

The Pennsylvania State University

The Graduate School

College of Agricultural Sciences

**THE EFFECTS OF RESOURCES AND INSTITUTIONAL
PRESSURES ON CORPORATE ENVIRONMENTALISM**

A Dissertation in

Forest Resources

by

Ruthairat Protpakorn

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Submitted in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

December 2010

The dissertation of Ruthairat Protpakorn was reviewed and approved* by the following:

Judd H. Michael

Professor of Wood Products Business Management

Dissertation Advisor

Chair of Committee

Paul M. Smith

Professor of Forest Products Marketing

Nicole R. Brown

Associate Professor Wood Chemistry

Timothy G. Pollock

Professor of Management

Michael G. Messina

Professor and Director of School of Forest Resources

* Signatures are on file in the Graduate School.

ABSTRACT

While previous research on organizations and the natural environment provides a rationale for general corporate environmental responses, questions remain regarding why firms facing similar institutional pressures respond differently to environmental issues. On one hand, organizations have control over their corporate strategies. Firms can utilize their resources and capabilities to gain a competitive advantage. On the other hand, firms' flexibility of action is limited by external forces.

I argue that the differences in firms' resources and capabilities affect the extent to which firms integrate environmental issues into their planning processes and strategies. The awareness, sense-making, and perceptions of social phenomena, in this case the green building movement, also create social framing that influences how firms respond and react to environmental issues. In sum, this research offers a more comprehensive examination of the resource-based view (RBV) and institutional perspectives in the context of business and the environment.

A field study was employed to investigate how organizations respond to environmental issues from the perspectives of a resource-based view and institutional theory. A quantitative research method was employed in this study. A web-based survey was used to investigate the phenomenon of corporate environmentalism within firms.

Knowing more about the resources and capabilities of firms and about the institutional pressures relative to corporate environmentalism could help firms formulate and integrate environmental initiatives into their strategies. This study can also benefit the broader research domain of business and the natural environment by providing insight into what factors contribute to perceptions surrounding corporate environmentalism in organizations.

This research provides three key contributions. First, the research aims to provide a more comprehensive examination of how the institutionalization of environmental practices and standards originated by the green building movement leads to changes in organizational forms and structures. This extends institutional theory from an environmental perspective. Second, this research aims to provide a better understanding of how firms' resources and capabilities as well as the institutional pressures they face affect changes in firms' corporate environmentalism. The argument presented by this key contribution is that both resource-based and institutional factors, as well as the relationship between them, affect firms' corporate environmentalism. Third, the empirical results of this study provide pragmatic answers to key questions surrounding the fast-growing “green-certified” residential building industry.

This research is cross-disciplinary, bridging three disciplines: management and organization theory, sustainable development, and forest products. The domain of forest products serves as the context of the investigation, while theoretical arguments are drawn from the research domains of management and organization theory as well as business and sustainable development. In addition, practical implications are drawn from green building programs and the residential housing value chain. The desired outcome of this research is to contribute to all three research domains by providing publishable works for journals in those fields.

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Preface

The results chapters (chapters 4 - 6) in this dissertation are presented in manuscript form. Parts of this dissertation are repeated in the results chapters in order to maintain chapter stand-alone qualities. Chapter 1 provides the problem statement and justification. Chapters 2 and 3 provide an overview of relevant literature and research methodology, respectively.

Chapter 1 provides an overview of the U.S. hardwood industry and green building programs and is intended to provide more in-depth background for those who require supplemental information. Chapter 2 presents a review of the management literature on the subject of Resource-Based View of firms (RBV) and Institutional Theory. Chapter 3 is a full review of the project design and methodology.

Chapter 4 provides the exploratory results regarding the managerial perceptions of green building movements and their effect on the hardwood industry. Chapter 5 investigates corporate environmentalism from RBV and institutional theory perspectives. Chapter 6 investigates the institutionalization of environmental practices and standards originated by the green building movement. Chapter 4 is written for a wood products audience, while chapters 5 and 6 are written for a general management audience. Therefore, differences in style are present.

Acknowledgements

First and foremost, I would like to thank my family for all of their support and encouragement. Next, I would like to thank all the faculty members, staff and students at the School of Forest Resources who have taught me a great deal and helped me wherever they could. I would especially like to thank my committee members for their guidance throughout my doctoral program: Drs. Judd Michael, Tim Pollock, Paul Smith, and Nikki Brown. I would also like to specifically thank my friends and fellow students for all of their encouragement and help along the way.

Chapter 1

Problem Statement and Justification

Introduction

Why do organizations respond or react the way they do to environmental issues? On one hand, organizations have control over their corporate strategies. Firms can utilize their resources and capabilities to gain a competitive advantage (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984). On the other hand, firms' flexibility of action is also limited by external forces. Institutional theory addresses how external institutions create the homogeneity of organizations within an organizational field. Organizations adopt templates for organizing, which can increase their legitimacy in the eyes of the authorities in their field (Scott, 2001). Legitimacy yields access to resources such as raw material, capital, and technology. I argue that the differences in resources and capabilities between firms, as well as their awareness, knowledge, and perceptions of institutional forces all play a role in the extent to which firms integrate environmental issues into their planning process and strategy.

I investigate the question of how organizations respond to environmental issues from the perspectives of examining both firms' internal capabilities as well as the external pressures they face. This chapter presents background on the green building industry, then the problem statement, justification, and research objectives for this study on corporate environmentalism in relation to firms' external pressures and internal capabilities. Specifically, this study examines members of the forest product industry in the residential green building materials market in order to determine the factors affecting corporate environmentalism.

Background

Overview of Green Building

The concepts of sustainability and environmental responsibility are gaining tremendous momentum throughout the design and construction industries. “Green” or “sustainable” buildings are emerging as an important market not only in the United States, but also around the world. Green building is an outcome of a design philosophy which focuses on increasing the efficiency of resource use — energy, water, and materials — while reducing building impacts on human health and the environment during the building's lifecycle, through better siting, design, construction, operation, maintenance, and removal. Sustainable buildings are more efficient in using key resources like energy, water, materials, and land than buildings that are simply built to meet regulations (Kibert, 2007). They also create healthier environments with more natural light and clean air, and they contribute to improving occupants’ health and productivity (Kibert, 2007).

First and foremost, the benefit of a green building is that it promotes sustainability (Kibert, 2007). Sustainability means that a green building not only reduces the impact on the environment, but it also improves the condition of its occupants as well as reduces costs in the long term. These benefits achieve the triple bottom line, a concept that captures an expanded spectrum of values and criteria for measuring organizational and societal success, including economic, environmental, and social factors (Elkington, 1994). The triple bottom line can be succinctly described as accounting for people, the planet, and profit. Green building practices are set to achieve these goals.

The demand for green buildings in the market place is growing (Anonymous, 2008; Koltko, 2008; Sullivan, 2008) and rapidly becoming the most significant trend in the building industry. The membership growth of various green building programs demonstrates that green building is gaining popularity and creditability. Public and private sector entities, including the

cities of Santa Monica, San Diego, San Francisco, San Jose, Long Beach, Los Angeles, Seattle, and Portland have publicly supported and adopted green building policies and clean energy standards. San Mateo County, the University of California, the Department of the Navy, the federal General Services Administration, and the states of Oregon, New York and Maryland have also done so (Kats et al., 2003). The federal government has also outlined a comprehensive Research and Development plan for improving the energy performance of buildings (NSTC, 2008). Corporate entities, including Steelcase, Herman Miller, Johnson Controls, Interface, IBM, PNC Financial Services, Southern California Gas Company, Toyota, and Ford Motor Company have all constructed green buildings (Kats et al., 2003).

Green Building Programs and Movement

This increasing popularity of green building has been referred to as the “green building movement” in the mass media (Iwata, 2008). Green building programs, such as the U.S. Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED), the National Association of Home Builder’s (NAHB) National Green Building Standard (NGBS), Green Globes, and others are becoming more and more prevalent (Bowyer, 2007; Lockwood, 2008). The continuing membership growth of the various green building councils demonstrates further evidence that green building is on the rise (Cooper et al., 2008).

The growth of the green building movement has both positive and negative consequences for the wood products industry. On the plus side, opportunities lie in manufacturers being able to tap into new market spaces created by the green building movement. The U.S. market for "green" building materials generated \$58 billion in product demand in 2008 (Anonymous, 2009). This market is forecast to expand six percent annually to nearly \$80 billion in 2013, outpacing the growth of building construction expenditures over that period (Anonymous, 2009). The

lumber and wood panels sectors are forecasted to be the fastest growing green product segments, notwithstanding their currently small market share (Anonymous, 2009). Demand for Forest Stewardship Council (FSC) certified wood panels is projected to more than triple between 2008 and 2013 (Bukowski, 2008), growing more than three times as fast as the overall market for wood panels (Anonymous, 2009). It is increasingly important that both primary and value-added hardwood producers be positioned to take advantage of this growth.

Many leading architectural, engineering, and building construction firms are implementing green building certification programs. Adopting these standards will impact the future of engineering and architectural design as well as the competitive position of wood products manufacturing firms. The growth of the green building movement poses both opportunities and challenges for the building design and construction industries. Opportunities lie in architectural, engineering and building construction and material firms being able to tap into the new markets created by the green building movement. One of the challenges, however, is that as green building programs have increased in popularity, the understanding of what “green” or “sustainable” collectively means has become less clear (Stenberg and Raisanen, 2006). In addition to this lack of clarity, the guidelines for green building are still in the emerging phase. Standards and regulations change frequently. Moreover, there are many comparable green building programs that compete against each other, causing confusion for many social groups, especially end users and owners. The notable green building programs at the international and national levels include Leadership in Energy and Environmental Design (LEED), National Association of Home Builders (NAHB), and Green Globes.

In addition to green building programs, other sustainability challenges are becoming more widely accepted in the architectural field. One of them is the Living Building Challenge.

The Living Building Challenge addresses six performance areas: site, energy, materials, water, indoor quality, and beauty and inspiration, with a goal of achieving a "net zero" impact on the energy grid, water systems, and natural environment. Another directive is the 2030 Challenge. In response to global climate change, key leaders in the building design industry have established a goal of constructing and retrofitting only "zero net energy" and carbon neutral buildings by the year 2030. These programs provide a common basis and measure of progress as building design professionals create more buildings that use substantially less energy, reduce greenhouse gas emissions, and create spaces that are healthy and comfortable.

