less well developed in the literature are the ways that organization can best execute sustainability strategies – only a limited amount of prior empirical academic research illuminates what specific factors enable or inhibit the implementation of sustainability practices. This paper integrates complementary theoretical strands to offer a meso-theoretical model of the linkages among sustainability drivers, organizational enabling factors, inhibitors, actual practices and performance. It then tests this model using data from a worldwide survey of 1,514 managers.

BACKGROUND

An array of environmental, social, and economic factors challenge institutions, leaders and corporations with the reality that the world's natural resources and people are in increasing jeopardy. The climate is changing, very likely accelerated by human activity, with potentially devastating consequences on habitation and agricultural patterns, and species diversity (The United Nations Intergovernmental Panel on Climate Change, 2007). Scientists have measured vastly increased carbon dioxide levels (Hotz, 2007), shrinkage of the Polar ice cap, and degradation of topsoil and widespread desertification (Symes, 2006). Clean drinking water is increasingly becoming scarce. One estimate calculates that the earth's resources are being

depleted at a rate that is 39% faster than what the planet can regenerate (Redefining Progress, 2008).

Social issues are just as troubling. More than three billion people on earth live on less than $2 a day, where access to modern energy is severely limited and education is trivial or nonexistent (Symes, 2006). The greatest future population growth will arise in the poorest areas of the world (Sachs, 2005). Even the United States confronts persistent levels of poverty and incarceration.

Sustainability Practices

Today, more companies see the need to move beyond traditional concerns of running a business focused only on immediate profit and have begun to deal with factors in the greater world vital to their medium- to long-term success. Reflecting the holistic and multi-dimensional nature of sustainability, a rapidly growing literature documents a wide range of specific sustainability practices being implemented by organizations (see, for example, Blackburn, 2007; Esty & Winston, 2006; Savitz & Weber, 2006; Willard, 2002, 2009). Many practices relate to improving eco-efficiency and reducing environmental "footprint" through energy conservation, renewable energy sources, local sourcing, and reduction of emissions, pollutants and waste. Other practices relate to creating more sustainable and effective workplaces by focusing on worker health and safety, employee engagement, work-life balance, civic volunteerism, and ethical governance, while slowly infusing sustainability criteria into talent and performance management systems. Many practices focus on sustainability-related product innovation, market development, and branding. Still others emphasize stakeholder engagement, including suppliers, investors, communities, regulators, and a wide range of activist groups.

Sustainability Decision Drivers

There has been considerable research on the rationale that influences firms to invest in developing sustainability capabilities. Resource allocation decisions to support specific actions derive from a process of setting strategic priorities that shape an organization's action agenda (Weick, 1995; Porter, 1998). Thus, the extent to which an organization implements specific sustainability practices will be strongly driven by the importance it places on various sustainability issues perceived as vital to its identity and success.

We can analyze the importance of these issues through the lenses of several well established theoretical perspectives. From a resource-based view of the firm (e.g., Barney, 1991), sustainability may constitute a valuable, rare (innovative), and hard to imitate resource or capability that leads to competitive advantage (Hart, 1995; McWilliams & Siegel, 2001). From the perspective of industry and competitive dynamics (e.g., Porter, 1998), benefits may accrue from advantageous effects of sustainability on market structure –including degree of industry consolidation, entry barriers, rivalry dynamics, and first-mover potential (Porter &. Van der Linde, 1995). From a stakeholder view of the firm (e.g., Freeman, 1984), the potential for sustainability benefits can be understood in terms of addressing demands from customers, investors, suppliers, governmental and non-governmental organizations, and activist groups (Clarkson, 1995). Institutional theory (e.g., Scott, 1995) draws attention to the potential legitimation benefits of conformance to sustainability-oriented normative social rules and belief systems prevailing in the environment (Bansal & Clelland, 2004; Doh, Howton, Howton & Siegel, 2009; Jennings & Zanderbergen, 1995; Marquis, Glynn, & Davis, 2007).

Several of these theoretical perspectives on competitive opportunities, stakeholder pressures, and ethical values informed recent studies specific to sustainability strategy. Basu & Palazzo (2008) theorized that sustainability decision-making is likely to be influenced by three

types of drivers: *performance drivers,* using social or environmental investments to boost performance; *stakeholder drivers,* meeting specific demands of external stakeholders and institutions; and *motivation drivers,* either extrinsic reasons such as to pre-empt legal sanctions or enhance reputation or intrinsic ones grounded in virtue ethics. This closely mirrors the empirical findings of Bansal and Roth (2000), who studied the responses of 53 firms to environmental needs and induced three drivers: *competitiveness*, *legitimation* (to burnish their credibility or avoid penalties), and *social responsibility*.

In terms of *competitive advantage*, a good sustainability strategy must first be a good business strategy that fits an organization's unique value-chain opportunities and threats (Porter & Kramer, 2006; Siegel, 2009). What is distinctive about a sustainability strategy is that strategic thinking and action become more *holistic, balanced and complex* (Mirchindani & Ikerd, 2008). Planning takes on a more balanced short and long term view (Slawinsky & Bansal, 2009). A more diverse array of external stakeholders becomes deeply engaged so that the organization can better discover opportunities, anticipate challenges, and create mutuality (Hart & Sharma, 2004; Mirchindani & Ikerd, 2008). For instance, a large retailer such as Wal-Mart has to consider not only the design and cost of its imported merchandise but also the labor practices of its suppliers, the carbon footprint of its products, the benefit of having its brand associated with "green" values, and the potential for pubic relations embarrassments due to government actions or civic watchdogs (Laszlo, Sherman, & Whelan, 2005; Sachs, 2007; Scott, 2005

Stakeholder and institutional *legitimation* also is an important motivation for corporate sustainability, both on the upside of reputation as well as the downside of unprecedented risk. Many organizations need to beware of violating new regulations, falling into public relations embarrassments or becoming a target for activist groups. For example, Monsanto saw its multi-

billion dollar investment in developing genetically engineered foods derailed by an unexpected, highly-effective campaign among European consumer groups and farmers in developing countries that resulted in prohibitive regulations by European Union institutions -- an outcome that Hart & Sharma (2004) suggest might have been avoided if Monsanto had built bridges to these seemingly "fringe" stakeholders.

