

The Contingent Influence of Organizational Capabilities on Proactive Environmental Strategy in the Service Sector: An Analysis of North American and European Ski Resorts

Sanjay Sharma
Concordia University

J. Alberto Aragón-Correa
University of Granada
Erasmus University

Antonio Rueda-Manzanares
University of Granada

Abstract

Our study of 134 North American and European ski resorts examines the influence of externally focused organizational capabilities on the generation of proactive environmental strategies under contingent effects of uncertainty in the general business environment. We find that the capabilities of strategic proactivity and continuous innovation are associated with proactive environmental strategies. Managerial perceptions of uncertainty in the general business environment moderate the deployment of the capability of continuous innovation at all levels of uncertainty and stakeholder engagement at low and average levels of uncertainty. The study contributes to the resource-based view (RBV) by illuminating an important contingency under which capabilities are likely to be deployed to generate a proactive corporate strategy. Copyright © 2007 ASAC. Published by John Wiley & Sons, Ltd.

JEL Classifications: M10, M14

Résumé

Notre étude, qui porte sur 134 stations de ski nord-américaines et européennes, examine l'influence de la capacité organisationnelle tournée vers l'extérieur sur l'élaboration des stratégies environnementales préventives en présence d'effets contingents de l'incertitude dans le contexte général des affaires. Les résultats indiquent que les capacités de proactivité stratégique et d'innovation permanente vont de pair avec les stratégies environnementales préventives. La perception que les gestionnaires ont de l'incertitude dans le contexte général des affaires freine, d'une part, le déploiement de la capacité d'innovation permanente à tous les niveaux d'incertitude et, d'autre part, l'engagement des intervenants à des niveaux d'incertitude faibles et moyens. En dégageant une contingence importante susceptible de favoriser le renforcement de la capacité organisationnelle en vue de générer une stratégie d'entreprise préventive, l'étude apporte une contribution à l'approche fondée sur les ressources (RBV). Copyright © 2007 ASAC. Published by John Wiley & Sons, Ltd.

We would like to thank the managers of North American and European ski resorts and the scholars who contributed their time and ideas to this study. The last two authors thank Fundación Centra and the Spanish Ministry of Science and Research for providing partial funding for this research through project SEC 2003-07755.

*Please address correspondence to: Sanjay Sharma, Dean, The John Molson School of Business, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, QC H3G 1M8. Email: ssharma@jmsb.concordia.ca

Keywords: natural environment, resource based-view, organizational capabilities, proactive environmental strategy, environmental uncertainty

Mots clés : environnement naturel; approche fondée sur les ressources (RBV); capacité organisationnelle; stratégie environnementale proactive; incertitude d'environnement

Improved financial performance usually accompanies proactive environmental strategies of waste reduction and pollution prevention that exceed regulatory requirements (e.g., Hart & Ahuja, 1995; Judge & Douglas 1998; Klassen & McLaughlin, 1996; Russo & Fouts, 1997). Hart (1995) argued in his 'natural resource-based view of the firm' that this is because firms with proactive environmental strategies generate valuable organizational capabilities that contribute to competitive advantage. Indeed, this argument has been supported empirically in both single industry and cross-industry studies (e.g. Christmann, 2000; Klassen & Whybark, 1999; Marcus & Geffen, 1998; Russo & Fouts; Sharma & Vredenburg, 1998). Even with the evidence accumulated over the last decade that proactive environmental strategies are likely to be accompanied by improved financial performance, we still lack a well-developed understanding of why only some firms in an industry implement such strategies.

One stream of research has examined the influence of specific internal organizational factors on the willingness of firms to develop proactive environmental strategies. Examples of such influences include managerial interpretations of environmental issues, (Bansal, 2003; Sharma, 2000), managerial attitudes toward the environment (Cordano & Frieze, 2000), leadership (Egri & Herman, 2000; Ramus & Steger, 2000), and organizational champions (Andersson & Bateman, 2000). These studies shed light on some internal influences that affect the *willingness* of firms to develop a proactive environmental strategy, but do not explain how firms develop the *capacity* to implement such strategies.

Another research stream has examined the direct influence of exogenous influences such as institutional forces (Hoffman, 1999), stakeholder pressures (Buisse & Verbeke, 2003; Henriques & Sadosky, 1999, Kassinis & Vafeas, 2006), industry growth (Russo & Fouts, 1997), and regulations (Marcus & Geffen, 1998; Majumdar & Marcus, 2001) on the willingness of firms to develop a proactive environmental strategy. Recently, literature from the resource-based view of the firm (RBV) has called not only for an integrated analysis of the influence of exogenous variables on organizational capabilities (Barney 2001; Priem & Butler, 2001a, 2001b), but also for an examination of how such variables have a moderating effect on organizational capacity, via the deployment of organizational capabilities, to implement

environmental strategies (e.g., Aragón-Correa & Sharma, 2003). Among the few studies examining the moderating effect of exogenous variables on environmental strategy are Russo and Fouts' use of industry growth as a control variable in examining the link between internal organizational processes and pollution prevention strategies and Marcus and Geffen's longitudinal study of how regulatory and market forces interact with internal organizational factors to generate proactive environmental strategies.

Thus our understanding of a firm's willingness to develop a proactive environmental strategy needs to be complemented by, 1) The identification of externally focused capabilities that enable an organization to integrate external information and learning with internal knowledge to build a capacity for implementing such a proactive strategy; and, 2) The moderating effect of exogenous factors in the general business environment on the deployment of such capabilities.

We chose to address the above research issues in the services sector given the rapid growth and importance of this sector in developed economies,¹ the low attention that services have traditionally received from the organization and the natural environment literature, and the differences between services and manufactured goods (e.g., Skaggs & Youndt, 2004). The service sector impacts the natural environment in complex ways, even though its impacts are less visible as compared to those of, for example, the chemical and utility industries. Service industries, due to their close and direct interface with consumers and other stakeholders, may also face different intensities of external pressures for adopting proactive environmental strategies. We focus on an under-researched service sector – ski resorts – on two continents and in 12 countries in North America and Europe. Ski resorts are representative of the increasing trends of global homogenization, usually adopting similar business models and facilities across countries. The ski industry also shares many strategic and environmental features with other service activities, especially with those in the retailing and leisure industries.

Our study contributes to the RBV literature by showing the importance of organizational capabilities in developing a firm's capacity for generating a proactive strategy. We focus on the importance of externally focused capabilities in generating proactive environmen-

tal strategies in the service sector and answer calls in the literature to illuminate how an important contingency (i.e., managerial perceptions of uncertainty) moderates the likelihood of the deployment of these capabilities to generate a proactive strategy (e.g., Barney, 2001; Priem & Butler, 2001a, 2001b).

The Research Context

Firms derive competitive advantage not only from the acquisition and/or generation of unique and heterogeneous tangible and intangible assets, but also, and more importantly, from their ability to integrate and deploy these assets as capabilities in a causally ambiguous, socially complex, and inimitable manner (Amit & Schoemaker, 1993; Barney, 1991; Wernerfelt, 1984). Capabilities are generated internally, externally, and via a mix of internal and external assets and influences (Teece, Pisano, & Shuen 1997; Grant, 1998). Some capabilities are mainly embedded in routines and processes that are focused toward external constituents and the general business environment to help the firm maintain a strategic fit with its environment. Others consist more of routines and processes to generate and diffuse knowledge and learning within the organization to increase efficiencies, improve products, and reduce costs. This categorization is similar to "inside-out" and "outside-in" capabilities (Moorman & Slotegraaf, 1999), internal and external learning (e.g., Bierly & Chakrabarti, 1996; Roth & Jackson, 1995), fan-out and fan-in capabilities (Hart & Sharma, 2004), and external and internal integrative capabilities (Verona, 1999) discussed in the literature.