The United States is making progress promoting the green building movement. Over the last few years, the United States Green Building Council (USGBC), a national non-profit organization, has grown dramatically in membership. The USGBC's Leadership in Energy and Environmental Design (LEED) rating system has been widely embraced both nationally and internationally as the green building design standard. LEED is perhaps one of the most well known and widely accepted certification programs.

Leadership in Energy and Environmental Design (LEED)

LEED promotes its efforts through several different avenues, including an accredited exam for professionals to become certified in green building practices and principles, committees to charter and manage the LEED resources, and a LEED rating system to facilitate and track green building projects through the full development life cycle (Cryer et al., 2006). The rating system is a performance and consensus-based national standard for developing green buildings. Projects must register with the USGBC, earn enough points to achieve LEED certification, and prove compliance through an independent audit.

State governments have also backed green building via adoption of LEED. Several states provide incentives, regulations, and/or legislation based around LEED standards. The federal government is also continually growing in its support of USGBC and LEED initiatives, with several existing LEED certified federal buildings, as well as many projects in progress. Federal agencies and departments are increasing their efforts to provide funding for studies, conferences, and other initiatives supporting the growth of the green building industry (Cryer et al., 2006).

LEED is a dynamic, rapidly growing and evolving certification program, driven by the confluence of rising public concerns about global climate change, cost, and the availability of energy sources, as well as the impact of built environments on human health and performance. The design and construction of LEED projects have increased dramatically in recent years, and this growth has given rise to a host of technical, social, economic, and design questions that building professionals are not currently able to answer. Building professions are not the only group that has a direct impact on the development of LEED. There are also many stakeholders, including occupants, building owners, contractors, policy makers, lenders, the federal government, and material providers.

The assessment of how green buildings perform in comparison to typical buildings has been one of the focuses of green building researchers. To contrast green buildings with non-LEED buildings, the US General Services Administration (GSA) conducted research to compare the energy performance, operating cost, and water use of the GSA's 12 LEED buildings against the average performance of US commercial buildings. The results show that the green or high performance building results in 26% less energy, 13% less aggregate maintenance cost, 27% higher occupant satisfaction, and 33% fewer carbon emissions (GSA, 2008). The study also found that GSA's LEED Gold buildings, which reflect a fully-integrated approach to sustainable

design—addressing environmental, financial, and occupant satisfaction issues in aggregate—achieved the best overall performance.

The New Building Institute (2008) found that on average, LEED-NC (New Construction) buildings are delivering their anticipated savings. Buildings with Platinum or Gold LEED levels are more energy efficient and cost effective than Silver or Certified LEED builds. The U.S. Department of Energy's Building Technologies Program (2006) has outlined the best practices for high-performance buildings and has established a goal to create the technology and knowledge base for marketable zero-energy commercial buildings by the year 2025.

The cost of LEED certified projects is one of the major concerns of building owners, real estate developers, and architectures alike. Several studies have investigated a cost-benefit analysis. Langdon (2007) reexamined the cost impact of sustainable design, showing that projects achieving LEED certification are within their budgets and in the same cost range as non-LEED projects. The study comparing the costs of 30 green schools and conventional schools suggests that investment in green technologies significantly reduces the life-cycle cost of operating school buildings (Capital, 2006). Green schools are fiscally prudent and therefore benefit the public.

Cost-benefit analyses have also been done in other countries. Green Building Council Australia (2006) found that green buildings can reduce annual operating costs and increase ROI, asset market value, rents, and occupant productivity. In Canada, Lucuik et al. (2005) demonstrated that a greener building has a higher net present value.

Several market analyses have explored the trends, opportunities, and perspectives of green building stakeholders. IBT Enterprises (2008) found that three-quarters of financial institution executives who are planning new building projects or renovations say that green

building materials and practices, energy efficiency, and indoor air quality are important to their financial institutions.

The McGraw-Hill Construction's SmartMarket Reports (2005) confirm the green building trend as growing in importance to the Architect, Engineer, and Contractor (AEC) community, to owners, and to government agencies at all levels. The report finds that on average, the AEC community believes that green building will lower operating costs, increase building value, and improve returns on investments. Participation in green building is equally influenced by the reductions of life-cycle costs (increase in energy and productivity efficiency) as well as environmental concerns. The largest obstacle to green building is the perception of higher first costs (McGraw-Hill, 2005). A similar conclusion was presented in the white paper on sustainability by Building Design and Construction (2003). The survey revealed that sustainable building is growing and that firms are encouraging their employees to gain experience in sustainable building, but that real estate professionals and clients are uncertain that the benefits warrant the costs.

Despite its popularity, there are some arguments about the downfalls of LEED certification. First, applying LEED in a one-size-fits-all manner is not necessarily best for all building projects. When the government chooses one standard, it hinders the development of other standards that may prove more appropriate (Myers, 2005). Second, a tendency among LEED applicants is to go for the least expensive points, regardless of the relative benefits to the design or the environment (McLennan and Rumsey, 2003). Third, even though LEED is a popular eco-labeling program that doubles as a marketing and policy tool, it is not as successful at being a comprehensive methodology for the assessment of environmental impacts (Scheuer and Keoleian, 2002).

From a review of existing literature about LEED, much attention has been paid to green building performance, cost, and financial and non-financial benefits. However, the link between society and the process of how LEED has evolved have not been well investigated. This link is important in improving LEED standards. This link requires an interaction between different stakeholder groups. As noted in a NIST study (Scheuer and Keoleian, 2002):

"...in order to become an established standard in the building process that practitioners can rely on, it is critical that it [LEED] move towards greater consistency, clarity and transparency ... but much more work is needed...This work will require an as yet unrealized level of partnership among industry, government and third party organizations like the USGBC to develop the knowledge and tools to support assessments of this kind. LEED has provided an important cornerstone to this effort, defining much of the green building arena and engaging a wide array of stakeholders, but LEED alone does not provide an environmental assessment tool that the building industry can rely on. For that, a much greater effort must be expended by many stakeholders in the built environment."

This excerpt highlights the need for collaboration by stakeholders in a collective effort to build an assessment tool for green building that the industry can rely on. However, one of the greatest barriers to the adoption of green building is the complexity of interaction among social groups. The green building market is diverse and complex. The relationships between the many specialists involved are intricate and critical to sparking action on design, energy efficiency, material selection, water conservation, indoor air quality, and site development. The green building sector is characterized by fragmentation within sections of the value chain and non-integration among them (WBCSD, 2007). Even the largest players are small and relatively local

by international business standards, with the exception of materials and equipment suppliers (WBCSD, 2007). Thus, being able to understand the complexity of interaction among these participants will lead to a better understanding of how green building programs and the overall movement affect the corporate environmentalism of a firm. This will not only help firms to achieve the triple bottom line, but also enhance the understanding of the development of green building programs.

As mentioned earlier, the green building market is expanding. More and more people and businesses want to jump on the green bandwagon, whether they believe in sustainability or not. The green building sector is being filled with key stakeholders, or social groups, such as architectural and engineering firms, developers, material and equipment suppliers, contractors, owners, and local authorities that want to be on the forefront of this wave. As the green market space grows, the number of participating social groups increases. This can lead to key stakeholder groups collaborating. However, each social group constructs and interprets green building standards differently. In other words, each social group has its own idea of the problem and need that the green building program is supposed to answer, and consequentially each social group favors a distinct program design that may not be favored by competing groups. Thus, an ongoing tension between different social groups can result in negotiation over the meaning of green building programs.

The Demand for Green Housing

Residential construction accounts for the majority of green building material demand (Anonymous, 2009; Falk, 2009). The overall residential market is not only larger than its non-residential counterpart, but the intensity of demand for green building materials is also greater. The residential building market remained the dominant market for green building materials even

in 2008, when (in inflation adjusted terms) residential construction expenditures fell to a 15-year low and non-residential building construction spending reached its highest level ever. The demand in the residential market is expected to continue growing rapidly through 2013 (Anonymous, 2009).

The Green Building Alliance (GBA, 2009) indicates that the overall construction market will be \$1 to \$3 trillion annually by 2015. Green building will represent between \$100 billion (an average annual decline of two percent in construction activity) and \$475 billion (an average of six percent average annual growth) per year by 2015 as a share of the overall construction market (GBA, 2009). Despite economic uncertainty, the analysis shows that both the volume and share of green building activity will continue to grow in the commercial and residential construction and renovation markets (GBA, 2009). The Green Building Alliance analysis reported that the green materials, products, and services market will be between \$97 billion and \$287 billion by 2015, which represents between nineteen percent and twenty eight percent average annual growth rates. These estimates are influenced by, but not entirely dependent upon, the construction of green buildings (GBA, 2009).

The opportunity for solid growth in the wood products sector within Pennsylvania, according to the GBA report, matches with other national reports that cite an annual growth in demand for sustainable wood products such as FSC certified products (GBA, 2009). In addition to being a leading industry sector, the sustainable wood products market has additional subsectors that can capitalize on green building market opportunities (GBA, 2009). Truss manufacturing, for example, employs a significant number of people in a region and is one sector that could explore programs such as FSC certification in order to make a more desirable product line for green building (GBA, 2009).

Challenges in Residential Construction

Despite these market opportunities, wood product firms face several challenges. The first challenge is that the national and international green building programs' and standards-setting organizations' sustainability criteria and guidelines are increasingly impacting the competitive position of hardwood manufacturers and vendors in building materials markets. These green building programs take the form of credit systems that combine both requirements and choices in construction methods and material selection. Rather prescriptive in nature, they potentially limit innovation in material selection. For instance, wood products firms face challenges from alternative building materials such as recycled steel. In the building materials arena, only wood products manufacturers and distributors are currently asked to demonstrate environmentally sustainable practices (Bowyer, 2005). There is no justifiable reason for not seeking the same assurances from manufacturers and distributors of all other products used in green building construction (Bowyer, 2005).

Green building materials are those products that contribute to green building certification schemes such as LEED. The LEED rating systems provide credits to encourage the use of Forest Stewardship Council (FSC) certified products, which assure that forestry practices are environmentally responsible and socially beneficial. However, a second challenge noted by experts is that LEED is thought by many to treat domestic solid wood products unfairly with respect to their environmental friendliness or “sustainability” (Bowyer, 2007). For example, in a building in North America, bamboo shipped from across the continent earns points toward LEED certification, whereas wood from local sources that is not certified by the designated certifying entity, but is still grown in a sustainable manner, does not earn points toward LEED certification

(NAHB, 2007). Also in reference to LEED, it has been noted that the definition of green wood products is biased toward Forest Stewardship Council (FSC) certified wood (Bowyer, 2007).