The third driver of sustainability business decisions, *social responsibility* and virtue ethics, appears to operate more in conjunction with the other two drivers rather than as the sole basis for action. Very few companies in Bansal and Roth's (2000) study reported social responsibility as the only motivation. More often it was cited in connection with competitiveness or legitimation. For example, Whole Foods developing networks of local growers to supply produce to its stores aids the local economies of its own customers in a socially responsible way. Meanwhile the company publicizes its programs while reducing the cost of inbound shipping and greenhouse gas emissions from long-distance transport, potentially enhancing its legitimacy and bolstering its competitive advantage. This integration of social good with enlightened self-interest is reflected in Goldman Sachs directing investors to consider both social/environmental indicators as well as financial ones, and in academicians urging companies to focus on those societal issues instrumental to their own value chains (Porter & Kramer, 2006; Ambec & Lanoie, 2008)

Sustainability and Performance

A large body of evidence has accumulated from survey and case study research documenting the benefits that organizations are achieving from implementing sustainability practices (Blackburn, 2007; Esty & Winston, 2006; Willard, 2002). These can be summarized as improvements in reputation, productivity, talent acquisition, employee retention and engagement, cost effectiveness, risk avoidance/mitigation, innovation and market expansion, and access to

capital. A growing set of financial and econometric studies have examined the relationship between sustainability investments and firm performance. The findings from this literature can best be described as equivocal. On the one hand, firms specializing in sustainability metrics such as Innovest Strategic Advisors, Smith Barney, and Dow Jones (Sustainability Index) all have presented evidence that companies regarded highly for sustainability management outperform other firms and that an "eco-efficiency premium" is more often being built into the stock price of deserving companies (Cohen, 2006). Such performance has prompted "socially responsible investment" (SRI) mutual funds to attract several billions of dollars under management. Several meta-analytic reviews confirmed the connection between investment choices linked to responsible environmental and social aims and above-average returns, suggesting that firms indeed can "do well by doing good" (Ambec & Lanoie, 2008; Guenster, Derwall, Bauer, & Koedijk, 2005; Margolis & Walsh, 2001; Orlitsky, Schmidt, and Rynes, 2003).

On the other hand, a separate meta-analysis of 127 studies did not confirm a sustainability-performance relationship (Margolis & Walsh, 2003). Others suggest that the key factors driving the sustainability-performance association are strategic and complex – including degree of industry maturity, market structure, customer demand, institutional intermediation, and type of business strategy (Siegel, 2009). Barnett (2007) argued for a more nuanced view of socially responsible investing, particularly in regard to the need for organizations to assess and properly weight the diverse CSR demands and influence capacities of various stakeholders to predict the ROI of CSR investments. A Goldman Sachs (2007) study found no evidence of a main effect for sustainability strategies alone but did find better-than-expected returns when factoring in the *interaction* of sustainability with such traditional factors as industry positioning, cash flow, and the like. As the urgency of issues concerning sustainability increases, investors may well pay an

increasing premium for the shares of companies that are capitalizing on such externalities (Mackey, Mackey, & Barney, 2007). In the meantime, the best conclusion seems to be that sustainability investments often improve and almost never detract from financial performance (Siegel, 2009).

Sustainability Enablers and Inhibitors

Although some consultants have given advice on how to follow a sustainability strategy (e.g., Blackburn, 2007; Epstein, 2008; Willard, 2009), only a limited amount of prior empirical academic research illuminates what specific factors enable the implementation of sustainable strategies and what factors tend to inhibit it. One source of insight comes from Wirtenberg, Harmon, Russell, & Fairfield's (2007) study involving interviews with executives at nine of the world's most sustainable companies. They identified a "pyramid" of seven core qualities commonly associated with successfully implementing sustainability strategies and achieving triple-bottom-line results. Two of the "foundation" elements were *top leadership support* and *strategic centrality* of sustainability initiatives. The third was deeply-held *values* consistent with sustainability, such as those espousing community, citizenship, and respect for employees. This finding is congruent with other studies of how organizational values influence the way that issues are interpreted and attended to (Thomas, Shankster, & Mathieu, 1994) and the chances of issues being acted upon (Dutton, 1997).

Several other studies provide support for Wirtenberg et al.'s (2007) three foundational organization enablers. In her qualitative study of two organizations' responses to environmental issues, Bansal (2003) found that both organizational values about environmental responses and top management support were associated with predicting sustainability-based actions. A study by

Berns and his colleagues (2009) singled out executive support and strategic centrality as keys to executing sustainability strategies. A longitudinal case study by Olsen and Boxenbaum (2009) examining the barriers that precluded implementation of a sustainability strategy reported that conflicting values and seemingly ambivalent management support greatly impaired implementation of a major sustainability project. Siegel (2009) emphasized the important role that transformational leadership plays in formulating and implementing sustainability initiatives.

Wirtenberg et al (2007) and several of the other studies discussed above also noted additional key barriers to implementing sustainability practices. These included an incomplete awareness of sustainability trends and their potential organizational impacts, a lack of ideas for practices that could be implemented, a weak business case being offered for the payoffs of such sustainability investments, and insufficient metrics to track progress and create accountability. An extensive literature on organization change (e.g., Burke, 2002) shows the power of inhibiting forces to impede even those initiatives with considerable forces driving them (e.g., Lewin, 1951).

Toward an Integrative Model.

Figure 1 shows an integrative conceptual model of the linkages among external influences, sustainability decision drivers, foundational organization enablers, internal inhibitors, sustainability practices, and performance. We used data from a worldwide survey of managers to test hypothesized interrelationships and pathways among these sets of factors. We have not before seen an attempt to integrate disparate theoretical and empirical streams of work on sustainability management into a single investigation.

Insert Figure 1 approximately here

Starting from the far right of the model, we expected that more extensive use of environmentally and socially responsible sustainability practices would bring about greater performance improvement. This expectation is based on the generally positive evidence from the sustainability-performance studies cited above. Thus, the first hypothesis:

Hypothesis 1: Organizations implementing sustainability practices to a greater degree will

evidence better performance improvement as compared to those that are not.

Based on the literature showing that organizations tend to make decisions based on the importance of issues and actions to their overall effectiveness, and the theory and growing evidence linking sustainability to competitiveness, legitimacy, and social responsibility cited above, we hypothesize the following positive relationship between decision drivers and implementation of practices:

Hypothesis 2: Organizations for which sustainability issues are more important decision

drivers will implement more extensive sustainability practices compared to organizations for

which they are less important.

Based on a large body of change-management research showing how internal inhibiting factors can diminish and even derail innovation and change efforts, and the smaller but growing literature cited above showing how lack of understanding, ideas, business logic, and metrics can impair sustainability efforts, we hypothesized the following:

Hypothesis 3: Internal inhibitors will have a negative effect on the implementation of

sustainability practices, directly plus indirectly by weakening decision drivers.

From a resource-based perspective, the studies cited above identifying cultural values, top management support, and strategic centrality as foundational organization enablers for implementing sustainability strategies led us to hypothesize the following:

Hypothesis 4: Stronger foundational enablers will positively affect the implementation of sustainability practices, directly plus indirectly by strengthening decision drivers and diminishing internal inhibitors.

The variety of theories regarding the diverse external influences of stakeholders, institutions, and industry competitive structure on organization strategy leads us to expect strong but varying effects (depending, for example, on whether particular regulations may be relaxed or become more stringent, or whether demands by particular stakeholders may increase or decrease). Such impacts could include altering the salience of sustainability issues in decision making, the degree of top management support for sustainability, the strength of internal inhibiting forces, and thus the degree of sustainability practices implemented. Specifically, we hypothesized:

Hypothesis 5: External influences will affect the degree to which organizations implement sustainability practices through their positive or negative effects on foundational organization enablers, decision drivers, and internal inhibitors.