Service industries differ from manufacturing industries mainly on the high degree of customer interaction in the production of services and the difficulty of maintaining a competitive rate of technical innovations due to the simpler technologies and their easier visibility and imitability (Skaggs & Youndt, 2004; Song, Benedetto, & Lisa, 1999). In this context, the capacity to identify, capture, absorb, and integrate external resources may enable the firm to develop the needed strategies quickly, leading to internal flexibility, cost reduction, and innovation (Verona, 1999; Zahra & Nielsen, 2002). The capabilities involved in problem solving with customers, suppliers, competitors, regulators, communities, nongovernmental organizations (NGOs), and other stakeholders, or in comprehending technological change, are also sources of external learning (e.g., Schroeder, Bates, & Junttila, 2002). These capabilities thereby can generate possible solutions to manage the complex interface between firms and their natural environment (Buyse & Verbeke, 2003; Henriques & Sadorsky, 1998; Kassinis & Vafeas, 2002).

In the ski resort sector, which is the context of our research, the interaction between a firm and its customers and other stakeholders occurs within mountain habitats that attract both positive (jobs and economic development) and negative (raised cost of living, social inequity, crowding, and deterioration of ecosystems) attention from local communities and concerned NGOs. Therefore, our study focuses on the externally-focused capabilities that will help firms proactively detect evolving trends in the general business environment and engage stakeholders such as consumers, local communities, and NGOs to generate knowledge about balancing customer utility, economic development, community welfare, financial performance, and ecological conservation. The environmental innovations in this industry are likely to focus on products and processes in close consultation with these stakeholders and often supported by technological innovations developed by suppliers (Marcus & Geffen, 1998). Due to the technological simplicity of services and the close interaction of stakeholders with the firm, stakeholders can more easily understand the environmental impacts of the firm's services, processes, and operations. Therefore, in the ski industry context, we chose to focus on the influence of externally focused capabilities on the generation of a firm's capacity for developing a proactive environmental strategy.

Moreover, managerial perceptions of the characteristics of the business environment (Milliken, 1987) are likely to influence the extent to which their firms will deploy organizational capabilities for generating proactive environmental strategies, and even more so, for externally focused capabilities (Aragón-Correa & Sharma, 2003). The effects of perceived uncertainty in the general business environment have been emphasized in the strategy literature (e.g., Dickson & Weaver, 1997; Tan & Litschert, 1994) and highlighted in the environmental literature (e.g., Russo & Fouts, 1997). Evolving technologies, regulations, and stakeholder expectations related to a firm's environmental impacts creates an uncertain business environment, affecting the capabilities that managers will deploy to manage this uncertainty for generating proactive environmental strategies.

Accordingly, in this study we undertook two tasks. First, based on a review of the organization and the natural environment literature, we identified and tested for the influence of externally focused capabilities in generating a proactive environmental strategy. Second, we tested for the moderating effects of managerial perceptions of uncertainty in the firm's general business environment on the relationships between these specific organizational capabilities and environmental strategy.

Hypotheses

The organization and the natural environment literature identify several capabilities that accompany a proactive environmental strategy. These include organizational learning, shared vision, cross-functional integration, stakeholder engagement, strategic proactivity, and continuous innovation, (e.g., Aragón-Correa, 1998; Christmann, 2000; Hart, 1995; Klassen & Whybark, 1999; Marcus & Geffen, 1998; Russo & Fouts, 1997; Sharma & Vredenburg, 1998). Strategic proactivity is embedded in a set of routines and processes that allow a firm to maintain strategic leadership via constant outside-in knowledge generation about the business environment and competitors' strategies. This capability complements the externally focused capabilities of engagement of stakeholders for generating consultative ideas and for developing innovative solutions to environmental problems (Marcus & Geffen). Conversely, internal learning processes require capabilities for cross-functional integration in accordance with a shared mission or vision (Hart; Marcus & Geffen).

While all these capabilities vary in terms of the degree of their internal versus external focus, as discussed in the previous section, we examine externally focused capabilities as they are relevant to ski resorts for absorbing knowledge from stakeholders and the general

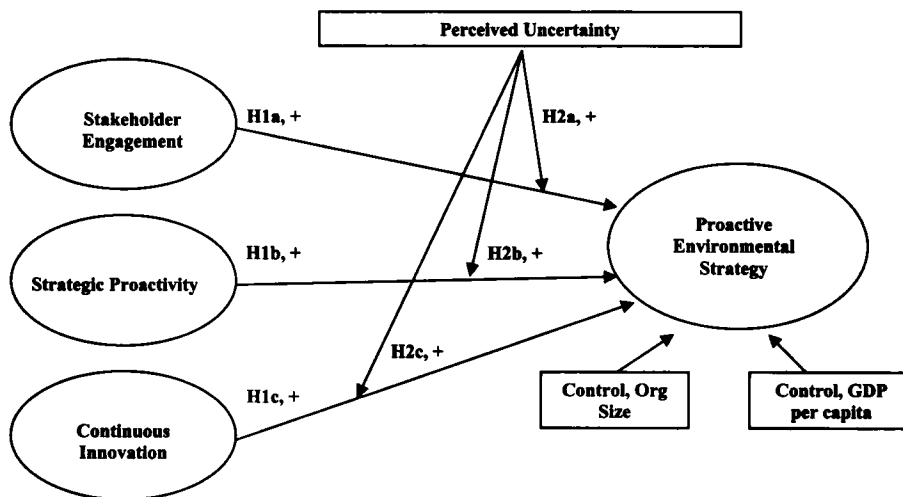
business environment in order to generate proactive environmental strategies. Moreover, externally focused capabilities are also more relevant for firms seeking to manage uncertainty in the general business environment. We outline why three externally focused organizational capabilities – stakeholder engagement, strategic proactivity, and continuous innovation – influence an individual firm's capacity in the ski sector to develop a proactive environmental strategy. Figure 1 represents our model.

Stakeholder Engagement

Hart (1995) defined stakeholder engagement as an organizational capability to learn from suppliers and customers in understanding product life cycles and designing environmentally friendly products and services. Sharma and Vredenburg (1998) expanded this definition to include a firm's ability to develop collaborative relationships with a wide variety of economic and non-economic stakeholders to find solutions to environmental problems. This wider definition has been adopted by Buysee and Vrebeke (2002) and is also the definition we adopt.

While corporations have developed extensive knowledge about improving their economic performance, they are still trying to understand better ways to reduce their negative social and environmental impacts. These

Figure 1. The moderating influence of uncertainty on the relationship between capabilities and proactive environmental strategy



impacts are often reflected in context-specific stakeholder pressures along a firm's value chain. Conflicting stakeholder pressures have been shown to influence corporate environmental strategies (Buysse & Verbeke, 2002; Henriques & Sadosky, 1999; Kassinis & Vafeas, 2002). Collaborating with a wide variety of social, environmental, and economic stakeholders in finding solutions to environmental problems can help a firm develop a more proactive approach toward anticipating and developing an environmental strategy.