A third challenge is that the understanding of what “green” or “sustainable” means collectively has become less clear as green building programs have increased in popularity (Schaefer-Munoz, 2007). With this lack of clarity, the biases of the groups and individuals who develop the requirements for green building programs can influence their certification requirements. As a means to counter these biases, some have called for the use of life cycle assessment (LCA) to gauge the true environmental impact and environmental trade-offs of certification requirements (Bower, 2007). Currently, the use of LCA relative to national building programs is limited (with the exception of Green Globes), and many questions remain as to the feasibility of implementing LCA techniques.

A fourth challenge is global competition. U.S. forest products firms need to be prepared for the challenges from green building programs requirements as well as the competition from foreign wood products producers. U.S. forest products firms provide an exemplary setting for investigating the adoption of environmental certifications and initiatives because of their close relationship with the natural resource and their continued scrutiny by the public. Global competition in the secondary forest products industry has been stiff, and firms need to make strategic choices to rise up to the challenge they have been facing in the marketplace (Hoff et al., 1997). Low cost competitors are increasing in number from areas such as China and Southeast Asia due to lower labor expenses (Buehlmann and Schuler, 2002; Hilsenrath and Wonacott, 2002; Schuler et al., 2001) as well as favorable trade balances (Hoff et al., 1997). The market shares of the U.S. wooden household furniture have declined since 1995 due to foreign competition and economic downturn (Buehlmann and Schuler, 2002; Schuler and Buehlmann, 2010). Schuler et

al. (2001) reported that imported furniture constituted over fifty percent of U.S. furniture sales. Many U.S. manufacturers have not been able to stay in businesses, and this places a substantial burden on the rural economies where those facilities were located (Nwagbara et al., 2002).

U.S. kitchen cabinet producers, aware of the situation with wooden furniture manufacturers, have made strategic changes within their firms, such as implementing lean principles in manufacturing and targeting niche markets. The Kitchen Cabinet Manufacturers Association (KCMA), the main trade association within the kitchen cabinet industry, recently developed a voluntary environmental certification program to help position domestic firms in reaction to their international competitors. By adopting environmental certification and gaining a visible environmental seal or label on their products, U.S. kitchen cabinet producers might be able to move away from defensive postures. Although this certification gives them a competitive advantage over foreign producers who might have trouble obtaining the certification, U.S. kitchen cabinet producers still face challenges from the shortcomings of green building programs.

The shortcomings of green building programs such as LEED have spurred other industry trade associations to explore the creation of new certification programs. An example of such a program is the NAHB's National Green Building Standard (NGBS). The requirements of the NGBS vary from LEED's and appear to better address the needs and challenges of many secondary wood products manufacturers, while still providing consumers with sustainable products and also improving the wood industry's net impact on the environment. The NGBS requirements allow for the use of certified wood from a wide domain of certification schemes (NAHB, 2005).

These challenges affect wood product firms in the form of institutional pressures. These pressures, such as regulatory, market, and social pressures, have been the driving force behind

firms' shift toward more environmentally responsible operations, according to prior research on organizations and the natural environment (Bansal and Roth, 2000). The role of regulatory pressure has been recognized in making firms be environmentally responsive (Fineman and Clarke, 1996; Lampe et al., 1991; Lawrence and Morell, 1995; Newton and Harte, 1997; Post, 1994). Firms comply with legislation to avoid legal liabilities, penalties, fees, and fines. Additionally, firms stay ahead of regulatory changes and remain competitive by proactively or strategically adopting environmentally responsive activities (Aragón-Correa, 1998; Clark, 1999; Rondinelli and Vastag, 1996). Social pressures from the community and activists, along with market pressures from customers and suppliers, further help induce environmental responsiveness from businesses (Berry and Rondinelli, 1998; Bucholz, 1991; Fineman and Clarke, 1996; Lawrence and Morell, 1995; Starik and Rands, 1995).

The economic rationales for corporate environmental response have also been investigated as competitive motivation (Bansal and Roth, 2000). From a resource-based view perspective, firms' environmental responses like eco-labeling and green marketing are seen as sources of competitive advantage (Russo and Fouts, 1997; Shrivastava, 1995). First movers or early adopters of these responses are believed to gain reputation, pre-empt competition, and build value for firms (Hart, 1995; Russo and Fouts, 1997). Due to their lower input and waste, as well as their decreased liabilities, ecologically responsive operations have also been noted as leading to cost reduction (Lampe et al., 1991; Porter and Van der Linde, 1995).

Problem Statement: Theoretical Viewpoints

Companies often perceive the importance of the natural environment and the opportunities from corporate environmentalism¹ differently. Even those companies that see a similar degree of opportunity can differ in the extent to which they integrate environmental issues into their strategic planning process and formulate organization strategy. Two different logics can be used to provide an explanation for firms' behavior: a resource-based view of the firm and a perspective based on institutional theory.

A resource-based view of strategy asserts that every firm possesses unique resources that influence their strategic choices and ultimately their competitive advantage (Barney, 1991; Peteraf, 1993; Wenerfelt, 1984). The RBV focuses on how the value, rarity, imperfect mobility, and non-substitutive nature of resources within a firm yield to competitive advantage (Barney, 1991). These resources and capabilities may be financial, human, intangible, physical, organizational, or technological (Amit and Schoemaker, 1993; Barney, 1991; Farjoun, 1994).

RBV is based on two assumptions. First, companies within an industry or sector may be heterogeneous with respect to the resources they possess. Second, resources may not be perfectly mobile across companies, and that heterogeneity can be perpetual (Amit and Schoemaker, 1993; Barney, 1991; Dierickx and Cool, 1989; Peteraf, 1993). These two assumptions show that every firm possesses unique resources that are not easily transferable to others.

The consideration of external institutional factors has usually been absent from the RBV literature. Institutional pressure (such as media attention and regulation from green building programs) is also an important concept to consider given the strategic changes that firms are

¹ Corporate environmentalism is the organization-wide recognition of the legitimacy and importance of the biophysical environment in the formulation of organization strategy, and the integration of environmental issues into the strategic planning process (Banerjee, 2001; p.181). More details about corporate environmentalism will be discussed in Chapter 2

undergoing in order to remain competitive. This concept draws upon institutional theory, which posits how organizations become more aligned with the institutional environment over time and come to resemble each other in structure and practice (Starik and Marcus, 2000).

Institutional arguments posit that a firm's choice of strategy is constrained by institutional forces (Scott, 2001). In order to survive, companies must conform to the rules and cultural belief systems prevalent in the environment (DiMaggio and Powell, 1983; Meyer and Rowan, 1977). Institutional theory also offers explanations for why firms adopt certain strategies (DiMaggio and Powell, 1983; Pfeffer and Salancik, 1978). Although many theorists consider that a firm's resources and capabilities influence its strategy, institutional theory focuses on the direct impact of institutional rules, pressures, and sanctions on organizational strategy.

In the context of organizations and their relationships with the natural environment, many researchers have noted the importance of firms' resources in influencing their environmental strategies for their competitive advantage (Aragon-Correa and Sharma, 2003; Bansal, 2005; Hart, 1995). In addition, several research studies have been performed using the natural environment as a context for researching management issues and extending institutional theory (Bansal and Gao, 2006; Greening and Gray, 1994; Hoffman, 1999; Jennings and Zandbergen, 1995; Lounsbury, 2001). However, only limited research on organizations and the natural environment has integrated a resources-based view and institutional arguments to identify the factors relevant to explaining a firm's decision to adopt environmental initiatives and certification.

Justification

While previous research on organizations and the natural environment provides rationales for general corporate environmental responses, there remain questions regarding why firms facing similar institutional pressures respond differently to green building movements; why some

firms adopt certain environmental initiatives and certification while others do not. I argue that the differences in resources and capabilities between firms, as well as their awareness, knowledge, and perceptions of green building programs all play a role in the extent to which firms integrate environmental issues into their planning process and strategy. Knowing more about the resources and capabilities of firms as well as the institutional pressures they face from green building programs, relative to firms' corporate environmentalism, could help the forest products research community learn more about the formulation and integration of environmental initiatives in forest products firms. It can also benefit the broader research domain of business and the natural environment by providing knowledge about what factors contribute to perceptions surrounding corporate environmentalism in organizations. Pragmatically, this research will help wood industry stakeholders understand more about the awareness, knowledge, and perceptions of green building programs and the role of hardwood products within these programs by key members of the residential building material value chain.

This research aims to increase the understanding of why firms view the opportunities of corporate environmentalism differently, and why firms that view a similar degree of opportunity differ in the extent to which they integrate environmental issues into their strategic planning process. Three key contributions are expected as a result of conducting this research: (1) a better understanding of how the institutionalization of environmental practices and standards were originated by the green building movement; (2) a more comprehensive examination of RBV and institutional perspectives in the context of business and the natural environment; and (3) empirical results that provide pragmatic answers to key questions surrounding the executives' perceptions of certified wood products schemes.

I investigate factors that influence corporate environmentalism of wood products firms. The primary goal of this research is to understand how resources and capabilities within a firm along with institutional pressures from green building programs influence the firm's corporate environmentalism. The three-fold arguments presented in this research are: 1) organizational resources and capabilities influence a firm's corporate environmentalism; 2) institutional pressures influence a firm's corporate environmentalism; 3) the relationship between resource-based and institutional factors affects a firm's corporate environmentalism. Figure 1-1 represents the basic model of the hypothesized effects of resources and capabilities of firm and institutional pressures on corporate environmentalism. These arguments are drawn from past research, which has established a theoretical and empirical foundation for the links between: (1) a resource-based view of firms and sustainable development (Bansal, 2005; Clelland, Douglas, and Henderson, 2006; Hart, 1995); (2) institutional pressure and sustainable strategic decisions (Greening and Gray, 1994; Hoffman, 1999; Lounsbury, 2001); and (3) the relationship between resource-based and institutional factors and their effect on sustainable development (Bansal, 2005). In addition to these theoretical arguments, this research also has a practical aim of identifying the key factors that drive the use of hardwoods in the residential building value chain.

This research is cross-disciplinary, bridging three disciplines: management and organization theory, sustainable development, and forest products. The domain of forest products serves as the context of the investigation, while theoretical arguments are drawn from the research domains of management and organization theory as well as business and sustainable development. In addition, practical implications will be drawn for green building programs and the residential housing value chain. As a result, a desired outcome of this research is to

contribute to all three research domains by providing publishable works for journals in those fields.