METHODS

For our analyses, we used data from a worldwide survey designed for this study and conducted in 2007 by the American Management Association (AMA), with the assistance of the Human Resource Institute (HRI) and the Institute for Sustainable Enterprise (ISE) at Fairleigh Dickinson University. The survey asked respondents about the degree to which their organizations were implementing sustainability practices; the factors driving, enabling and inhibiting organizational sustainability; and the amount of performance improvement experienced over the previous five years.

Participants

The target survey population consisted of AMA's international e-mail list of executives, managers, supervisors, and individual contributors across a wide range of functions; the HRI e-mail list of primarily high-level human resource professionals; and HR.com's list of members. A link to an online survey was e-mailed to the target population by region during February 2007. In total, 1,524 usable surveys were submitted, with all respondents answering all questions, as the survey did not allow for partial responses (given the self-selection nature of the on-line survey process, it was not possible to calculate response rates).

Respondents came from 44 countries. Over 60% (683) were based in the US, while the remaining 435 respondents were based in six other geographic regions, including Asia-Pacific (119), Western Europe (103), Canada (75), Africa-Middle East (53), Latin America (52), and Eastern Europe (33). .

In terms of respondent characteristics, approximately 75% were at or above the managerial level. Just over 53% of respondents were female. Although respondents represented a broad variety of functions, just over 50% came from human resource-related areas due to the heavy participation in the survey by HRI and HR.com members. Nevertheless, preliminary Analysis of Variance showed that the ratings of HR respondents on study measures were not meaningfully different from those of non-HR respondents (all Fs < 4.0, p>.01; set at this level so as not to magnify trivial differences due to our large sample sizes), with one exception —not surprisingly, HR practitioners saw workforce issues as a stronger sustainability motivating factor than did those from outside the HR domain (means of 3.75 and 3.57, respectively, F 20.6, p<.01)

Many respondents' organizations were either global or multinational in their scope of operations (29% and 26%, respectively), while 45% were national organizations. Virtually every economic sector was represented and there was a relatively even split between smaller, medium,

and large-sized organizations – about one-third had revenues of below $50 million and about 39% had fewer than 500 employees, while about one-third had over 5,000 employees and over a billion dollars in revenue.

Survey Measures

All survey questions used five-point, Likert-type scales, with a 1 rating generally designated as "not at all" and a 5 rating as, depending on the question, "to a very great extent" or "extremely important." The survey's construction was guided by a review of the same body of literature cited above. Questions were grouped on the survey in separate sections organized by perceptions of sustainability practices, performance improvement, decision drivers, organization implementation enablers, and implementation inhibitors. We also used as separate measures responses to two overall questions: 1) "To what extent do you believe that your organization is implementing a sustainability strategy?", and 2) "To what extent is your organization seeing measurable benefits from sustainability initiatives?" Descriptive statistics and correlations are shown in Table 1.

Insert Table 1 approximately here

To establish the reliability and validity of our scales and measures, we randomly split the overall sample into two groups: a pilot test sample consisting of a random sample of one-quarter of respondents (n = 396), and a study sample consisting of the remaining three-quarters of the overall sample (n = 1118). This was done so as to avoid validating and testing newly constructed scales using the same sample, which could lead to capitalization on chance and inflated correlations (Stevens, 2001). We first used the pilot sample to perform an exploratory factor analysis using Principle Components Analysis (PCA) with Promax (oblique) rotation on the items

in each section of the survey (excluding the two overall questions noted above). We then grouped

items together based on their factor loadings, performed scale diagnostics, and created a single

scale score by simply averaging the responses to the items for each grouping. Next, we applied

this factor structure to the second study sample and performed confirmatory factor analyses and

scale analyses. We subsequently tested for systematic differences between the pilot sample and

the larger sample and did not find any meaningful differences. The analyses reported in the

methods and results sections are based on only the second sample of 1,118 respondents. More

specific details for each measure follow.

Perceived Performance Improvement was assessed via responses to the question "How

would you rate (1=much worse, 5=much better) the following compared to the last five years, a)

your revenue growth, b) your profitability, c) your market share, d) your customer satisfaction.

These four items loaded on a single factor. Table 2 lists these four items along with their means,

standard deviations, and factor loadings. Consequently, we grouped them to produce a single

scale, which exhibited a Cronbach's alpha estimate of reliability of .81.

Insert Table 2 approximately here

Sustainability *Practices* were assessed via responses to the multi-part question: "On a scale

from 1-5, to what extent does your company have practices in place to do the following?" PCA

analysis showed that the items under this umbrella question fell into three factors (explaining

72.2% of the variance in the response pattern). Table 3 shows the individual items along with their

means, standard deviations, and factor loadings. We averaged the items under each factor to

produce three five-point scale scores: Practices 1- Integration/Alignment (α = .94), Practices 2-

Eco-Efficiency (α = .88), and Practices 3 - Employee-Centered/Ethics (α = .79).

Insert Table 3 approximately here

Decision Drivers were assessed via responses to the multi-part question: "On a scale of 1-

5, to what extent does each of the following items drive key business decisions for your company

today?" PCA analysis showed that the items under this umbrella question fell into four factors

(explaining 70.1% of the variance in the response pattern). Table 4 shows the individual items

along with their means, standard deviations, and factor loadings. We averaged the items under

each factor to produce four five-point scales scores: Drivers 1- Environmental/Operational Issues

(α = .93), Drivers 2- External Stakeholder/Marketplace Issues (α = .90), Drivers 3- Workplace

Issues (α = .75), and Drivers 4- Reputation/Innovation/Compliance Issues (α = .68).

Insert Table 4 approximately here

Internal Inhibitors were assessed via responses to the multi-part question: "to what degree

does each of the following issues hinder your company from moving toward sustainability?" PCA

analysis showed that the items under this umbrella question fell into one factor (explaining 61.1%

of the variance in the response pattern). Table 5 shows the individual items along with their

means, standard deviations, and factor loadings. We averaged the items under this factor to

produce a single five-point scale score (α = .84).

Insert Table 5 approximately here

Foundational Organization Enablers were assessed via responses to the umbrella question

"On a scale of 1-5, to what extent does your company have the following qualities for building a

sustainable enterprise: a), top management support, b) centrality to business strategy, and c)

deeply ingrained sustainability values. These three items loaded on a single factor (explaining

77.5% of the variance in response pattern). Table 6 lists these three items along with their means,

standard deviations, and factor loadings. We averaged the three items to produce a single five-

point scale score ($\alpha = .90$).