For example, the engagement of suppliers and customers enables a firm to jointly analyze product life cycles, design products and services for the environment, and become more effective stewards of the natural environment (Hart, 1995). Similarly, searching for outside talent, technology, and ideas to resolve environmental problems helps firms acquire capabilities from suppliers to develop proactive environmental practices (Marcus & Geffen, 1998). Even the engagement of adversarial, distant, and less visible stakeholders can generate insights and learning that may lead to proactive approaches for designing environmentally-friendly products, processes, and business models (Hart & Sharma, 2004). This is relevant for ski resorts that face considerable adversarial pressures from local communities concerned about the increases in real estate and retail prices following development of the ski resort as well as for environmental NGOs who are concerned about damage to mountain habitats. A Colorado resort that we visited had set up regular stakeholder forums to discuss social and environmental issues of concern and had funded a multistakeholder taskforce to resolve complex problems so that the benefits of economic development were also accompanied by solutions for problems of homelessness, unemployment, poverty, and ecological preservation. This resort had hired members of the local community not only to advise on environmental preservation but also to conduct guided nature tours of the resort's eco-initiatives for visitors. Such stakeholder forums provided managers with information, inspiration, and the motivation to undertake proactive environmental initiatives even if these were not explicitly demanded in the forums.

Firms whose managers view a wide range of their stakeholders as important are more likely to develop proactive environmental strategies as compared to those that focus on narrow sets (Buysse & Verbeke, 2003; Henriques & Sadosky, 1999). These studies also find that environmentally proactive firms respond to their stakeholders by developing the policies and resources needed to actively manage their concerns because an ability to manage stakeholder pressures is a key indicator of organizational effectiveness (Hosmer, 1994; Venkatraman & Ramanujan, 1986). It is by recognizing the

conflicting economic, social, and environmental concerns of a wide stakeholder set and responding by creating processes and allocating resources that a firm can generate proactive environmental strategies. Therefore,

Hypothesis 1a: The greater a firm's capability in stakeholder engagement, the greater the firm's capacity to develop a proactive environmental strategy.

Strategic Proactivity

The strategic posture of a firm has been found to influence its strategy toward emerging issues (e.g., Miles & Snow, 1978). Firms with a strategically proactive stance develop entrepreneurial, engineering, and administrative processes oriented to integrate external information and opportunities (Miles & Snow). Aragón-Correa (1998) developed ideas about this capability by suggesting that certain strategic postures represented organizational competences and found that firms maintaining a "prospector" posture exhibited proactive environmental strategies. We define this capability as embedded in a firm's routines and processes designed to maintain a leadership position via monitoring the external environment including the competitors' strategies in competition.²

Firms with a strategic proactivity capability develop processes and routines to recognize ideas in order to actively seize and capitalize on new opportunities rather than merely react to change. This involves the early identification of new opportunities for technological leadership (Dvir, Segev, & Shenhar, 1993), the facilitation of speedy response, and the adoption of organizational structures and processes that reduce uncertainty in managing strategic issues (Veliyath & Shortell, 1993).

Managing the uncertainties and opportunities surrounding changing societal expectations around environmental issues, evolving regulations, new technologies, and corporate environmental impacts requires managers to explore new routines for making decisions, performing tasks, and deploying resource combinations. Such exploration especially involves developing different interpretations of new and existing information in the light of new understandings of events (Marcus & Geffen, 1998; Sharma, 2000). Experimentation with new decision parameters (environmental impacts) can lead to major changes in norms, values, and frames of reference (Shrivastava & Mitroff, 1982).

To illustrate, a ski resort in Utah that we visited has a reputation for being generally innovative ecologically in its business processes. In recent years, this resort has extended this leadership to reducing its environmental

impacts by sending its managers to environmental conferences and bringing in external consultants to train its employees. Its managers have travelled all over the world to visit resorts with a reputation for being environmentally innovative. They constantly monitor competitor practices and technological trends to maintain industry leadership. This resort is an industry leader in the use of renewable energy, new eco-efficiency initiatives, and technologies to reduce chemical use and habitat damage. Therefore,

Hypothesis 1b: The greater a firm's capability in strategic proactivity, the greater the firm's capacity to develop a proactive environmental strategy.

Continuous Innovation

Applying environmental criteria into corporate decisions requires resolving conflicts between economic, social, and environmental criteria by exploring new resource combinations and deploying existing resources in new ways (Hart, 1995; Shrivastava, 1995). These may range from incremental improvements in processes and products to reduce negative social/environmental impacts, to disruptive products and business models. Examples of disruptive innovations in business models include Interface's switch to closed loop material use by leasing 'floor comfort' instead of selling virgin carpets and Grameen Bank's low-cost model of empowering poor rural women through microcredit without requiring collateral (Hart & Sharma, 2004). We therefore define continuous innovation as the capability embedded in a firm's processes and routines related to continuous examination of, improvement of, and reconfiguration and redesign of existing products, services, processes and business models, and the invention and creation of new products, services, technologies, and business models.

The closer the interaction with customers and other stakeholders, as in the case of the ski resort industry, the more critical the need to innovate in consultation with external groups. The outcomes may be innovation in processes (for instance, waste and energy reduction), products and services (controlling run-offs from melting artificial snow into water bodies or the transportation of the skiers in the resort using renewable energy sources), and business models (eco-tourism). As other firms may easily imitate first movers' successful innovations in the service sector (Song, Benedetto, & Lisa, 1999), it is the capability of continuously generating such innovations that contributes to a firm maintaining its lead (e.g., Li & Atuahene-Gima, 2001) in its environmental practices. Therefore,

Hypothesis 1c: The greater a firm's capability in continuous innovation, the greater the firm's capacity to develop a proactive environmental strategy.

The Moderating Influence of Perceived Uncertainty in the General Business Environment

Studies of exogenous influences on the competitive value of capabilities have suggested that the effectiveness of capabilities varies with market dynamism (Eisenhardt & Martin, 2000), uncertainty and risk in a business environment (Miller & Shamsie, 1999), changed regulatory environments (Maijoor & Van Witteloostuijn, 1996), information asymmetry between a client and a firm (Brush & Artz, 1999), and managerially perceived uncertainty, complexity, and hostility in a general business environment (Aragón-Correa & Sharma, 2003). As discussed in the theoretical background, perceived uncertainty is one of the most relevant characteristics of the general business environment in which technologies, regulations, and societal expectations are evolving (e.g., Dickson & Weaver, 1997; Russo & Fouts, 1997; Tan & Litschert, 1994).

Environmental uncertainty occurs when managers perceive their business environment, or one of its components, to be unpredictable (Dess & Beard, 1984; Milliken, 1987). For example, managers may be uncertain about the direction of future technologies, changing consumer preferences and social norms, or the operational impacts of changing regulations. Firms facing unpredictability anticipate and respond to external pressures rather than react to them (Milliken; Paine & Anderson 1987), speed-up their search for new products and processes that will help them cope with unanticipated futures (Buchko 1994), and selectively decentralize or adopt organic structures to facilitate the search for innovative ways to manage unanticipated futures (Alexander, 1991; Majumdar & Marcus, 2001; Russo & Fouts, 1997) and technologies (Shrivastava, 1995). As environmental regulations solidify and environmental practices become codified into "best practices" and universal certification systems, managerial discretion to pursue innovative strategies is curtailed.

In an uncertain business environment managers are motivated to explore for outside knowledge from stakeholders, shape administrative structures and processes to foster strategic proactivity, enable an identification of opportunities, and experiment with innovative ways to cope with unanticipated environmental futures in consultation with stakeholders. Therefore they are more likely to develop and deploy their capabilities to generate a proactive environmental strategy that will help them anticipate and respond, rather than react.

Hypothesis 2: Perceived uncertainty in a general business environment has a positive effect on the capacity of a firm to deploy its:

2a: Stakeholder engagement capability to generate a proactive environmental strategy.

2b: Strategic proactivity capability to generate a proactive environmental strategy.

2c: Continuous innovation capability to generate a proactive environmental strategy.