In this study, I employed quantitative research methods. For data collection, three groups made up the samples chosen for this study: 1) the members of the Wood Component Manufacturers Association (WCMA); 2) the Hardwood Manufacturers Association (HMA); and 3) the National Hardwood Lumber Association (NHLA). An internet survey was used with this sample. More detail regarding the research methodology is given in Chapter 3, Research Methodology.

In this research, I address the theoretical research objectives as well as answer applied research questions. The theoretical and applied research objectives to this research are as follows:

Theoretical Research Objectives

1. Empirically test a theoretical model using RBV and institutional theory to explain corporate environmentalism.
2. Empirically test the relationship between firms' resources and capabilities and their corporate environmentalism.
3. Empirically test the relationship between perceived institutional pressures from green building programs and firms' corporate environmentalism.
4. Empirically investigate the nature of the relationship between the resources and capabilities of firms and their perceived institutional pressures from green building programs and their effects on corporate environmentalism.

Applied Research Objectives

5. Understand the perception of key members of the residential building products value chain of green building programs and the role of hardwoods in green building programs.
6. Understand the perception of hardwood managers regarding the key factors driving the use of hardwoods in green buildings.
7. Understand the impact of green building programs on hardwood markets.
8. Investigate chain of custody issues for environmentally certified materials, relative to the adoption of environmental certification.

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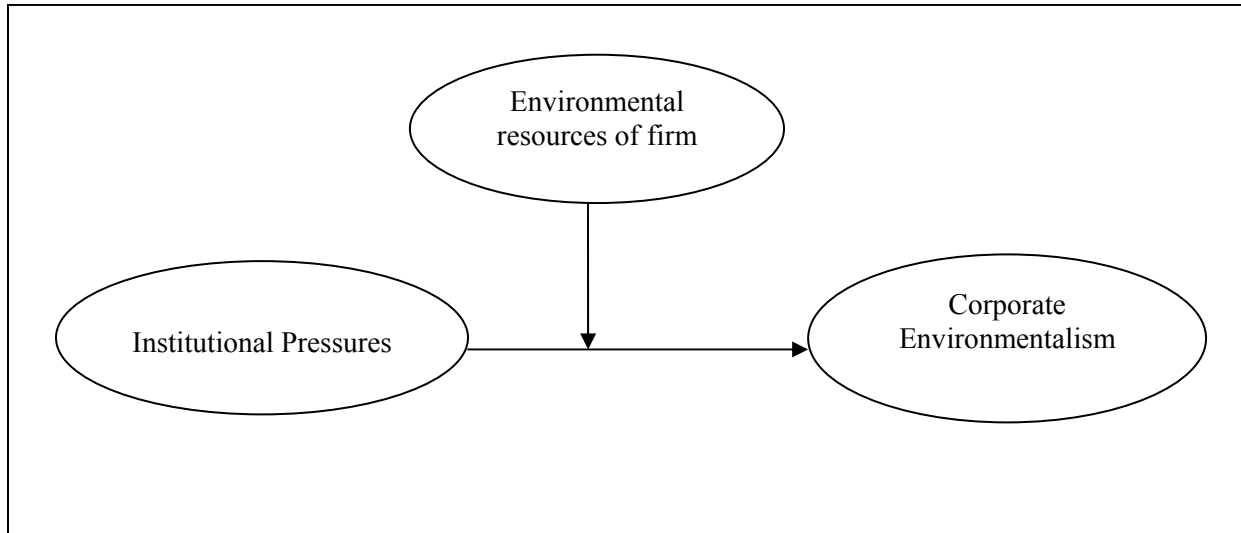
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Figure 1-1: The basic model of the hypothesized effects of resources and capabilities of firm and institutional pressures on corporate environmentalism



Chapter 2

Literature Review

Introduction

This chapter presents a literature review of the theories on corporate environmentalism along with the development of the hypothesis that resources and institutional pressures affect corporate environmentalism. First, it reviews the literature on organizations and the natural environment, followed by a review of corporate environmentalism. Next, the chapter reviews the institutional theory and resource-based view of firms, along with the development of hypotheses. Following that, a review of combining the institutional and resource-based views is presented, accompanied by the development of hypotheses based on these combined perspectives. Finally, the full research model, the study methods, and the research objectives are discussed.

Organizations and the Natural Environment

Why do organizations respond or react the way they do to environmental issues? On one hand, organizations have control over their corporate strategies. Firms can utilize their resources and capabilities to gain a competitive advantage (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984). On the other hand, however, firms' flexibility of action is limited by external forces. Organizations adopt templates for organizing, which can increase their legitimacy in the eyes of the authorities in their field (Scott, 2001). Legitimacy yields access to resources such as raw material, capital, and technology. I investigate the question of why organizations respond to environmental issues from the perspectives of their internal capabilities and external pressures (see Figure 2-1). The primary goal of this research is to understand how the resources and

capabilities within a firm as well as institutional pressures influence its corporate environmentalism. The three-fold arguments presented in this research are: 1) organizational resources and capabilities influence a firm's corporate environmentalism; 2) institutional pressures influence a firm's corporate environmentalism; 3) the relationship between resource-based and institutional factors affects a firm's corporate environmentalism.

----- Insert Figure 2-1 here -----

Organizational Outcomes

The terms “environmental” or “natural environment” are understood by many scholars through their connection to the economic concept of externality (Berchicci and King, 2007). In traditional economic theory, government, not business, is responsible for correcting problems of externality, but government regulation has the potential to hurt firms by increasing costs and constraining the choices available to managers. The purpose of business, however, is to maximize internal returns. Therefore, much research has been done to answer the question, “does it pay to be green?” to try to understand why some firms go beyond regulatory compliance in their environmental efforts. Many scholars have investigated the effects of environmental actions on a firms' competitive advantage (Christmann, 2000; Nehrt, 1998; Shrivastava, 1995b) as well as on their financial performance (Ambec and Lanoie, 2008; Clemens, 2006; King and Lenox, 2000; Klaasen and McLaughlin, 1996; Klassen and Whybark, 1999; Orsato, 2006; Russo and Fouts, 1997).

Increasing empirical evidence has challenged the traditional perspectives that voluntary environmental practices that are not mandated by regulations involve investments requiring careful cost-benefit analysis (Wally and Whitehead, 1994). For example, Klassen and McLaughlin (1996) found a positive relationship between firms' environmental awards and their

stock prices. Judge and Douglas (1998) have linked proactive environmental practices to above-average financial performance. This link was partially explained by investments in emissions reductions that led to cost saving as a result of reduced material and energy use. However, such savings reached a plateau after the 'low hanging fruit' of excessive waste was harvested (Hart and Ahuja, 1996). Porter (1991) and Porter and van der Linde (1995) have argued that firms whose practices went beyond the requirements of environmental regulations reaped lasting cost and differentiation benefits, and supporting this finding. Nehrt (1996) has found the maintainability of a competitive advantage for the first movers into clean technologies.

Some non-financial organizational outcomes are also vital for the growth or survival of a firm. For instance, many scholars have investigated the effects of environmental implementations on firms' internal resources and capabilities (Chan, 2005; Christmann, 2000; Hart, 1995; Marcus and Geffen, 1998; Sharma and Vredenburg, 1998). Furthermore, Bansal and Clelland (2004) have analyzed the effects of environmental issues on unsystematic stock market risk, Judge and Douglas (1998) have examined the relationship between integrating environmental issues and strategic planning, and other researchers have focused on the perceived importance of different stakeholders on firms' environmental concerns (Buysse and Verbeke, 2003; Henriques and Sadosky, 1999).

Environmental Outcomes

In addition to focusing on the pragmatic organizational outcomes resulting from environmental decisions, many research streams pay particular attention to environmental outcomes and performances. The assumption underlying such research is that organizations affect the natural environment. Thus, it is critical to understand how these effects can be reduced in order to alleviate environmental harm (Douglas and Judge, 1995). To examine environmental

effects, the Toxic Releases Inventories (TRI) database has been used as a proxy for environmental performance in several research studies (King and Lenox, 2000; Klassen and Whybark, 1999; Russo and Harrison, 2005). An adoption of ISO 14001 is another proxy that has been used to explain environmental performance (Christmann and Taylor, 2001; Gonzalez-Benito and Gonzalez-Benito, 2005; Jiang and Bansal, 2003). Corbett and DeCroix (2001) have shown that the parties in a supply chain can profit by reducing material consumption. The degree to which organizational actions exceed environmental regulations is used to assess their environmental performance (Aragón-Correa, 1998; Aragón-Correa and Sharma, 2003; Buysse and Verbeke, 2003; Hart, 1995; McKay, 2001; Sharma, 2000).

The role of regulation in shaping firms' environmental performance is another area that receives a lot of research attention (King and Lenox, 2000; McKay, 2001; Nehrt, 1998; Rugman and Verbeke, 1998a, 1998b). One fundamental research interest addresses voluntary initiatives versus mandatory regulations and their relative efficacy. Another parallel stream of research shifts the focus from regulators to a wider group of stakeholders. The arguments are that different stakeholders lead to different types of organizational and environmental strategies, and that some are more effective than others in shaping environmental performance (Buysse and Verbeke, 2003; Christmann, 2004; Fineman, 1996, 1997; Fineman and Clarke, 1996; Henriques and Sadorsky, 1999; Sharma and Henriques, 2005). In addition, several researchers have focused beyond environmental performance to the area of sustainable development. In addition to the environment, researchers investigating sustainable development and its manifestations also include its effects on social and economic dimensions (Bansal, 2005; Russo, 2003; Sharma and Henriques, 2005; Shrivastava, 1995c; Starik and Rands, 1995).

Although much attention has been paid to organizational and environmental outcomes, less attention has been paid to the process by which managers perceive and interpret the relationship between the natural environment and its effects on their organizations. It is critical to understand the process by which managers interpret the relationship between the natural environment and their organizations, as well as what factors influence their environmental strategies and actions, which ultimately lead to their firm's performance and competitive advantage. One way that a business can address environmental issues is through corporate environmentalism, which is the recognition and integration of environmental concerns into a firm's decision making process (Banerjee, 2001).