Insert Table 6 approximately here

We also explored two types of *External Influences* that would be expected to undermine an

organization's desire to otherwise pursue a sustainability strategy.. The stem for this survey

section was "to what degree does each of the following hinder your company from moving toward

sustainability?" For completeness, the survey could have also queried the external issues that

positively influenced more sustainability management, but this was not done. PCA analysis

showed that four items fell into one factor (explaining 55.1% of variance in the response pattern),

called *Lack of External Stakeholder Demands*. This factor appeared to capture external aspects

consistent with the stakeholder view of the firm. These were the items that probed for lack of

demand for sustainability actions from the community, suppliers, consumers and customers, and

shareholders and investors (all negatively scored). Table 7 shows the individual items along with

their means, standard deviations, and factor loadings. We averaged the four items to produce a

single five-point scale score (α = .90). A second independent factor emerged based on responses to the item, "Fear of competitors taking advantage of us," labeled *Competitive Disadvantage* (also negatively scored). This factor appears to capture an external aspect of rivalry dynamics consistent with theories of industry structure.

Insert Table 7 approximately here

ANALYSIS

Preliminary data analysis was conducted using the SPSS 15.0 software package. Our expectations relating to the linkages among the constructs in our conceptual model – of external influences, foundational organization enablers, decisional drivers, internal inhibitors, sustainability practices, and performance – were tested using the AMOS 5.0 software package for structural equation modeling (SEM). Using SEM over traditional regression techniques for these analyses has three advantages: (1) SEM allowed us to correct for measurement error (by assessing and adjusting for the relative reliability of the various indicators of each of the latent variables or constructs), resulting in more accurate statistical tests than could have been performed with traditional regression techniques; (2) SEM allowed us to simultaneously calculate both direct and indirect effects of study variables; and (3) SEM automatically provided us with statistical tests of the adequacy of our hypothesized model compared with alternative "good-fitting" models (see, for example, Byrne, 2001, and Schumaker and Lomax, 1996).

RESULTS

Table 1 shows the correlations between the measures used in this study. Respondents'
organizations appeared to be implementing sustainability to only a moderate extent, both overall
(mean 3.01) and in terms of the three specific areas of sustainability practices we measured (means
of 2.83, 2.95, and 3.67). The strongest achievement evidenced was in regard to employee-
centered and ethics practices. Also, organizations were seen as having only moderate levels of
foundational organization enablers. Sizable gaps existed between the extent to which the
organizations were reported to have enabling qualities (means for underlying values, top
management support, and strategic centrality ranging from 3.1 to 3.3, Table 5), compared to the
much higher perceived importance of these qualities for executing a sustainable strategy (not
shown in detail here), which ranged from means of about 3.9 to 4.4. In terms of overall
implementation of sustainability, larger firms reported higher levels, as shown through ANOVA
comparing three revenue categories --less than $50M, $50M to $1B, greater than $1B ($F = 15.12$,
$p < .001$).

Test of Conceptual Model

The results of the SEM analyses are shown in Figure 2. As can be seen, the results provide
support for our hypotheses that: (a) sustainability practices are positively associated with firm
performance improvement, (b) the drivers of sustainability decision-making are positively
associated with implementing sustainability practices, (c) internal inhibitors are negatively
associated with both decision drivers and sustainability practices, (d) companies' foundational
enablers are associated positively with decision drivers and negatively with internal inhibitors, and
(e) external influences –in this case two negative factors outside the organization -- are associated
negatively with enablers and drivers, and positively with internal inhibitors.

Insert Figure 2 approximately here

Hypothesis 1: Sustainability *Practices* are positively linked with *Perceived Performance*

Improvement (β = .24, p < .05). A total of 5.8% of the variance in perceived performance

improvement is accounted for by the predictors in the model. As can be seen in Table 2, the

strongest area of perceived improvement was revenue growth. Table 3 shows that organizations

were rated strongest in practices for employee health and safety, ethical accountability, supporting

work-life balance, involving employees in decisions affecting them, and providing training and

development on sustainability practices. The least implemented practices concerned linking

sustainability to compensation, reducing greenhouse gas emissions, and establishing sustainability

metrics.

Hypothesis 2: Sustainability *Decision Drivers* are directly associated with sustainability

Practices (β = .70, p < .05), accounting for 48.6% of the variance in implementation. Not

surprisingly, organizations in which decision making was reported to be more strongly influenced

by sustainability concerns tend to be seen as implementing sustainability practices to a greater

degree. The four factors defining the Drivers construct (Table 4) had similar construct loadings.

Thus, environmental/operational concerns; reputational, innovation and compliance concerns;

workplace issues; and external stakeholder and marketplace issues are all relevant for predicting

sustainability practices.

Hypothesis 3: The reported weak competencies, organizational systems, business logic and

ideas captured in sustainability *Inhibitors* are directly negatively associated with sustainability

Practices, (β = -.24, p < .05). In addition, Inhibitors are also indirectly linked with sustainability

Practices through their negative effects on sustainability Drivers (β = -.28, p<.05). Thus, the total

negative effect of Inhibitors on Practices is $\beta = -.43$ (p < .05), calculated by multiplying the indirect related path coefficients and adding to the direct. It should be noted, however, that none of these Inhibitors was seen to be very strong, as all means were below 3.13 (Table 5). Importantly, they all appear amenable to management intervention.

Hypothesis 4: Foundational Enablers are not significantly correlated directly to Practices, but they are positively associated with Decision Drivers ($\beta = .32$, p<.05) and negatively associated with Inhibitors ($\beta = -.07$, p<.05). These two relationships combined indicate that Enablers' total indirect effect on Practices is appreciable ($\beta = .26$, p<.05). It is noteworthy that foundation dynamics such as senior management support and making sustainability central to strategy does seem to affect decision-making and the extent of awareness, metrics, and business case and thus indirectly get translated into actual sustainability initiatives.

Hypothesis 5: The two facets of External Influences that we were able to measure – concerning lack of stakeholder demands and rivalry concerns – had most of the significant effects on decision drivers, enablers and inhibitors that we hypothesized. The reported *Lack of External Stakeholder Demands* for sustainability from community, suppliers, customers, and investors directly (a) diminished Foundational Enablers ($\beta = -.20$, p<.05), (b) suppressed Decision Drivers ($\beta = -.20$, p<.05), and (c) accelerated the negative effects of Internal Inhibitors ($\beta = .45$, p<.05). When including the indirect effects of stakeholder influence on Enablers and Internal Inhibitors, the total effect on Drivers is $\beta = -.39$ (p<.05). The total indirect effects of Lack of Stakeholder Demands on the implementation of sustainability Practices is $\beta = -.39$ (p < .05).

Competitive Disadvantage associated with the perception that rivals may take advantage of an organization's dedication to sustainability shows no significant association with Foundational Enablers. However, as one would expect, this Disadvantage is negatively associated with

Decision Drivers (β = -.19, p<.05), meaning the perceived threat suppresses the inclination to attend to such drivers and thence related practices. Similarly, Competitive Disadvantage is positively associated with Internal Inhibitors (β = .34, p<.05), as an increased threat would be congruent with a company having a weak business case, poor metrics, and the like. Competitive Disadvantage has a small indirect association with Practices (total effect β = -.08, p<.05).