Research Method

We tested our hypothesized relationships in the North American and European ski resort sector, which faces serious, albeit less visible as compared to extractive industries, problems of balancing conservation and development in high mountains (UNESCO 2002). Our sampling frame was the population of 372 skiing resorts located in 12 different countries (Andorra, Austria, Canada, Finland, France, Germany, Italy, Norway, Spain, Sweden, Switzerland, and USA) that had contact addresses on their websites. Data on resorts' environmental practices, performance, and their organizational capabilities are not available from published sources for these firms. Accordingly, we developed a questionnaire after interviewing general managers or CEOs, consultants, members of environmental NGOs, and academics familiar with environmental and strategic issues in this sector. We personally administered a trial questionnaire to general managers in five European and two North American ski resorts to ensure clarity and content validity. These responses were not used in the final study.

Following accepted practice in strategy research, we collected data from CEOs owing to their holistic understanding of their resorts' strategy and business environments (e.g., Shortell & Zajac, 1990). We sent three mailings, each a month apart. We gave respondents the option of responding to the survey on our website. No significant events with the potential to externally influence our study happened during this period. We received 134 responses, for a response rate of 36.02%. The average firm size among our respondents was 148.24 (s.d. = 214.89) employees. After deleting responses with missing data our final sample size was 105. There were no significant differences between the respondents and the original population in terms of their location, size, and range of activities, or between those that responded via our website and those that mailed in their responses, or between early and late responders.

Since the data were assessments of single respondents, common method bias could have augmented relationships between the variables. However, if this were a problem, we would have obtained a single general factor to account for most of the covariance in the dependent and independent variables (Podsakoff & Organ, 1986). We performed Harman's one-factor test on items included in our regression model and found no general factor. Additionally, an advantage of the moderated hierarchical regression analysis is that common method effects are partialled out, along with main effects, before inspecting an interaction term (Pierce, Gardner, Dunham, & Cummings, 1993).

Proactive environmental strategy. Corporate environmental strategy has many components and is difficult to measure with publicly available data. Thus, while single environmental practices (such as control of a toxic chemical) have been measured with objective measures such as the TRI data in the US, corporate environmental strategy has often been measured via managerial self-perceptions (e.g., Aragón-Correa, 1998; Christmann, 2000; Sharma & Vredenburg, 1998). We developed a 29-item five-point Likert scale to assess specific environmental practices, as based on the extant literature and our initial interviews with ski resorts. The respondents reported their evaluations of their firms' environmental practices as compared to other firms in the industry. Such comparisons enabled managers to adopt an objective point of reference for self-evaluation and helped increase the precision of measurement of proactivity (1 = "none," 5 = "industry leader").

We conducted an exploratory factor analysis using the principal factor method with "promax" rotation to determine the underlying dimensions of environmental strategy. Seven factors with eigenvalues greater than one emerged. The factors were related to different groups of environmental practices, and each of the 29 environmental variables had a significant factor loading on at least one of these factors. Cronbach's alpha ranged from 0.71 to 0.86 for each factor. A confirmatory analysis of the items pertaining to the seven underlying identified factors (Table 1) showed construct independence, a good fit to the data, and convergent validity ($\chi^2 = 166.02$, $df = 98$, $p = 0.00$; GFI = 0.99; CFI = 1.0; RMSEA = 0.08). Alternative models were unambiguously rejected.

A second-order confirmatory analysis model fit the data well ($\chi^2 = 16.76$, $df = 14$, $p = 0.27$; GFI = 0.99; CFI = 0.99; RMSEA = 0.04) and all seven factors were significantly ($p < .01$) related to the second-order factor, with standardized loadings ranging from 0.60 to 0.89. Hence, the seven factors were considered indicators of a single factor, which we labeled "proactive corporate environmental strategy." The final measure was a

Table 1
Results of Confirmatory Factor Analysis of Proactive Environmental Strategy Items

Factors	Variables	Initial scale loadings (λ)*	Reliability	Final scale loadings (λ)	Reliability
Factor 1,	VAR. 8.Using nontoxic materials	.69 (18.10)	.48	.71(15.35)	.50
	VAR 11.Using reservoirs and ponds to store water during low flow periods	.68 (17.92)	.46	Eliminated item	
	VAR 12.Installing storage facilities to recapture snowmelt runoff for reuse	.66 (17.60)	.44	Eliminated item	
	VAR 13.Re-using treated wastewater	.76 (19.61)	.58	.79 (16.46)	.62
	VAR 19.Offering guests incentives for car pooling	.58 (15.80)	.34	Eliminated item	
	VAR 22.Composting organic matter	.74 (19.03)	.55	.77 (16.08)	.59
Factor 2,	VAR 6.Using recycled materials	.89 (22.56)	.79	.91(22.12)	.83
	VAR 7.Using less materials or material efficient techniques	.71 (19.60)	.51	.77(19.58)	.59
	VAR 14.Installing water efficient equipment in hotels (e.g., low flow faucets/toilets)	.82 (21.50)	.67	.83 (20.70)	.69
	VAR 21.Purchasing recycled materials or in bulk to reduce packaging	.76 (20.37)	.57	.76 (19.28)	.58
	VAR 29.Instituting accident/spill control and emergency response procedures	.62 (17.40)	.38	Eliminated item	
Factor 3,	VAR 1.Minimum disturbance to animal/plant habitats.	.69 (20.37)	.48	Eliminated item	
	VAR 2.Alternate transportation of customers from highways to resort (instead of roads)	.63 (18.77)	.40	Eliminated item	
	VAR 15.Offering linen and towel reuse programs in facilities	.77 (22.11)	.59	.79 (18.29)	.62
	VAR 16.Retrofitting lighting, insulation and energy using equipment for energy efficiency	.85 (24.08)	.73	.83 (18.63)	.70
	VAR 17.Monitoring energy use and working with utilities for peak demand mitigation	.63 (18.93)	.40	Eliminated item	
	VAR 27.Safe treatment and disposal of hazardous wastes (Used oil, batteries, etc.)	.70 (20.43)	.48	Eliminated item	
	VAR 28.Reduced purchasing of hazardous materials (solvents/paints, de-icing chemicals)	.81 (23.24)	.66	.83 (18.73)	.69
Factor 4,	VAR 18.Providing alternative energy vehicles for guests/employees	.56 (14.42)	.32	Eliminated item	
	VAR 24.Educating guests about responsible environmental practices	.69 (16.95)	.47	Eliminated item	
	VAR 25.Training employees about responsible environmental practices	.92 (19.71)	.85	.94 (15.68)	.89
	VAR 26.Encouraging employee involvement in community initiatives	.81 (18.46)	.66	.81 (15.25)	.66
Factor 5,	VAR 4.Maintaining stream vegetation buffers to improve natural filtration	.63 (14.23)	.40	Eliminated item	
	VAR 5.Programs to restore habitats	.77 (15.91)	.60	.75(12.66)	.56
	VAR 23.Reusing/Recycling materials	.88 (16.71)	.77	.90 (12.48)	.80
Factor 6,	VAR 3.Using erosion & sediment control practices (water bars, revegetation)	.75 (7.32)	.56	1.00	1.00
	VAR 1.Improving aesthetics by blending with the landscape or using earth tones	.54 (7.59)	.29	Eliminated item	
Factor 7,	VAR 9.Using renewable energy (e.g. solar, wind)	.76 (12.25)	.58	.78 (14.31)	.61
	VAR 2.Purchasing green power from utilities	.92 (12.17)	.85	.98 (15.42)	.97

(*) t values in parentheses.

weighted average of the seven factors using the standardized loadings obtained from the second-order factor analysis, and a high score was indicative of a high degree of proactivity in a ski resort's environmental strategy.