Corporate Environmentalism

Hoffman (1997) has analyzed the institutional history of corporate environmentalism. He studied the chemical and petroleum industries from 1960 to 1993 using institutional theory as a framework to understand how these industries have been altered by increasing pressures for environmental management. Hoffman identified four phases of corporate environmentalism in the chemical and petroleum industries. The first phase is industrial environmentalism (1960-1970), which focuses on the internal resolution of environmental problems as an addition to firms' operations. The second phase is regulatory environmentalism (1970-1982), which focuses on regulatory compliance with strict environmental laws imposed externally. The third phase is environmentalism as social responsibility (1982-1988), which focuses on pollution prevention and waste reduction driven externally by industry associations as well as by voluntary initiatives. Finally, the fourth phase is strategic environmentalism (1988-1993), which focuses on top management and board level integration of proactive environmental strategies.

In addition to the work of Hoffman (1997), Banerjee (2001) has proposed a working definition of corporate environmentalism:

“Corporate environmentalism is the organization-wide recognition of the legitimacy and importance of the biophysical environment in the formulation of organization strategy, and the integration of environmental issues into the strategic planning process. (p.181)”

Based on this working definition and on the background literature, Banerjee (2001) has identified two themes in corporate environmentalism, consisting of a corporate environmental orientation and an environmental strategy focus.

Corporate environmental orientation

Corporate environmental orientation refers to the notion that firms need to recognize their impact on the environment and try to mitigate such impact (Banerjee, 2001). Corporate environmental orientation is akin to corporate social responsibility, specifically toward the natural environment (Banerjee, 2001). Banerjee offered two sub-themes associated with corporate environmentalism orientation: the first focuses on a firm’s internal aspects of values, behavior, and commitment; and the second focuses on managers' perceptions of the need to respond to external stakeholders.

Environmental strategy focus

Environmental strategy focus reflects the degree to which environmental issues are integrated into strategic planning processes (Banerjee, 2001). Banerjee argued that the level of strategy focus can vary and offered two levels of environmental strategy focus. The first level is the corporate strategy focus. Banerjee argued that higher levels of strategic focus can result in what Shrivastava (1995b) calls “ecologically sustainable least-cost strategy” and “ecologically sustainable niche strategy” to achieve a competitive advantage. The second level is the

business/functional strategy focus. Environmental strategies at the functional level are limited in scope and aimed at emissions reduction and waste management (Banerjee, 2001).

Corporate environmentalism is involved is related to concerns about perceptions of legitimacy that are external to an organization, as well as the strategic planning process internal to an organization. An organization conforms to its institutional environments in order to reduce uncertainty and increase its legitimacy. Organizations adopt templates for organizing, which can increase their legitimacy in the eyes of the authorities in their field (Scott, 2001). Legitimacy yields access to resources such as raw material, capital, and technology. Institutional theory emphasizes how organizations gain legitimacy through isomorphism, which creates homogeneity within the organizational field. Next, I examine the elements of institutional theory that are relevant to the discussion of corporate environmentalism.

Institutional Theory

Institutional theory² addresses how external institutions create the homogeneity of organizations within an organizational field. DiMaggio and Powell (1983) define an organizational field as “organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resources and product customers, regulatory agencies, and other organizations that provide similar services or products” (p.148). Organizations gain legitimacy and reduce uncertainty through isomorphism, which consists of three mechanisms: coercive, normative, and cognitive mechanisms (Scott, 1995). Each mechanism differs in the degree to which it is visible and ranges from the directly coercive to that which is taken for granted (Zucker, 1983).

² Unless otherwise indicated, the term institutional theory is used to designate the stream of literature including both new and neo-institutional theory.

Three Pillars of Institutional Theory

Regulative mechanisms (i.e., *coercive mechanisms*) are based on legal sanctions to which organizations comply out of expediency – to garner rewards or to avoid coercion (Scott, 1995; Scott and Davis, 2007). Their behavior is viewed as legitimate to the extent that it conforms to rules and laws (Scott and Davis, 2007). A *normative mechanism* is morally grounded, to which organizations will adhere based on social obligation, appropriateness, and common values (Scott, 1995; Scott and Davis, 2007). Organizations' structures and behaviors are legitimate to the extent that they are consistent with widely shared norms defining appropriate behavior (Scott and Davis, 2007). The *cultural-cognitive mechanism* refers to the collective constructions of social reality via language, meaning systems, and other rules of classification embodied in public activity (Thompson and Fine, 1999). This mechanism refers not only to individual psychological constructs, but also to common symbolic systems and shared meanings. The cultural-cognitive mechanism emphasizes the taken-for-granted assumptions and unconscious beliefs (Scott and Davis, 2007) to which an organization will attend out of habit, convention, or obligatory action (Zucker, 1983). These three mechanisms form a composite of institutional pressures that create the collective reality for an organization – explanations of what is and what is not, what can be acted upon and what cannot (Hoffman, 2003). In short, organizations facing the same institutional pressures will have a similar structure.

Isomorphism

Institutional theory emphasizes the isomorphic effects of institutional processes (Scott and Davis, 2007), by which organizational fields and populations become more aligned in their structural and procedural features (DiMaggio and Powell, 1983; Scott, 2001; Scott and Davis, 2007). Institutionalization is a process that creates a social reality between actors through

externalization, objectivation, and internalization (Berger and Luckmann, 1966). According to Berger and Luckman, institutions are shared realities that have become taken-for-granted. Neo-institutionalists consider the cognitive classifications, rules, and scripts that have become taken-for-granted to be the rules that determine how actors attribute meaning to their actions (DiMaggio and Powell, 1991). Organizations conform to taken-for-granted norms concerning the appropriate way to organize in order to receive support and legitimacy. Meyer and Rowan (1977) have argued that institutions are likely to take the form of “rationalized myths.” The myths built into institutional elements create the necessity, the opportunity, and the impulse to organize rationally (Meyer and Rowan, 1977).

Legitimization

Meyer and Rowan (1977) have emphasized organizations' needs to gain legitimacy from an institutional environment. The understanding of collectively constructed social realities provides a framework for the creation and elaboration of formal organizations (Scott and Meyer, 1983; Scott and Meyer, 1994). Legitimacy enables a firm to compete more effectively, for it enables better access to resources, attracts better employees, and improves the exchange conditions with partners (Aldrich and Fiol, 1994; DiMaggio and Powell, 1983; Oliver, 1991; Pfeffer and Salancik, 1978; Turban and Greening, 1997). Legitimacy can also lead to economic benefits without technical gain. As a consequence, organizational routines can become decoupled from technical processes, for routines may be initiated and maintained because they have a legitimating function (Boons and Strannegard, 2000). For example, Westphal and Zajac (1994) found that a substantial number of firms are likely to adopt but not actually implement long-term incentive compensation. Zajac and Westphal (2004) have advanced neo-institutional theory by suggesting how policies can become institutionalized, despite growing evidence of

their non-implementation, by virtue of the socio-historical estimation process that drives market reactions. Policy adoptions internal to a firm may become more symbolic and less substantive (Edelman et al., 1991; Pfeffer, 1981). With this view, Zajac and Westphal's perspective integrates Meyer and Rowan's (1977) decoupling thesis with Zucker's (1983) thesis of institutionalization.

Institutional Pressures and the Natural Environment

Increasing attention by organizational theorists to environmental issues increases the importance of institutional pressures on firms. Institutional theorists' approaches to environmental issues provide insights about the fundamental forces that influence social perception, behavior, and action on environmental issues. Thus, institutional researchers highlight both the fundamental sources of environmentally destructive behavior as well as the enactment of solutions (Hoffman, 2003; Hoffman and Ventresca, 2002). Because institutional forces have such a significant effect on environmental issues, several research studies have been performed using the natural environment as a context for researching management issues and extending institutional theory (Bansal and Gao, 2006; Hoffman, 1999; Jennings and Zandbergen, 1995; Lounsbury, 2001).

Lounsbury (2001) has employed an institutional framework to examine recycling programs within colleges and universities. Additional research has used an approach that incorporates arguments about social movements and market strategies to examine the controversial development of a for-profit recycling industry in the U.S. from 1960 to 2000 (Lounsbury, Ventresca, and Hirsch, 2003). Hoffman (1999) has demonstrated that an institutional field takes form around issues, rather than around markets or technologies, by empirically investigating the evolution of corporate environmentalism within the U.S. chemical

industry. Jennings and Zandbergen (1995) proposed the value of institutional theory as an approach to ecologically sustainable organizations. They suggested the extension and modification of institutional theory by considering the natural environmental constraints on sense-making and paradigm construction.

Despite a number of studies that use the natural environment as a context to extend institutional theory, only a few empirical studies have investigated the relationship between institutional pressures and environmental management. For example, Jiang and Bansal (2003) have investigated the influence of institutional pressures and market demand for adopting ISO 14001 in the Canadian pulp and paper industry. They found that task visibility and environmental impact opacity led to differences in firms' approaches to ISO 14001 in the absence of coercive pressure (Jiang and Bansal, 2003). Bansal (2005) examined Canadian firms in the oil and gas, mining, and forestry industries from 1986-1995 and found that institutional factors influenced corporate sustainable development. More recently, Berrone, Gelabert, and Fosfuri (2009) have analyzed the impact of symbolic and substantive actions on firms' environmental legitimacy.

Coercive Pressures

Coercive pressures are defined by DiMaggio and Powell (1983) as formal or informal pressures exerted on organizations by other organizations upon which they are dependent. Arguments relating to coercive pressures stem mainly from the resource-dependence perspective (DiMaggio, 1988). Thus, coercive pressures on organizations may stem not only from regulatory bodies, but also from resource-dominant organizations as well as parent corporations. Teo, Wei, and Benbasat (2003) investigated the effect of coercive pressure in the context of financial

electronic data interchange adoption. Their study found that coercive pressures stemmed mainly from the dominant suppliers and dominant customers (Teo et al., 2003).

Dependence on suppliers arises when organizations are unable to switch to alternative suppliers, thereby relying on existing suppliers for much of their purchases (Teo et al., 2003). If dominant suppliers demand processes or products that require environmental certifications, the organization is likely to respond to those demands. Dependence on customers arises when organizations rely heavily on customers who account for much of their sales, and those customers have alternative suppliers (Delmas and Toffel, 2008; Teo et al., 2003). If dominant customers demand processes and/or products that require environmental certifications or environmentally friendly business processes and products, the organization is likely to respond to these demands. Organizations characterized by an institutionalized dependency pattern are likely to exhibit similar structural features such as formal policies, organizational models, and programs (Rogers, Purdy, Safayeni, and Duimering, 2007; Teo et al., 2003). In the current research, the structural feature of interest is corporate environmentalism.