In terms of predictive ability, the specified predictors in the model explain 67% of the variance in the implementation of sustainability Practices and 5.8% of the variance in organizational Performance, Further, 33% of variance for Decision Drivers and 34% for Internal Inhibitors are accounted for, but only 4% of variance for Foundational Enablers.

The model presented in Figure 2 represents a good fit to the data. Specifically, the following goodness of fit statistics are indicative of good-model fit: (a) the CFI index is .95 (values over .90 indicate good fit), (b) the NNFI (Tucker-Lewis index) is .94 (values over .90 indicate good fit), and (c) the RMSEA is .078 (values at or below .08 indicate good fit). The chi-squared for the model is 348.28 with 44 degrees of freedom (p < .05); this result is statistically significant, which normally would indicate that the model fit is problematic. However, as many researchers have noted, the chi-squared index is susceptible to bias when used with large sample sizes. Because of the increased power when used with samples as large as ours, even tiny deviations from a perfect fitting model lead to significant results (Anderson & Gerbing, 1988).

To achieve the best fitting model with the specified variables, we correlated the error terms of three factors that make up the Decision Drivers construct with three factors that make up the Practices construct. This was done because they share common variance based on a common construct not included in the model (e.g., common wording in items even though they are being used to assess conceptually different constructs). Specifically, both Driver factor 1 and Practices

factor 2 deal with environmental concerns and practices; both Driver factor 3 and Practices factor

3 deal with workforce and employee issues; and both Driver factor 4 and Practice factor 1 deal

with alignment of organizational systems around sustainability. Thus, it is conceptually

reasonable to allow the error terms of these factors to covary. According to both Anderson and

Gerbing (1988) and Kenny (1998), correlating error terms in structural equations modeling is

justified when there is theoretical reason to do so and the rule is applied consistently. This

precedent has been followed in many organizational studies (see Laschinger & Leiter, 2006, for a

recent example). Overall, the results of the model fit statistics are positive, particularly for a

model as complex as the one we report.

 Because we proposed that our model is valid across a diverse sample of organizations, it is

important to establish that there are no systematic differences among sample subgroups.

Therefore, we ran a set of multiple-group SEM analyses to test whether our proposed model

applies equally to different categories of organizations.   Specifically, we tested whether our model

was invariant across international scope (3 categories, national, multinational, and global

companies); firms of various employee sizes (3 categories, under 500, 500-5000, over 5000; and

firms of varying revenue levels (3 categories, less than $50M, $50M to $1B, greater than $1B). In

each case, the overall model fit did not differ significantly among levels of the included

categorical variables. While there were very few differences in path coefficients and in response

item means, these were few, not particularly large, and did not affect model fit, suggesting that our

model applies across organizations of different sizes and international scope.

DISCUSSION

The survey results validate our -structural equation model and further illuminate how aspects of organizations, context, and decision-making processes combine to influence the implementation and success of sustainability efforts. In some respects, our results may seem predictable, particularly if one recognizes that implementing sustainability strategies is likely to evidence many of the same dynamics associated with other types of complex and transformative strategic change interventions (e.g., Tushman & Romanelli, 1985; Bartunek & Lewis, 1988). For example, it is rather expected that stronger external influences for sustainability (or in this case, weaker impediments) will increase the degree to which sustainability issues get featured in the dialogue of a company's decision makers, and that this will lead a company to employ more sustainability practices. So it is not surprising that our respondents perceived competitive disadvantage as a deterrent to sustainability management or that their company's inclination to move toward sustainability was muted by a lack of pressure from stakeholders (the community, suppliers, customers, and investors). Also quite consistent with prior work (e.g., Wirtenberg et al, 2007), was the important role that foundational organizational enablers such as values, top management support and strategic centrality appeared to play in strengthening the sustainability agenda and spurring implementation.

Similarly unsurprising is the lack of dramatic progress toward sustainability reported by the respondents to this sizable global survey. As earlier studies might predict (e.g., Wirtenberg et al., 2007), only a moderate level of actual sustainability practices were reported, the most common of which concerned workplace practices related to health and safety, and eco-efficiency practices related to reducing waste and operating costs. Least progress was reported on the most challenging practices concerning the more subtle issues of aligning sustainability with human

resource (recruitment, compensation, and promotion) and other organizational systems (Harmon, Fairfield, & Wirtenberg, 2010).

Some of the strongest sustainability decision drivers reported in our study – spurring innovation and growth, enhancing reputation and image, avoiding regulatory entanglements, and attracting and retaining top talent – are those often identified as among the strongest corporate benefits of sustainability strategies (Blackburn, 2007; Savitz & Weber, 2006). The specific decision drivers and practices reported by this much larger sample are congruent with Bansal & Roth's (2000) drivers of competitive advantage and legitimation, with less impact from social responsibility. Further, these results are consistent with Basu and Palazzo's (2008) stakeholder-driven, performance-driven, and motivation-driven rationales for corporate social responsibility.

Also consistent with prior studies are the associations we found between larger organizations and greater sustainability implementation. Similarly, performance was perceived to have improved more for organizations that were implementing sustainability practices to a greater degree (with the caveats noted below). Although one might be tempted to infer that more extensive sustainability activities enabled those companies to improve their competitive position, it may simply be that larger and more financially successful firms command more resources to invest in vigorous sustainability initiatives.

In addition to confirming earlier research, our integrative model and findings appear to extend what previous researchers have done by bringing together what heretofore have been mostly disparate theoretical streams and disconnected empirical findings related to specific sustainability antecedents and outcomes. While drawing on earlier work on what is required to implement transformative strategic change, this model focuses on the qualities unique to sustainability management. It posits relationships among most of the key components identified

as leading to sustainability practices and, to some extent, perceived performance improvement. In particular, it helps us see more clearly the *joint* direct and indirect effects on the implementation of sustainability practices of various external influences, decision drivers, organizational enablers, and internal inhibitors. Our model exhibited good fit to the data and demonstrated predictive validity in that the predictors in the model accounted for considerable variance in the dependent variables. Most importantly, this integrative model can be used as a guide for future research on the business, leadership, and decision-making issues that can affect the successful formulation and implementation of sustainability strategies.

One of the most interesting and potentially practical findings revealed by our integrative analysis is how inhibiting factors, such as the lack of a business case, understanding, ideas for action, and metrics, exert a substantial restraining effect on practices employed. In fact, the coefficient associated with this effect is much higher than for the positive of foundational enablers (.44 versus .26). Such a comparison parallels the classic interpretation from the force field concept about the powerful negative influence thrown up by forces inhibiting change, sapping the power of positive forces (Lewin, 1951). In this case, focusing on the lack of positive influences emphasizes the idea that the absence of certain factors can still neutralize positive forces, possibly creating passive resistance that can impede implementation of change. A recognized precept is that interventions to reduce inhibiting factors are more likely to be effective at leading to desired actions than attempting to bolster positive ones. In this case, it is reassuring to note that the inhibiting forces we assessed were only moderate in strength. In fact, all of them appear to be amenable to managerial intervention, by creating awareness, generating ideas, developing metrics, and formulating a strong business case (Olsen & Boxenbaum, 2009).