Stakeholder engagement. Following previous research analyzing stakeholder influences (Buysse & Verbeke, 2003; Cordano & Frieze, 2000; Flannery & May, 2000), we used Ajzen and Fishbein's (1980) approach to develop 18 items to generate our measure. We listed nine categories of identified stakeholders based on exploratory interviews with experts in the ski industry in North American and European contexts. We asked respondents to evaluate, on a five-point scale, the level of attention their firms paid to each category of stakeholder in organizational decision making. We calculated the average value of this capability for each firm after weighting the respondents' perceptions of the attention paid to each category of stakeholder with their evaluation (also on a five-point scale) of the importance of each stakeholder in helping them understand environmental issues facing the firm (details provided in Appendix 1). A high final score indicated a developed capability to engage stakeholders within the domain of environmental impacts. The self-weighted structure of this scale prevented confirmatory factor analysis.

Strategic proactivity. Managerial perceptions can provide more validity and practicality than other measures of a firm's entrepreneurial orientation (Lyon, Lumpkin, & Dess, 2000). We used three bipolar items from Aragón-Correa's (1998) validated scale, in which high values match organizational processes and routines for maintaining industry leadership. We inverted this pattern for the second question to avoid skewing the answers. We calculated the arithmetical mean of the ratings; a high score indicated a high degree of strategic proactivity capability ($\alpha = .73$). Details of the items used in this measure are provided in Appendix 1.

Continuous innovation. Drawing on Hart (1995), Sharma and Vredenburg (1998) and Shrivastava (1995), we asked respondents to evaluate their firms' ability to generate innovations in products, services, and processes. One item was deleted after confirmatory analysis (Hair, Anderson, Tatham, & Black, 1998) and the final scale comprised three items ($\alpha = 0.80$) rated on a five-point scale (1 = "completely disagree," 5 = "completely agree"). Details of the items used in this measure are provided in Appendix 1.

Perceived general business environment. We drew on Li and Atuahene-Gima's (2001) ten items describing the competitive business environment (1 = "completely disagree," 5 = "completely agree") to develop this

measure. Our exploratory factor analysis yielded three factors with eigenvalues greater than one, which we related to different dimensions of business environment. Two items related to perceived environmental uncertainty loaded on the first factor. The Cronbach's alpha had an acceptable value of 0.68. Details of the items used in this measure are provided in Appendix 1.

Control variables. We used the number of employees as a proxy for organization size and computed the total number of employees on the basis of their effective working time (e.g., 0.5 equaled one full-time employee for six months or part time for a year) based on the OECD's system to compute working populations (OECD, 2002). We did not use annual sales as an indicator of size because pricing varies by country. Since the level of country affluence and development may influence the institutional context for environmental consciousness and regulations as well as help in understanding the strategic differences between the services (Song et al., 1999), we also controlled for the country in which a resort was situated by using gross domestic product (GDP) per capita. The size and the relative affluence of the consumers in a ski resort's country (reflected by GDP per capita) might affect a ski resort's capacity to develop a proactive environmental strategy. Finally, the ability of each country to protect the natural environment may influence the corporate environmental strategies. We controlled for this effect using the published data of the Environmental Sustainability Index -ESI (Esty et al., 2005). This index is proposed by the Yale Center for Environmental Law & Policy "to benchmark the ability of nations to protect the environment (. . .) by integrating 76 data sets (tracking natural resource endowments, past and present pollution levels, environmental management efforts, and a society's capacity to improve its environmental performance) into 21 indicators of environmental sustainability". The ESI is the equally weighted average of these 21 indicators. Higher ESI scores suggest better environmental stewardship.

Analysis and Results

We used moderated hierarchical regression analysis (Cohen & Cohen, 1983) introducing moderator effects as two-way interaction terms in the final step. We also tested for other forms of nonlinear relationships using hierarchical significance tests (Jaccard et al., 1990, p. 50). The results of these tests were statistically nonsignificant. We computed interactions by multiplying each organizational capability with perceived general business uncertainty. To avoid multicollinearity, we mean-centered both independent and moderator variables (e.g.,

Venkatraman, 1989) prior to creating the interaction terms. The variance inflation factors (VIFs) associated with each regression coefficient were well below the recommended cut off of 10 and VIF values were not considerably larger than 1 (Neter, Wasserman, & Kutner, 1990, pp. 409–410). The VIF values for last-step range from 1.02 to 1.8, and the mean VIF was 1.40. This evidence suggests that there were no multicollinearity problems. The correlations between our independent and dependent variables were high. To check for discriminant validity we introduced all items in one factor analysis. We obtained a different factor for each dependent and independent variable. Table 2 reports the means, standard deviations, and correlations between the analyzed variables. Table 3 shows the results of the regression analysis.

In step 1, we regressed proactive corporate environmental strategy on the control variables. In step 2, we introduced perceived environmental uncertainty. In step 3, we introduced organizational capabilities. The statistically significant increment in the variance explained ($\Delta R^2 = .46$) showed the strong influence of the organizational capabilities on proactive corporate environmental strategy. Finally, in step 4, we added the interaction terms. The adjusted R^2 for this model was 0.71. The difference between the R^2 s for models 4 and 3 was statistically significant and reflects the significant moderating effect. Significant coefficients for the interaction variables also show the existence of moderator effects (Cohen & Cohen, 1983; Jaccard et al., 1990).

The capabilities of strategic proactivity and continuous innovation showed positive and significant effects on environmental strategy at the average of the other variables. These results support Hypotheses 1b and 1c. The influence of the capability of stakeholder engagement

was not significant for our sample, thereby not supporting Hypothesis 1a. Table 3 also shows the direct influence of perceptions of the uncertainty of the general business environment on a proactive environmental strategy at the average level of the other variables. This effect was not hypothesized. The control variables do not have a significant effect on our sampled firms.

Given the significance and strength of the moderating effect of perceived uncertainty on stakeholder engagement and continuous innovation, we undertook additional analysis to illustrate the nature of the moderation. We evaluated the effects of each capability on a proactive corporate environmental strategy at low, average, and high values of the perceived uncertainty, defining low as one standard deviation below the mean, and high as one standard deviation above the mean (Jaccard et al., 1990). We first plotted all the interactions using procedures outlined in Cohen and Cohen (1983) to visually check the nature of the moderation. Figure 2 illustrates one of these interactions: the influence of environmental uncertainty on the relationship between continuous innovation and proactive corporate environmental strategy. This figure shows that perceived uncertainty positively moderates the association of continuous innovation and proactive environmental strategy, and the association is stronger for respondents with perceptions of high environmental uncertainty. We then calculated the regression coefficients for the impact of each organizational capability on proactive environmental strategy for different levels of the perceived general business environment uncertainty (Jaccard et al., 1990). Table 4 shows the results of these regressions for all the significant moderator effects.

Table 4 shows that perceived environmental uncertainty moderates the relationship between environmental strategy and the capabilities of stakeholder engagement

Table 2
Means, Standard Deviations, and Correlations

Variable	n	Mean	s.d.	1	2	3	4	5	6	7
1 Proactive corporate environmental strategy	105	2.95	.77							
2 Firm size	105	153.82	183.39	.23**						
3 Environmental abilities of the country	105	56.14	6.32	.20*	-.03					
4 GDP per capita	105	30528.41	5306.2	.06	.15	-.05				
5 Uncertainty	105	3.42	.90	.50***	.19*	-.04	.09			
6 Strategic proactivity	105	3.28	.98	.58***	.26**	.10	.14	.27***		
7 Stakeholder engagement	105	2.74	.96	.45***	.19*	-.07	.13	.20*	.38***	
8 Continuous innovation	105	3.34	.92	.74***	.07	.11	-.03	.32***	.39***	.44***

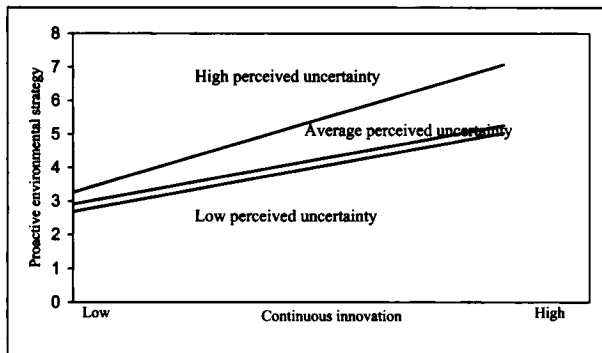
* $p < .10$ ** $p < .05$ *** $p < .01$.