Corporate environmentalism reflects managers' perceptions of external stakeholders, such as suppliers and customers, and the need to respond to their interests. Several components of corporate environmentalism are, for instance, sustainable development, protecting the environment for future generations, responsibility to the community and to society, and the need for a positive company image (Gladwin et al., 1995; Hart, 1995; Menon and Menon, 1997). In these ways, corporate environmentalism increases the legitimacy of an organization.

In sum, organizations may perceive pressures from dominant suppliers and customers to acquire legitimacy or status, or to demonstrate their fitness to do business with those dominant

organizations. Thus, I investigate the perceptions of managers regarding the dominance of their suppliers and customers and their effect on firms' corporate environmentalism.

Hypothesis 1a (H1a): The perceived dominance of suppliers or customers has a positive effect on a) corporate environmental orientation and b) environmental strategy focus.

Mimetic Pressures

Mimetic pressures may cause an organization to change over time to become more like other organizations in its environment (DiMaggio and Powell, 1983). Mimetic pressures manifest themselves in two ways: the prevalence of a practice in the focal organization's industry, and the perceived success of organizations within the focal organization's industry that have adopted the practice (Haveman, 1993; Teo et al., 2003). An organization will imitate the actions of other structurally equivalent organizations because those organizations occupy a similar economic network position in the same industry and, thus share similar goals, produce similar commodities, share similar customers and suppliers, and experience similar constraints (Burt, 1987; Teo et al., 2003).

Besides taking cues from the collective action of similar others, organizations are particularly apt to imitate the behaviors of those firms they perceive as successful (Burns and Wholey, 1993; DiMaggio and Powell, 1983; Haunschild and Miner, 1997; Teo et al., 2003). A firm's environmental strategy focus reflects the degree of integration of environmental issues into the strategic planning process (Banerjee, 2001). Among the strategic actions influenced by environmental concerns are new product development, the location of new manufacturing plants, increased R&D investments, technology development (especially in pollution prevention and waste management), and changes in product and process design. Organizations can learn vicariously, copying or avoiding certain organizational practices according to their perceived

impact or outcomes (Levitt and March, 1988; Miner and Haunschild, 1995; Teo et al., 2003). Strategically copying fruitful products or practices for a second-mover advantage may allow an organization to unwittingly acquire some unexpected or unsought unique advantages (Lieberman and Montgomery, 1988). Innovation profitability has been proposed as a key factor determining its rate of adoption (Rogers, 1995). Mimicking behaviors of other successful organizations can also accrue an external referent of prestige (Perrow, 1961). Thus, I investigate the managers' perceptions regarding the success of their competitors and the effect on firms' environmental strategy focus.

Hypothesis 1b (H1b): The perceived success of competitors has a positive effect on a) corporate environmental orientation and b) environmental strategy focus.

Institutional pressures present a collective of cultural repertoires that determine possibilities for organizational structure, culture, and action, according to Hoffman (1997). However, as Hoffman has noted, each individual organization is capable of choosing from among these repertoires. He suggests that action becomes a choice from among a bounded set of legitimately available options, and not a choice from among an unlimited array of possibilities. In order to focus on corporate environmentalism, I now turn attention away from external institutions toward the resources and capabilities within an organization.

Resource-Based View of Strategy

A resource-based view of strategy (RBV) emphasizes that every firm possesses a unique bundle of resources and capabilities that influence its strategic choices and ultimately its competitive advantage (Barney, 1991; Peteraf, 1993; Wenerfelt, 1984). These resources may be financial, human, intangible, physical, organizational, or technological (Amit and Schoemaker,

1993; Barney, 1991; Farjoun, 1994). An RBV is based on two assumptions: first, companies within an industry or sector may be heterogeneous with respect to the resources they possess; second, the resources may not be perfectly mobile across companies, and that heterogeneity can be perpetual (Amit and Schoemaker, 1993; Barney, 1991; Dierickx and Cool, 1989; Peteraf, 1993). These two assumptions show that every firm possesses unique resources that are not easily transferable to others.

The RBV emphasizes how the value, rarity, imperfect mobility, and non-substitutive nature of resources within a firm can lead to a competitive advantage (Barney, 1991). In discussing the imperfect mobility of resources, Peteraf (1993) has suggested the idea of causal ambiguity as representing the non-definable nature of resources a firm possesses and has established the concepts of ex ante and ex post limits to competition within a RBV strategy. Prior to investing (ex ante) in resources, managers make varying estimations of the resources' future value. As a result of these varying estimations, firms make differing investments in resources. After investing (ex post), factor immobility and barriers to competition from substitute products or services prevent those firms that made inferior decisions from adjusting. Thus, some firms gain a sustainable competitive advantage (Barney, 1991; Peteraf, 1993). Wernerfelt (1984) has established the concept of combining resources together, as if in a bundle, to create a unique whole.

A number of researchers have empirically applied RBV to the analysis of environmental strategies and profitability (Aragón-Correa, 1998; Christmann, 2000; Hart, 1995; Marcus and Geffen, 1998; Maxwell, Rothenberg, Briscoe, and Marcus, 1997; Rugman and Verbeke, 1998; Russo and Fouts, 1997; Sharma and Vredenburg, 1998). Fineman and Clarke (1996) have found that firms' superior resources allow them to adapt to regulations, garnering advantages over their

competitors more quickly and efficiently. Judge and Douglas (1998) have demonstrated that firms that successfully integrated the natural environment into their strategic processes achieved competitive advantages, both financially and environmentally. Clemens and Douglas (2006) have argued that environmental resources may include many components in a bundle, for example, additional accounting systems (Sinding, 2000), more extensive monitoring of waste streams (Sharfman, Ellington, and Meo, 1997), training, additional information requirements, and indirect costs involved in adopting any new system requiring organizational changes (Huybers and Bennett, 2003). In their analysis, Clemens and Douglas (2006) found that coercion is positively related to voluntary green initiatives, but the relationship is contextual and depends on the level of superior resources of firms that focused on environmental strategies.

Combining Institutional and Resource-Based Views

As observed by Bansal (2005), most research in the area of sustainable development has taken either a resource-based position (e.g., Hart, 1995; Klassen and Whybark, 1999; Russo and Fouts, 1997) or an institutional theory position (Hoffman, 1999; Jennings and Zandbergen, 1995; Prakash, 1999). Only a few researchers have integrated both perspectives. Oliver (1997b) has suggested that both resource capital and institutional capital are indispensable to a sustainable competitive advantage. Bansal (2005) has proposed normative rationality, institutional isolating mechanisms, and institutional sources of firm homogeneity as determinants of rent potential that complement and extend resource-based explanations of firms' variation and sustainable competitive advantage. Bansal has renewed the call by Oliver for research that integrates both perspectives.

A resource-based view of strategy emphasizes that every firm possesses unique resources and capabilities, which influence its strategic choices and ultimately its competitive advantage

(Barney, 1991; Peteraf, 1993; Wernerfelt, 1984). Therefore, it is critical to develop superior environmental resources and capabilities as a source of competitive advantage (Bansal and Roth, 2000; Hart, 1995; Judge and Douglas, 1998).

The basic assumption of the dynamic capabilities framework is that fast changing markets force firms to respond quickly (Teece et al., 1997; Eisenhardt and Martin, 2000). Some firms will take advantage of the imperfectly competitive strategic factor markets created by the ambiguity and impact associated with sustainable development to generate rents (Bansal, 2005). However, not all firms will commit to sustainability. Some firms will aggressively innovate and capitalize on the rewards of sustainable development, while others will wait until there is less uncertainty, even if they have the requisite resources and capabilities on which to build (Bansal, 2005). And there will be other organizations that lack the superior environmental resources, capabilities, and organizational slack to commit to creating and implementing corporate environmentalism.

Bansal (2005) has asserted that RBV and institutional theory each provide distinct insight into organizational determinants of corporate sustainable development. She notes that the intersection and interaction of these two perspectives can further shed light on understanding a firm's commitment to sustainable development. More recently, Clemens and Douglas (2006) have investigated the relationships between voluntary green initiatives and two antecedents, coercive forces and superior firm resources, through the lenses of both institutional theory and RBV. In addition, Hoffman (1997) has stated that the institutional history of corporate environmentalism is a product of the "coevolution" of institutions outside firms and the structures and strategies inside firms. Both these external and internal factors will be incorporated for a thorough understanding of corporate environmentalism.

Natural-Resource-Based View of the Firm

Based on RBV, Hart (1995) laid out a framework for a natural-resource-based view (NRBV) of a firm. According to his argument, corporate environmental action is critical for a competitive advantage. He has proposed three interconnected NRBV strategies: pollution prevention, product stewardship, and sustainable development. Pollution prevention focuses on minimizing emissions, effluents, and waste. The main competitive advantage of pollution prevention, achievable with continuous improvement, is lowered costs. Product stewardship focuses on minimizing the life-cycle costs of products. The main competitive advantage of product stewardship, achievable through stakeholder integration, is to preempt competitors. Sustainable development focuses on minimizing the environmental burden of firm growth and development, achievable through shared long term vision. Hart envisions the main competitive advantage of sustainable development as a firm's future competitive position.

Porter and van der Linde (1995) have proposed a theory of how environmental performance helps industries or nations gain a competitive advantage. This theory presents two claims. First, firms miss profit opportunities by using too many environmental resources or by ignoring ways to reduce their consumption (Porter and van der Linde, 1995). Second, external stakeholders can provide information or incentives that will improve the efficiency of most firms (Porter and van der Linde, 1995). NRBV is a theory of how an individual firm might gain a competitive advantage by going green. As an addition to the RBV, the NRBV focuses on those resources that will allow the firm to manufacture environmentally friendly products or generate fewer harmful by-products. The NRBV also differs from classical RBV analysis by borrowing two claims from Porter and van der Linde (1995). It assumes that managers not only make heterogeneous investments in resources, but also, in the case of resources needed to protect the

environment, that managers systematically invest too little (McWilliams and Siegel, 2001). Therefore, NRBV assumes that an average firm can achieve a competitive advantage by improving its environmental performance.

Properly developed corporate environmentalism can lead to better environmental performance, and ultimately to a competitive advantage. Bansal and Roth (2000), Hart (1995), and Judge and Douglas (1998) have pointed out that firms can no longer ignore the problems of and pressures associated with ecological development. They have identified the importance of developing superior resources based on a firm's relationship with the natural environment as a source of competitive advantage. Therefore, it is important for a firm to possess and utilize superior environmental resources in order to increase its corporate environmentalism.