Another theoretically interesting finding revealed by our integrative approach is that no significant paths emerged to explain Foundational Enablers, except for External Stakeholder Demands, which accounted for merely 4% of variance. One interpretation would be that other factors not specified in the model exist that explain what brings about company values, top management support, and strategic centrality of sustainability. Another perspective, however, is that these elements are deeply embedded in a company's culture and "organizational DNA," so that they are more akin to an exogenous variable and not amenable to short-term influence. The latter interpretation is congruent with the position expressed in Wirtenberg et al's (2007) exploratory research on common themes in highly sustainable companies. In addition, while the level of perceived enablers was moderate (mean between 3.1 and 3.4), their perceived *importance* to respondents was much higher (3.9 to 4.4). This may be seen as respondents' criticisms of their organizations but also a keen readiness for a greater emphasis on values, strategic centrality, and top management support in the sustainability transformation process.

Several limitations of our findings should be acknowledged. The most serious relate to how the data were obtained. For one thing, all data were assessed solely through self-reported measures, which are subject to assessors' distortions and common response bias. For another, questions on performance were not posed in terms relative to competitors and the survey occurred during a time of general economic expansion. Nevertheless, the question remains: Why would performance be perceived to have increased or decreased more in some firms than others during this same economic cycle? Our results show that a significant amount of this variance can be explained by the degree to which sustainability practices were implemented. Admittedly, however, the perceived performance measure was rather crude, and future research is advised to

use more objective and rigorous indicators of corporate performance, such as actual performance data.

A second area of limitation results from assessing only two of the many potentially significant external influencers of sustainability dynamics in organizations. One was the fear of competitors taking advantage of the company as a hindrance to moving toward sustainability. The other factor assessed the extent to which the lack of demand from external stakeholders for a sustainability strategy exerted a negative versus a positive influence. Thus, our findings on stakeholder influence reveal only the effect of the absence of such factors, not of the effect of positive demands. Future research should strive to integrate into the model a greater number of external factors, such as positive pressure from stakeholders, type of organization product-market strategy, and measures of industry structure.

A third limitation is that, although the survey design was informed by the theories cited in this study and we did validate the measures to a great extent with the pilot sample, a separate validation study of the measures was not performed before the survey launch. The measures produced a good fit to our model at the construct level. At the same time, the loading of certain items on factors within constructs did not always parse as cleanly as theorized. This may reflect a natural confounding of sustainability issues (theory suggests considerable interaction among the types of decision motives and types of practices) or a lack of adequate psychometric rigor.

Fourth, even though considerable diversity existed across organizations and countries involved in this study, the majority of respondents came from the U.S. An in-depth geographic comparison is beyond the scope of this paper. A much greater sample of respondents outside the U.S. is necessary to ascertain the validity of the model globally. The extent to which similar results would be obtained with other international samples remains unclear. Future studies should

look at differences between each region, using sufficiently large sample sizes to permit reliable comparison. Finally, the research design advises caution in drawing inferences about causality, because multiple, time-ordered perceptual measures necessary to establish causal relationships were not used.

In conclusion, we tested and validated an integrative model, weaving together several related theoretical streams and showing the simultaneous – separate and combined – effects that external influences, foundational organization enablers, decision drivers, and inhibitors had on both sustainability implementation and organizational performance. Implementing sustainability strategies can usefully be viewed as a strategic transformation intervention, albeit involving more complex issues and a broader array of stakeholders than most. We found that organizations are largely muddling along on their sustainability journeys. This model identifies how influences outside the direct control of executives, along with internal factors and decision considerations, are associated with a variety of sustainability management actions that seem to translate into performance improvement. We hope that future research can extend these findings and provide more pointed, practical advice to managers on how to improve their business practices. Given the vital importance of sustainability issues to the welfare of both business and the world, such insights seem not only desirable but critical.

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Table 1
Descriptive Statistics and Correlation Coefficients for Variables in the Study

Variables	Mean (1-5)	s.d.	1 Ext D	2 Thret	3 Enabl	4 Driv1	5 Driv2	6 Driv3	7 Driv4	8 IntInh	9 Prac1	10 Prac2	11 Prac3	12 Perfm	13 Imple	14 Benef
1. Lack of External Demands	3.03	1.12	(0.90)													
2. Competitive Disadvantage	2.39	1.22	0.24	n.a.												
3. Foundation Enablers	3.22	1.24	0.20	0.05	(0.90)											
4. Drivers1- Eco-system	3.31	1.10	0.24	0.02	0.27	(0.93)										
5. Drivers2 - Extern. Stakeholders	3.47	1.00	0.38	0.02	0.37	0.68	(0.90)									
6. Drivers3 – Workforce issues	3.80	.79	0.18	0.09	0.23	0.51	0.58	(0.75)								
7. Drivers4 – Rep/Innovn/Compl	4.05	.83	0.14	0.05	0.29	0.49	0.61	0.54	(.68)							
8. Internal Inhibitors	3.02	.96	-0.53	-0.44	-0.17	-0.25	-0.35	-0.30	-0.23	(0.84)						
9. Practices1 – Integration/Alignt.	2.83	1.12	0.43	0.03	0.35	0.54	0.66	0.48	0.34	-0.47	(.94)					
10. Practices2 – Eco-efficiency	2.95	1.12	0.21	0.02	0.24	0.59	0.43	0.34	0.33	-0.31	0.58	(0.88)				
11. Practices3 – Employee/Ethics	3.67	.83	0.24	0.15	0.23	0.41	0.42	0.64	0.39	-0.39	0.60	0.52	(0.79)			
12. Perceived Perform.Improvemt	3.60	.69	0.11	0.06	0.09	0.13	0.16	0.15	0.19	-0.21	0.19	0.14	0.21	(0.81)		
13. Extent Implementing	3.01	1.17	0.44	0.09	0.37	0.49	0.58	0.45	0.33	-0.49	0.81	0.58	0.60	0.21	(na)	
14. Extent Seeing Benefits	2.88	1.10	0.41	0.03	0.34	0.47	0.57	0.38	0.28	-0.42	0.67	0.47	0.42	0.22	0.67	(n.a)

Notes: Study sample size = 1118. Correlations greater than |.05| are significant at the p<.05 level. For simplicity here, the items comprising the study's constructs/factors were averaged into single scale scores.
Scale reliability shown on the diagonal.

Table 2
Perceived Performance Improvement Scale Items

On a scale from 1-5, how would you rate the following compared to the last five years?
(1=much worse, 5=much better)

Factor/Scale	Mean	S.D.	Factor Loading
Perceived Performance Improvement			
Your revenue growth	3.69	0.95	.87
Your profitability	3.56	0.92	.86
Your market share	3.56	0.82	.85
Your customer satisfaction	3.59	0.73	.62

Table 3
Sustainability Practices Scale Items

On a scale from 1-5, to what extent does your company have practices in place to do the following?