Table 3
Results of Moderated Multiple Regression Analysis^a

Variable	Step 1		Step 2		Step 3		Step 4	
Intercept	2.95***	(.07)	2.95***	(.06)	2.95***	(.06)	2.92***	(.04)
Firm size	.00*	(.00)	.00	(.00)	.00	(.00)	.00	(.00)
Environmental abilities of the country	.03**	(.01)	.03***	(.01)	.02***	(.01)	.02***	(.01)
GDP per capita	.00	(.00)	.00	(.00)	.00	(.00)	-.00	(.00)
General environment								
Uncertainty			.44***	(.08)	.24***	(.05)	.26***	(.05)
Organizational capabilities								
Stakeholder engagement					.06	(.05)	.08	(.05)
Continuous innovation					.46***	(.06)	.46***	(.06)
Strategic proactivity					.20***	(.05)	.20***	(.05)
Moderation								
Uncertainty x stakeholder engagement							-.13**	(.06)
Uncertainty x continuous innovation							.12*	(.06)
Uncertainty x strategic proactivity							.09	(.06)
F	3.44**		10.50***		34.28***		27.10***	
Adjusted R ²	.07		.29		.72		.74	
Change in adjusted R ²			.22		.43		.02	

a Proactive corporate environmental strategy is the dependent variable. Values are unstandardized regression coefficients, with standard errors in parentheses. * $p < .10$ ** $p < .05$ *** $p < .01$.

Figure 2.
The moderation effect of perceived environmental uncertainty on the influence of continuous innovation



(Hypothesis 2a) and continuous innovation (Hypothesis 2c) at the average level of the other variables. The moderation effect was not significant for the relationship between strategic proactivity and environmental strategy (Hypothesis 2b). While these organizational capabilities

Table 4
Regression Analysis with Variation in Perceived Uncertainty^a

Variable	Uncertainty		
	Low	Average	High
Stakeholder engagement	.34** (.13)	.28*** (.08)	.28 (.20)
Continuous innovation	.47*** (.09)	.47*** (.09)	.76*** (.14)

a Proactive Corporate Environmental Strategy is the dependent variable. Values are unstandardized regression coefficients, with standard errors in parentheses. ** $p < .05$ *** $p < .01$.

are positively associated with a proactive environmental strategy for any level of uncertainty, the positive influence of stakeholder engagement on proactive environmental strategy is only significant at low and average levels of uncertainty. Continuous innovation has a stronger influence on proactive environmental strategy when managers perceive uncertainty to be high and is significant, but less so, for low and average levels of uncertainty, supporting Hypothesis 2c.

Discussion

Summary

Our results confirm that organizational capabilities are significantly associated with a firm's capacity to generate proactive strategies for managing its firm's interface with the natural environment. Therefore, managerial motivations to undertake a proactive environmental strategy (e.g., Cordano & Frieze, 2000; Ramus & Steger, 2000; Sharma, 2000) and the potential economic benefits of such strategies (e.g., Klassen & McLaughlin, 1996) need to be complemented with organizational capabilities that develop a firm's *capacity* for such strategies.

In our research context, in ski resorts where firms interact closely with consumers, local communities, and NGOs in ecologically sensitive habitats, we chose to focus on the externally oriented capabilities that firms can deploy to maintain industry leadership by engaging these stakeholders to gather knowledge and to generate innovative responses as necessary to develop proactive environmental strategies. We however accept that a proactive environmental strategy is complex and also requires the deployment of several internally focused capabilities that help firms integrate external knowledge. Our results show that firms need to deploy externally focused capabilities of strategic proactivity and continuous innovation in order to proactively manage their environmental impacts.

We did not find support for the direct influence of a stakeholder engagement capability on environmental strategy. However, managerial perceptions of uncertainty in their firm's general business environment moderate the deployment of capabilities of stakeholder engagement and continuous innovation for proactive environmental strategies. As predicted, higher uncertainty increases the influence of continuous innovation on proactive environmental strategy. However, stakeholder engagement is more relevant for our sample when managers perceive less environmental uncertainty. It can be speculated that this may reflect that the ski resorts are currently not grappling with uncertain futures that require radical innovations or business model redefinitions for a more sustainable use of mountain habitats. Rather, they are mainly undertaking incremental innovations to reduce known environmental impacts for which they are not seeking a great deal of information from external stakeholders.

The lack of influence of the relative level of consumer affluence (control variable for country), as measured by GDP, indicates the relative importance of

corporate capabilities as moderated by perceived uncertainty in a firm's immediate environment as compared to the contextual factors in this industry. Similarly, the lack of influence of organizational size may indicate that proactive environmental strategies may not require significant resources in this industry. Since size may increase organizational visibility, the lack of stakeholder engagement may also indicate that size is currently not a relevant factor for the analyzed sample.

Contributions to Theory

We contribute to the contingent resource-based perspective by finding empirical support for arguments that the deployment of organizational capabilities for the generation of proactive environmental strategies by firms will be influenced by how managers perceive uncertainty in their general business environment (Aragón-Correa & Sharma, 2003). We contribute to an understanding of the mechanics of the contingent conditions under which capabilities are deployed for a firm's strategy (Barney, 2001; Priem & Butler, 2001a, 2001b). Our research is a step in the direction to better understand the peculiarities of service organizations (Skaggs & Youndt, 2004) and illustrates the potential of the resource-based view to analyze the strategies of firms in the service sector.

Contributions to Practice

For managers, our results indicate the need to focus on the development of organizational capabilities to complement their willingness to respond to institutional forces in developing proactive environmental strategies. For smaller firms, capabilities may even substitute to some degree for their lack of resources. Managers in service industries especially have excellent opportunities to link closely with customers and other stakeholders to develop loyalties and legitimacy based on ecological preservation, which in turn, can lead to competitive advantage. In fact, tapping the experience and knowledge from stakeholders such as customers, suppliers, or environmental activists may be useful sources of improvements for services in ecologically sensitive habitats.

Limitations and Future Research Directions

Although CEO perceptions are widely accepted as accurate reflections of corporate strategy, given their holistic and deep knowledge about their firms (Shortell & Zajac, 1990), multiple informant studies would further enhance our understanding about specific influences of the general business environment in individual contexts.

Moreover, case studies could map levels of routines and capability development that surveys cannot reveal. Experimental research design and longitudinal strategies will be also useful in the future to evaluate the interaction between – and integration of – several organizational capabilities in the presence of multiple influences in a general business environment, and to comparatively analyze variations in levels of managerial perceptions of uncertainty and in the deployment of organizational capabilities over time.

Moreover, as Aragón-Correa and Sharma (2003) argue, capability deployment may vary depending on the type of environmental uncertainty that managers may perceive. These include state uncertainty, decision response uncertainty, and organizational effect uncertainty, as well as complexity, hostility, or munificence in the environment. Modeling the contingent effects of these various influences is challenging but the logical next step in more sophisticated empirical studies.