Resource Scarcity

Although superior environmental resources are critical in gaining competitive advantage, changes in available resources may generate different types of organizational adjustments. Resource scarcity appeared to account for variations in the frequency of process, structural, and strategic adjustments (Koberg, 1987). An environment where adequate resources are lacking can pose a far greater and longer lasting threat to an organization (Koberg, 1987). Changes in available resources may require broad changes in the structure and strategy of an organization. Contrary to this argument, Whetten (1981) suggested that the key to enhancing the adaptive potential of organizations is utilizing the pressure of resource scarcity to spur innovation. I argue that the resource scarcity will affect the relationship between institutional pressures and corporate environmentalism.

Hypothesis 2a (H2a): Environmental resources scarcity will be associated with weaker relationships between perceived dominance of customers and a) corporate environmental orientation and b) environmental strategy focus.

Hypothesis 2b (H2b): Environmental resources scarcity will be associated with weaker relationships between perceived success of competitors and a) corporate environmental orientation and b) environmental strategy focus

Capabilities

There is a distinction between resources and capabilities. Resources are the freestanding assets that can be evaluated in isolation from other freestanding assets. Capabilities are the organizational talents required to integrate and coordinate resources (Amit and Schoemaker, 1993; Teece, Pisano, and Shuen, 1997). Firms can accumulate large stocks of assets without generating any competitively useful capabilities (Aragón-Correa and Sharma, 2003).

Amit and Schoemaker (1993) define capabilities as a firm's skill and ability to deploy resources. These are inherent parts of both formal and informal organizations. They include the rules, routines, and procedures through which a firm makes decisions and manages its internal affairs (Hill and Jones, 2004). Capabilities, Amit and Schoemaker assert, are knowledge-based, specific to a firm, and can be derived from developing, carrying, and exchanging knowledge through the firm's human capital. Adner and Helfat (2003) have studied dynamic managerial capabilities, including managerial human capital, managerial social capital, and managerial cognition. With the importance placed on managerial cognition, their research is akin to the group dynamics of cognition and learning discussed in the knowledge-based view (KBV) literature.

Learning Capabilities

Differences exist between the resource-based view and the knowledge-based view of firms. The main assumptions associated with the RBV are the existence of heterogeneous resources among firms within an industry or industry group, and the notion that not all resources need to be nurtured or developed. The primary assumptions of the KBV place importance on the role of cognition, on the benefits of learning, on the development of learning capabilities by firms, and on learning and knowledge within a group context. Lieberman (1984) started the KBV with his research conclusions centered on learning by doing and learning by spending. Expanding on this idea of learning as a process, Fiol and Lyles (1985) have proposed the concept of organizational learning, which is improving organizational action through better knowledge and understanding. They have also discussed the differences between lower-level learning and higher-level learning. The latter, with its analysis of causation and associations that can affect an entire organization, sheds some light on how resources can synergize to yield unique possibilities and opportunities. This notion is in sync with the RBV of firms that create a competitive advantage (Barney, 1991).

Cohen and Levinthal's (1990) concept of absorptive capacity and Benner and Tushman's (2002) investigation into exploitive versus explorative activities exemplify how cognition is central to the KBV literature. Benner and Tushman (2002) departed from the theme of "learning is beneficial" and instead posited that different types of learning are beneficial for different outcomes. Hayward (2002) and Haleblain and Finkelstein (1999) have investigated the role of experience in relation to learning. Haleblain and Finkelstein also focused on the concept of organization behavioral learning. Expanding on the notion of experience in relation to learning,

Zollo and Singh (2004) have explored knowledge codification and its role in the experience-learning relationship.

Resources, dynamic capabilities, and knowledge are closely interlinked (Barney, Wright, and Ketchen Jr., 2001). The ability to learn is likely to be among the most important capabilities that a firm can possess. The understanding of these capabilities is limited, and thus these capabilities along with the way they can generate competitive advantages deserve a great deal of empirical attention (Barney et al., 2001). Learning capabilities can contribute to a bundle of superior environmental resources, which are based on a firm's relationship with the natural environment as a source of competitive advantage. It is important for a firm to possess learning capabilities in order to increase its corporate environmentalism. Properly developed corporate environmentalism can lead to environmental performance and, ultimately, competitive advantage.

However, some organizations that ignore competition will be less inclined to learn from experience and less competent at doing so (Engwall, 1976). The circumstances under which these learning disabilities produce a disadvantage cause an organization to become incapable of coping with an environment that cannot be arbitrarily enacted (Hannan & Freeman 1984). Thus, based on the development of learning capabilities by firms, and lack thereof, I investigate firms' learning capabilities and their effects on the relationship between institutional pressures and corporate environmentalism.

Hypothesis 3a (H3a): High knowledge scarcity will be associated with weaker relationships between perceived dominance of customers and a) corporate environmental orientation and b) environmental strategy focus

Hypothesis 3b (H3b): High knowledge scarcity will be associated with weaker relationships between perceived success of competitors and a) corporate environmental orientation and b) environmental strategy focus

Organizational Slack

Organizational slack allows firms to make investments in resources and capabilities that may not have an immediate pay-off (Bansal, 2005; Levinthal and March, 1981). It can help a firm develop the resources and capabilities necessary to improve the speed and degree to which it can adapt to its external environment (Bansal, 2005; Cheng and Kesner, 1997). Bourgeois (1981) has defined organizational slack as “that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change. (p.84)”

Bansal (2005) has investigated the relationship between organizational slack and sustainable development. She found that organizational slack permits firms the latitude to seek creative new solutions to corporate sustainable development in many circumstances. For instance, many respondents in her study noted that large firms, firms with extra financial resources, or large environmental health and safety (EHS) departments were more likely to implement new practices. In addition, the financial benefits that accrue from sustainable development can often be long term and diffuse, for example, through improved corporate reputation or social capital. Thus, I investigate the relationship between organizational slack and its effect on the relationship between institutional pressures and corporate environmentalism.

Hypothesis 4a (H4a): Low organizational slack will be associated with weaker relationships between perceived dominance of customers and a) corporate environmental orientation and b) environmental strategy focus

Hypothesis 4b (H4b): Low organizational slack will be associated with weaker relationships between perceived success of competitors and a) corporate environmental orientation and b) environmental strategy focus

The Study

This research aims to increase the understanding of why firms view the opportunities of corporate environmentalism differently, and why firms that view a similar degree of opportunity differ in the extent to which they integrate environmental issues into their strategic planning process and organizational strategies. Three key contributions are expected as a result of conducting this research: 1) a better understanding of how the resources and capabilities of firms as well as institutional pressures play a role in decisions to integrate corporate environmentalism; 2) a more comprehensive examination of RBV and institutional perspectives in the context of business and the natural environment; and 3) pragmatic results that provide answers to key questions surrounding the fast-growing “green-certified” residential building industry and how hardwoods can be better positioned to take advantage of this growth.

I employed quantitative research methods in this study. For data collection, three groups made up the samples chosen: 1) the members of the Wood Component Manufacturers Association (WCMA); 2) the Hardwood Manufacturers Association (HMA); and 3) the National Hardwood Lumber Association (NHLA). An internet survey was used with this sample. More detail regarding the research methodology is given in Chapter 3, Research Methodology.

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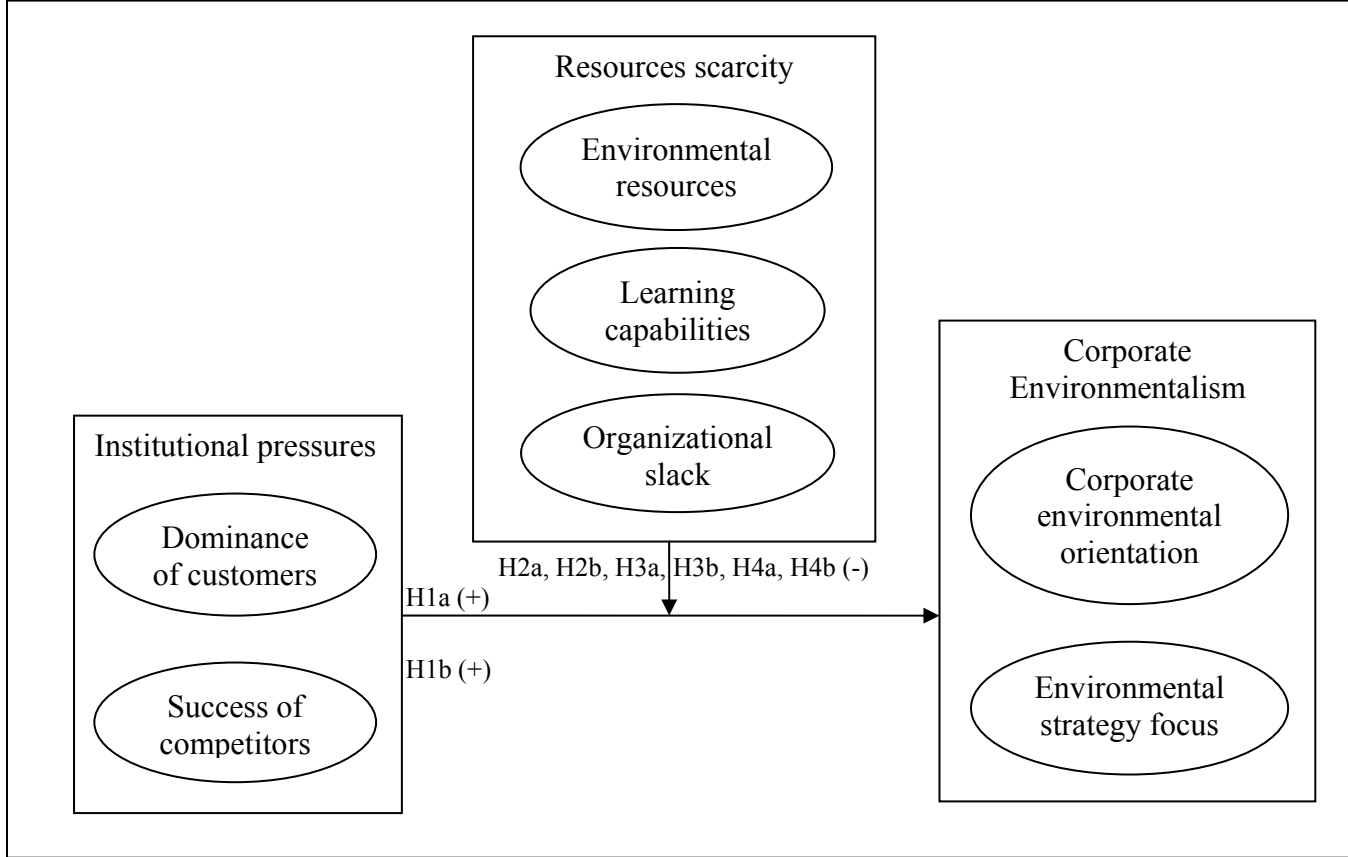
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Figure 2-1: Full research model



Chapter 3

Research Methodology

Introduction

This chapter first describes the sample characteristics then discusses the survey data collection. The measures used in the study are then presented, followed by analysis of the survey data. Finally, the limitations of this study and its research methodology are discussed.