Factor/Scale	Mean	S.D.	Factor Loading
Practices 1 –Integration/Alignment			
Use sustainability-related criteria in recruiting and selection	2.84	1.28	.90
Use sustainability-related criteria in promotion and career advancement	2.77	1.27	.90
Link sustainability-related criteria to compensation	2.53	1.22	.86
Establish indicators to determine if the organization is meeting sustainability goals	2.78	1.33	.88
Highlight our commitment to sustainability in our brand	3.11	1.36	.83
Work with suppliers to strengthen sustainability practices	2.96	1.24	.83
Get groups across your organization that are working on sustainability-related initiatives to work more closely together	2.84	1.28	.82
Provide employee training and development related to sustainability	3.26	1.21	.74
Practices 2 –Eco-Efficiency			
Reduce waste materials	3.13	1.26	.90
Reduce greenhouse gas emissions	2.65	1.29	.89
Improve energy efficiency	3.07	1.19	.87
Practices 3 –Employee-Centered/Ethics Practices			
Involve employees in decisions that affect them	3.27	1.15	.85
Support employees in balancing work and life activities	3.37	1.14	.84
Ensure the health and safety of employees	4.05	0.90	.71
Ensure accountability for ethics at all levels	3.98	1.03	.71

Table 4
Decisional Drivers Scale Items

On a scale of 1-5, to what extent does each of the following items drive key business decisions for your company today?

Factor/Scale	Mean	S.D.	Loading
Drivers 1 –Environmental/Operational Issues			
Reducing pollution and toxic chemical use and their effects on our employees, customers and the communities in which we operate	3.47	1.28	.89
Securing needed energy resources (electricity and fuel)	3.42	1.27	.88
Securing needed raw materials over the long term for our employees, suppliers, customers and the communities in which we operate	3.21	1.30	.87
Reducing and/or managing the risks and impacts of climate change on our employees, customers and the communities in which we operate	3.04	1.29	.86
Ensuring an adequate supply of water for our employees, suppliers, customers and the communities in which we operate	3.27	1.32	.83
Enhancing operational efficiency through energy and waste reduction	3.47	1.18	.83
Drivers 2 –External Stakeholder/Marketplace Issues			
Attracting new customers and developing new markets through sustainability initiatives	3.59	1.24	.88
Enhancing current customer satisfaction and loyalty through sustainability initiatives	3.63	1.18	.88
Encouraging suppliers to use management practices that enhance sustainability	3.25	1.23	.84
Working with other firms to voluntarily create sustainable industry standards	3.13	1.27	.83
Providing products and services that are good for the world	3.74	1.18	.75
Improving relations with community stakeholders including nongovernmental organizations (NGOs) and community activists	3.47	1.21	.70
Drivers 3—Workforce Issues			
Improving employee morale, engagement and commitment	3.88	1.05	.87
Attracting and retaining diverse top talent	3.96	1.05	.84
Finding solutions to the challenges of an aging workforce	3.37	1.17	.72
Drivers 4—Reputation/Innovation/Compliance Issues			
Meeting expectations of investors and lenders	4.00	1.14	.86
Improving our reputation/brand image with shareholders and the public	4.13	1.00	.79
Enhancing innovation for competitive advantage	3.99	1.06	.78
Effectively addressing regulatory restrictions wherever we operate	4.03	1.05	.63

Table 5
Internal Inhibitors Scale Items

On a scale from 1-5, to what degree does each of the following issues hinder your company from moving toward sustainability?

Factor/Scale	Mean	S.D.	Factor Loading
Internal Inhibitors			
Lack of specific ideas on what to do and when to do it	3.08	1.25	.85
Unclear or weak business case	2.97	1.26	.81
Lack of awareness and understanding	3.13	1.22	.80
Lack of standardized metrics or performance benchmarks	3.13	1.26	.76

Table 6
**Foundational Organization Enablers Scale Items**

On a scale of 1-5, to what extent does your company have the following qualities?

Factor/Scale	Mean	S. D.	Factor Loading
Centrality to business strategy - Sustainability is central to the company's competitive strategy	3.23	1.23	.93
Top management support – The CEO, the chairman of the board, and senior management team show public and unwavering support for sustainability	3.32	1.19	.92
Values - Key values related to sustainability are deeply ingrained in the company	3.11	1.31	.87

Table 7
External Influences Scale Items

On a scale from 1-5, to what degree does each of the following issues hinder your company from moving toward sustainability?			
Factor/Scale	**Mean**	**S.D.**	**Factor Loading**
External Influences 1 – Lack of Stakeholder Demand			
Lack of demand from the community	2.95	1.25	.89
Lack of demand from suppliers	3.00	1.26	.88
Lack of demand from consumers and customers	3.13	1.26	.87
Lack of demand from shareholders and investors	3.03	1.34	.87
External Influences 2 – Competitive Disadvantage			
Fear of competitors taking advantage of us	2.39	1.22	na