Conclusion

During the last couple of decades, the resource-based view of the firm has been a useful and influential research stream in the field of strategic management. The literature has evolved from a generic rationale for the strategic importance of organizational resources, to the identification of specific resources and capabilities that can help firms generate competitive advantage, to arguments and rationales for examining the contingent effects of the business environment on capability development and deployment. Recently, empirical studies adopting mid-range theoretical approaches have tackled contingent resource-based perspectives. Our study adds to this literature by modeling the contingent effects of uncertainty on the relationship between capabilities and organizational strategy.

Our study adds to the literature on organizations and the natural environment by showing that a firm's willingness to undertake a proactive environmental strategy needs to be supported by certain organizational capabilities, but the specific capabilities for developing such strategies may vary in importance depending on the type of industry the firm is in. A manufacturing firm that does not directly extract its inputs from the natural environment and sells only to industrial customers may need to deploy more internally focused capabilities of continuous improvement and learning in order to generate environmental strategies of eco-efficiency and clean technologies. However, a consumer product firm or a service oriented firm will need to deploy externally focused capabilities that deploy routines that help it maintain leadership in its environmental strategy by

engaging stakeholders, understanding the evolution of their environmental concerns, and continuously innovating to respond to such concerns. It must be noted however, that such industry distinctions are a matter of degree since stakeholder willingness to engage with the firm is a dyadic process. For example, some NGOs such as Greenpeace refuse to engage with the oil and gas industry. Therefore, some industries are able to deploy such capabilities to a greater extent as compared to others depending on the level of willingness of stakeholders to engage firms in these industries and the technological advancements in these industries that permit meaningful changes in products, processes, and/or business models.

Notes

- 1 In the late 1990s, the service sector represented 70 to 80% of US employment and GDP. During the last decade, the share of US GDP accounted for by service industries increased from \$2 trillion to about \$4 trillion, while the manufacturing industries remained between \$1 trillion and \$1.5 trillion (Song, Benedetto, & Zhao, 1999).
- 2 We thank an anonymous reviewer for helping us clarify the definition of this capability.

References

- Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ., Prentice-Hall.
- Alexander, J.A. (1991). Adaptive change in corporate control practices. *Academy of Management Journal*, 34, 162–193.
- Amit, R., & Schoemaker, P.J. (1993). Strategic assets and organizational rent. *Strategic Management Journal*, 14, 33–45.
- Andersson, L.M., & Bateman, T.S. (2000). Individual environmental initiative, Championing natural environmental issues in U.S. business organizations. *Academy of Management Journal*, 43, 548–570.
- Aragón-Correa, J.A. (1998). Strategic proactivity and firm approach to the natural environment. *Academy of Management Journal*, 41, 556–567.
- Aragón-Correa, J.A., & Sharma, S. (2003). A contingent resource-based view of proactive corporate environmental strategy. *Academy of Management Review*, 28, 71–88.
- Bansal, P. (2003). From issues to actions, The importance of individual concerns and organizational values in responding to natural environmental issues. *Organization Science*, 14, 510–527.
- Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99–120.
- Barney, J.B. (2001). Is the resource-based “view” a useful perspective for strategic management research? Yes. *Academy of Management Review*, 26, 41–56.



- Bierly, P., & Chakrabarti, A. (1996). Generic knowledge strategies in the US pharmaceutical industry. *Strategic Management Journal*, 17, 123–135.
- Brush, T., & Artz, K.W. (1999). Toward a contingent resource-based theory, The impact of information asymmetry on the value of capabilities in veterinary medicine. *Strategic Management Journal*, 20, 223–250.
- Buchko, A.A. (1994). Conceptualization and measurement of environmental uncertainty, An assessment of the Miles and Snow perceived environmental uncertainty scale. *Academy of Management Journal*, 37, 410–425.
- Buysse, K., & Verbeke, A. (2003). Proactive environmental strategies, A stakeholder management perspective. *Strategic Management Journal*, 24, 453–470.
- Christmann, P. (2000). Effects of “best practices” of environmental management on cost advantage, The role of complementary assets. *Academy of Management Journal*, 43, 663–680.
- Cohen, J., & Cohen, P. (1983). *Applied Multiple Regression/Correlation Analysis for the Behavioural Sciences*. 2nd ed. Hillsdale, NJ, Lawrence Erlbaum.
- Cordano, M., & Frieze, I.H. (2000). Pollution reduction preferences of US environmental managers, Applying Ajzen's theory of planned behavior. *Academy of Management Journal*, 43, 627–641.
- Dess, G., & Beard, D. (1984). Dimensions of organizational task environments. *Administrative Science Quarterly*, 29, 52–73.
- Dickson, P.H., & Weaver, K.M. (1997). Environmental determinants and individual-level moderators of alliance use. *Academy of Management Journal*, 40, 404–423.
- Dvir, D., Segev, E., & Shenhar, A. (1993). Technology's varying impact on the success of strategic business units within the Miles and Snow typology. *Strategic Management Journal*, 14, 157–165.
- Egri, C.P., & Herman, S. (2000). Leadership in the North American environmental sector, Values, leadership styles, and contexts of environmental leaders and their organizations. *Academy of Management Journal*, 43, 571–604.
- Eisenhardt, K.M., & Martin, J.A. (2000). Dynamic capabilities, What are they? *Strategic Management Journal*, 21(Special Issue), 1105–1121.
- Esty, D.C., Levy, M., Srebotnjak, T., & de Sherbinin, A. (2005). *2005 Environmental Sustainability Index: Benchmarking National Environmental Stewardship*. New Haven, Yale Center for Environmental Law & Policy.
- Flannery, B.L., & May, D.R. (2000). Environmental ethical decision making in the U.S. metal-finishing industry. *Academy of Management Journal*, 43, 642–662.
- Grant, R.M. (1998). *Contemporary Strategy Analysis: Concepts, Techniques, Applications*, 3rd ed. Cambridge, MA., Basil Blackwell.
- Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1998). *Multivariate Data Analysis*, 5th ed. Englewood Cliffs, NJ, Prentice-Hall.
- Hart, S.L. (1995). A natural-resource-based view of the firm. *Academy of Management Journal*, 20, 874–907.
- Hart, S.L., & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business Strategy and the Environment*, 5, 30–37.
- Hart S.L., & Sharma, S. (2004). Engaging fringe stakeholders for competitive imagination. *Academy of Management Executive*, 18(1), 7–18.
- Henriques, I., & Sadorsky, P. (1999). The relationship between environmental commitment and managerial perceptions of stakeholder importance. *Academy of Management Journal*, 42, 87–99.
- Hoffman, A.J. (1999). Institutional evolution and change, Environmentalism and the U.S. chemical industry. *Academy of Management Journal*, 42, 351–371.
- Hosmer, L.T. (1994). Strategic planning as if ethics mattered. *Strategic Management Journal*, 15, 17–34.
- Jaccard, J., Turrisi, R., & Wan, C.K. (1990). *Interaction Effects in Multiple Regression*. Newbury Park, CA., Sage Publications.
- Judge, W.Q., & Douglas, T.J. (1998). Performance implications of incorporating natural environmental issues into the strategic planning process, An empirical assessment. *Journal of Management Studies*, 35, 241–262.
- Kassinis, G.N., & Vafeas, N. (2002). Corporate boards and outside stakeholders as determinants of environmental litigation. *Strategic Management Journal*, 23, 399–415.
- Kassinis, G.N., & Vafeas, N. (2006). Stakeholder pressures and environmental performance. *Academy of Management Journal*, 49, 145–159.
- Klassen, R.D., & McLaughlin, C.P. (1996). The impact of environmental management on firm performance. *Management Science*, 42, 1199–1214.
- Klassen, R.D., & Whybark, D.C. (1999). The impact of environmental technologies on manufacturing performance. *Academy of Management Journal*, 42, 599–615.
- Li, H., & Atuahene-Gima, K. (2001). Product innovation strategy and the performance of new technology ventures in China. *Academy of Management Journal*, 44, 1123–1135.
- Lyon, D.W., Lumpkin, G.T., & Dess, G.G. (2000). Enhancing entrepreneurial orientation research, Operationalizing and measuring a key strategic decision making process. *Journal of Management*, 26, 1055–1085.
- Maijor, S., & Van Witteloostuijn, A. (1996). An empirical test of the resource-based theory, Strategic regulation in the Dutch audit industry. *Strategic Management Journal*, 17, 549–569.
- Majumdar, S.K., & Marcus, A.A. (2001). Rules versus discretion, The productivity consequences of flexible regulation. *Academy of Management Journal*, 44, 170–179.
- Marcus, A.A., & Geffen, D. (1998). The dialectics of competency acquisition, Pollution prevention in electric generation. *Strategic Management Journal*, 19, 1145–1168.
- Miles, R., & Snow, C. (1978). *Organizational Strategy, Structure and Process*. New York, McGraw Hill.
- Miller, D., & Shamsie, J. (1999). Strategic responses to three kinds of uncertainty, Product line simplicity at the