Figure 1. Conceptual Model Linking All Variables in the Study
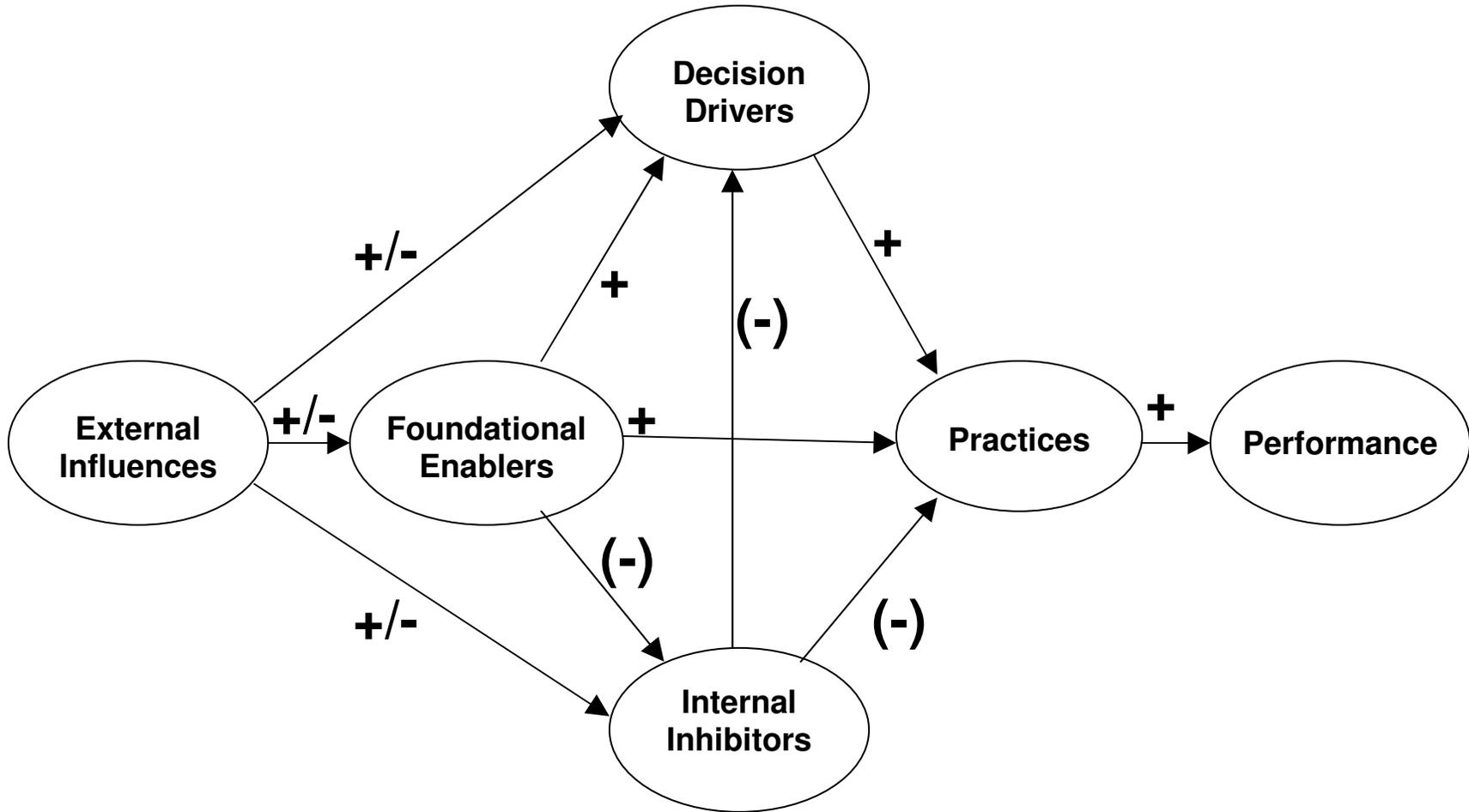
Note: Other potentially important industry moderating variables not measured in this study include industry concentration, demand growth and stability, product differentiation, R&D and capital intensity, and institutional intermediation.

Figure 2.
Results of the Structural Equation Modeling Analysis
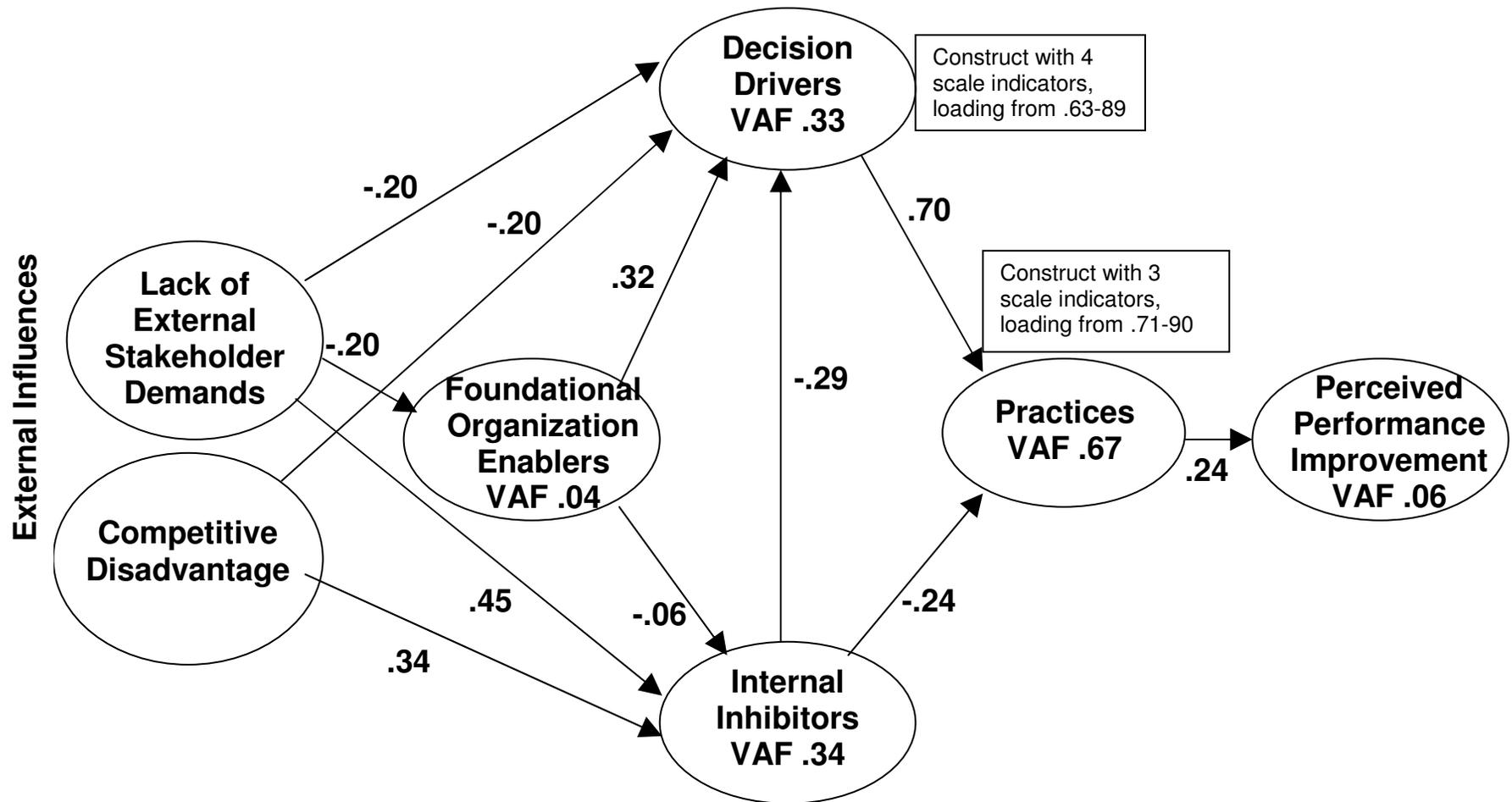
Notes : All path coefficients are statistically significant at *p* < .05. VAF = Variance accounted for by all predictor paths

1. For clarity of presentation, Figure 1 only depicts the structural model and does not illustrate error terms and paths between composite indicators and latent constructs. Please contact the authors for information on the measurement model.

2. The model presented in Figure 2 represents a good fit to the data. Although as expected with such a large sample the chi-squared for the model is significant (348, degrees of freedom 44, p<.05), indicating that the model is statistically different from a perfect-fitting one, the following goodness of fit statistics are all indicative of good-model fit: (a) the CFI index is .95 (values over .90 indicate good fit); (b) the NNFI (Tucker-Lewis index) is .94 (values over .90 indicate good fit); and (d) the RMSEA is .079 (values at or below .08 indicate good fit).