- Hollywood film studios. *Journal of Management*, 25, 97–116.
- Milliken, F.J. (1987). Three types of perceived uncertainty about the environment, State, effect, and response uncertainty. *Academy of Management Review*, 12, 133–143.
- Moorman, C., & Slotegraaf, R.J. (1999). The contingency value of complementary capabilities in product development. *Journal of Marketing Research*, 36, 239–257.
- Neter, J., Wasserman, W., & Kutner, M. (1990). *Applied Linear Statistical Models*. Homewood, IL, Irwin.
- OECD. (2002). *OECD Employment outlook 2002*. OECD Outlooks, Organization for Economic Cooperation and Development, Paris.
- Paine, F.T., & Anderson, C.R. (1977). Contingencies affecting strategy formulation and effectiveness, An empirical study. *Journal of Management Studies*, 14, 147–158.
- Pierce, J.L., Gardner, D.G., Dunham, R.B., & Cummings, L.L. (1993). Moderation by organization-based self-esteem of role condition-employee response relationships. *Academy of Management Journal*, 36, 271–289.
- Podsakoff, P.M., & Organ, D.W. (1986). Self reports in organizational research, Problems and prospects. *Journal of Management*, 12, 531–544.
- Priem, R.L., & Butler, J.E. (2001a). Is the resource-based “view” a useful perspective for strategic management research? *Academy of Management Review*, 26, 22–40.
- Priem, R.L., & Butler, J.E. (2001b). Tautology in the resource-based view and the implications of externally determined resource value, Further comments. *Academy of Management Review*, 26, 57–66.
- Ramus, C.A., & Steger, U. (2000). The roles of supervisory support behaviors and environmental policy in employee “ecoinitiatives” at leading-edge European companies. *Academy of Management Journal*, 43, 605–626.
- Roth, A.V., & Jackson, W.E. (1995). Strategic determinants of service quality and performance, Evidence from the banking industry. *Management Science*, 41, 1720–1733.
- Russo, M.V., & Fouts, P.A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40, 534–559.
- Schroeder, R.G., Bates, K.A., & Junntila, M.A. (2002). A resource-based view of manufacturing strategy and the relationship to manufacturing performance. *Strategic Management Journal*, 23, 105–117.
- Sharma, S. (2000). Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy. *Academy of Management Journal*, 43, 681–697.
- Sharma, S., & Vredenburg, H. (1998). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. *Strategic Management Journal*, 19, 729–753.
- Shrivastava, P. (1995). Environmental technologies and competitive advantage. *Strategic Management Journal*, 16, 183–200.
- Shrivastava, P., & Mitroff, I.I. (1982). Frames of reference managers use, A study in applied sociology of knowledge. In R. Lamb (Ed), *Advances in Strategic Management*, pp. 161–182. Greenwich, CT, JAI Press.
- Shortell, S.M., & Zajac, E.J. (1990). Perceptual and archival measures of Miles and Snow’s strategic types, A comprehensive assessment of reliability and validity. *Academy of Management Journal*, 33, 817–832.
- Skaggs, B.C., & Youndt, M. (2004). Strategic positioning, human capital, and performance in service organizations, A customer interaction approach. *Strategic Management Journal*, 25, 85–99.
- Song, X.M., Benedetto, C.A.D., & Lisa, Y. (1999). Pioneering advantages in manufacturing and service industries, Empirical evidence from nine countries. *Strategic Management Journal*, 20, 811–836.
- Tan, J.J., & Litschert, R.J. (1994). Environment-strategy relationship and its performance implications, An empirical study of the Chinese electronics industry. *Strategic Management Journal*, 15(1), 1–20.
- Teece, D.J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18, 509–533.
- UNESCO. (2002). *UNESCO in the mountains of the world*, edited in CDrom by UNEP-WCM and UNESCO, Paris.
- Veliyath, R., & Shortell, S.M. (1993). Strategic orientation, strategic planning system characteristics and performance. *Journal of Management Studies*, 30, 359–382.
- Venkatraman, N. (1989). The concept of fit in strategy research, Toward verbal and statistical correspondence. *Academy of Management Review*, 14, 423–444.
- Venkatraman, N., & Ramanujan, V. (1986). Measurement of business performance in strategy research, A comparison of approaches. *Academy of Management Review*, 11, 801–814.
- Verona, G. (1999). A resource-based view of product development. *Academy of Management Review*, 24(1), 132–142.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5, 171–180.
- Zahra, S.A., & Nielsen, A.P. (2002). Sources of capabilities, integration and technology commercialization. *Strategic Management Journal*, 23, 377–398.

Appendix 1

Measures of Organizational Capabilities

Continuous Innovation

1. We pay substantial attention to satisfying demands of customers.
2. Our practices have often led to improvements in product/services quality.
3. We have an advanced certification system for products/services.

Strategic Proactivity

1. Our products and services are many and very different. We are always looking for new opportunities (i.e., in very different areas in the ski industry and even in different industries).
2. The main technology of this firm is focused on having leading flexible and innovative technologies.
3. Our planning systems are very open and flexible to allow us to seize new opportunities.

Stakeholder Engagement

<u>A, Interest in natural environment</u>		<u>B, Attention paid</u>
1 2 3 4 5	Local communities	1 2 3 4 5
1 2 3 4 5	Shareholders	1 2 3 4 5
1 2 3 4 5	NGOs and Environmental groups	1 2 3 4 5
1 2 3 4 5	Conservation and Wildlife Protection groups	1 2 3 4 5
1 2 3 4 5	Government agencies	1 2 3 4 5
1 2 3 4 5	Employees	1 2 3 4 5
1 2 3 4 5	Media	1 2 3 4 5
1 2 3 4 5	Customers	1 2 3 4 5
1 2 3 4 5	Private landowners	1 2 3 4 5

Measures of Uncertainty in the General Business Environment

1. Factors in the business environment that can affect our firm change often (in terms of technology, customer preferences, suppliers, regulations, etc.).
2. The changes in our business environment are easily predictable.
3. Our firm lacks enough resources to develop competitive responses to the changes in the business environment.
4. It is very difficult to have a clear idea about the consequences on our business of our managerial decisions in responding to changes in the business environment.