Quantitative Research Method

Survey Sample

The survey sample was drawn from the wood and forest products industry for several reasons. First, due to the increasing attention being paid to environmental preservation and conservation, the wood and forest products industry has come under scrutiny for its use of natural resources (Mater, 2005). Although modern sustainable forestry is environmentally conscious, many people perceive the industry to be exploiting natural resources (Bowyer, 1995; Polzin and Bowyer, 1999) and have various expectations about how wood and forest products businesses should behave (Panwar et al., 2006). In addition, because of rising labor and material costs, many wood and forest products businesses are looking for inexpensive labor and materials in other countries, which also raises a red flag for public perceptions of corporate environmentalism. Finally, many wood and forest products companies are adopting or looking to adopt some form of an environmental certification program to make their stakeholders aware of their commitment to the environment (Bukowski, 2008). Because of these issues, it is important that the wood and forest products industry pays special attention to corporate environmentalism.

Three groups made up the samples chosen for this study: 1) the members of the Wood Component Manufacturers Association (WCMA); 2) the Hardwood Manufacturers Association (HMA); and 3) the National Hardwood Lumber Association (NHLA). A field study strategy (McGrath et al., 1982) was used to study these samples.

Survey Data Collection

The data were collected via web surveys to reduce cost, increase the sample size, and save time. Initially, an email letter was sent to participants with a message from each trade associations describing the research and containing a link to an on-line survey. The link to web questionnaires targeted the top managers of WCMA, HMA, and NHLA member firms. A list of the top managers along with the approval to survey top managers of the member firms was obtained from WCMA, HMA, and NHLA. The methods outlined by Dillman (2000) were followed to compose this survey. In addition to the online survey that was sent to the top managers of WCMA, HMA, and NHLA member firms, an additional 20 managers have completed the paper copy of the survey. These managers did not receive an online survey link from the trade associations.

The unit of analysis is the firm. The survey respondents were executives of wood products companies within the United States. After the respondents received the email from their trade association, they could click on a link in the email to bring them to the online survey. The splash page of the survey contained a welcome and an implied consent form containing IRB approval (IRB# 32410) and a statement of confidentiality. The survey took about 10-15 minutes from start to finish. After the respondent finished and clicked on the last page of the survey, the data were sent to the database. The complete databases were received at the end of January 2010.

After one week, a follow-up email was sent out to remind potential participants who had not completed the on-line survey. In order to use caution not to aggravate the WCMA, HMA, NHLA and the managers from their member firms, postcards were not mailed to participants in between the two rounds of surveys. A week later, a final follow-up email was sent. The contents of each wave of emails contained a brief statement of endorsement of the research by each of the trade associations' presidents. A timeline of major research events is show in Appendix B.

The non-response bias was statistically assessed for the data from WCMA, HMA, and NHLA members. Early respondents were compared to respondents who return surveys after follow-up efforts. This comparison was performed based on the assumption that respondents who respond to follow-up efforts are similar to non-respondents (Fowler, 1984). Statistical analyses, specifically t-tests, of top managers' and firms' characteristics were conducted to determine whether significant differences exist between these two groups of early and late respondents.

The total number of usable surveys was 141. Non-response bias was assessed with *t*-tests that compared the mean responses of survey measures between those managers who responded to the initial email and those who responded after subsequent emails. All of the items that measured firm's characteristics, such as number of employees, firm's age, and revenue, were also used for t-tests for non-response bias. At $\alpha = .05$, non-response bias was not significant with *p*-values ranging from .16 to .59.

Although the exact response rate cannot be determined, an approximation of the response rate was calculated. For WCMA and HMA, the emails were sent out to the member firms by their presidents. WCMA has 128 member firms and HMA has 80 member firms. NHLA provided a list of 700 emails for their member firms. The emails were sent directly from the

researchers, and not through the trade association, to NHLA's member firms. Of all the emails sent out, 359 emails bounced back due to invalid or not active email addresses. Based on these numbers of the "good" emails that went through, the response rate of NHLA was approximately 49%. In addition, there were 20 firms that chose to do survey in hard copy. It also should be noted that some of the responding firms may have been members of more than one trade association. Thus, based on the available information, an estimated lower bound of the response rate was 25.7%.

Manager and Firm Characteristics

Almost sixty percent (58%) of the participants were males. About three-fourths (74.5%) of participants had relatively high organizational tenure. One hundred and five participants had been with their firms for 10 or more years, while 36 participants had been with their firms for fewer than 10 years. Through the self-selection process using web surveys, all of the participants were top managers and familiar with decision-making related to corporate environmentalism. Table 1 represents the frequency of positions held by the respondents. Table 2 shows the frequency of the 2008 sales revenue of the participated firms.

----- Insert Table 3.1 and 3.2 here. -----

Measures for the Survey

The survey measures in this chapter are organized by variable type. Independent variables are described first, dependent variables are addressed second, and control variables are addressed last. A list of items in the full survey instrument is included in Appendix A. The individual items in each measure were averaged to create an overall mean value to represent each construct. The items were coded (or recoded if necessary) so that high values correspond to high levels of the constructs.

Independent Variables

The perceptions of institutional pressures were used as independent variables.

Institutional Pressures

Survey respondents' perceptions of institutional pressures include the perceived dominance of a firm's suppliers or customers and the perceived success of its competitors.

Perceived dominance of suppliers or customers. The perceived dominance of suppliers or customers has been studied by Bridges and Villemez (1991) and by Teo, Wei, and Benbasat (2003). This measure was used as a construct of resource dependence, which is defined as the extent to which a focal organization depends on constituents in its environment for critical resources (Pfeffer and Salancik, 1978). Resource dependence is a component of the coercive pressures on an organization. Coercive pressures are the conformist pressures on a focal organization emanating from other organizations upon which it depends for critical resources, or from institutions upholding the cultural expectations of the society in which it functions (DiMaggio and Powell, 1983). This measure consisted of four items each for suppliers and customers. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include the following: with regard to my main suppliers/customers, “my firm’s well-being depends on their resources/purchases” and “my firm MUST maintain good relationships with them”. The Cronbach’s alphas reported by Teo et al. (2003) were 0.8 and 0.93 for suppliers and customers respectively.

Perceived success of competitors. The measure of the perceived success of competitors has been studied by Teo et al. (2003). This measure is a component of mimetic pressures, which are pressures experienced by a focal organization to model itself after other organizations in its organizational field when faced with uncertainty over its goals, technologies, means-ends

relationships, et cetera (DiMaggio and Powell, 1983). This measure consisted of four items. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include the following: my main competitors “benefit greatly” and “are perceived favorably by others in the same industry”. The Cronbach’s alpha reported by Teo et al. (2003) was 0.94.

Moderating Variables

Firm's resources and capabilities were used as moderating variables.

Resources and Capabilities of Firm

A firm's resources and capabilities include its environmental resources, learning capabilities, and organizational slack.

Environmental Resources. The resources of a firm have been used as a variable by Clemens and Douglas (2006). They used three items to measure resource value, three items to measure resource rareness, and two items to measure resource substitutability. These items were then averaged to create a single measure. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include: “Your customers or suppliers consider your environmental strategy unusual”, “The implementation of your environmental strategy is considered valuable within your firm”, and “Other efforts within your firm could easily substitute for the implementation of your environmental strategy”. The Cronbach’s alpha reported by Clemens and Douglas (2006) was 0.81.

Learning Capabilities. The learning capabilities of a firm have been used as a variable by Clemens and Douglas (2006) and by Kogut and Zander (2003). They used four items to measure codifiability and five items to measure teachability. A seven-point Likert-type response

format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include: “Your firm could write a useful manual describing the implementation of your environmental strategy”, and “Education and training new environmental personnel is a quick and easy job”. The Cronbach’s alpha reported by Kogut and Zander (2003) was 0.68 and 0.77 for codifiability and teachability respectively.

Organizational Slack. The organizational slack of a firm has been used as a variable by Bansal (2005) and Nitin and Ranjay (1996). The measure of organizational slack is used to recognize a firm's extra liquidity that could be invested in corporate environmentalism. Nitin and Ranjay (1996) measured the degree of slack by asking the managers the following two questions: (1) "Assume that due to some sudden development, 10% of the time of all people working in your department has to be spent on work totally unconnected with the tasks and responsibilities of your department. How seriously will your output be affected over the next year?" (2) "Assume that due to a similar development, your department's annual operating budget is reduced by 10%. How significantly will your work be affected over the next year?" In both cases, managers were given five choices ranging from 1, "output will not be affected," to 5, "output will fall by 20% or more." The midpoint, 3, indicated that output would fall by about 10 percent, the same as the proposed reduction in resources. The managers then made their choice based on the value of the prospective loss in output. Across this range of responses, the higher the reported loss in output, the lower the slack. The researchers reverse-coded these values for the actual analysis to create the measure of slack corresponding to each question using these transformations. The alpha reported by Nitin and Ranjay (1996) was 0.79.

Dependent Variable

I use corporate environmentalism as my dependent variable. Corporate environmentalism can be used to measure the recognition and integration of environmental concerns into a firm's decision making process.

Corporate Environmentalism

Corporate environmentalism includes corporate environmental orientation and environmental strategy focus.

Corporate environmental orientation. This refers to the notion that firms need to recognize their impact on the environment and try to mitigate that impact. Corporate environmental orientation is akin to corporate social responsibility, but specifically toward the natural environment. Banerjee (2001) offers two sub-themes to clarify the discussion. The first focuses on a firm's internal qualities of values, behavior, and commitment. The second focuses on managers' perceptions of the need to respond to external stakeholders. The measure of corporate environmental orientation consisted of four items for each sub-theme. A seven-point Likert-type response format ranging from "strongly disagree=1" to "strongly agree=7" was used. Examples of survey items include: "Environmental preservation is a high-priority activity in our firm" and "Environmental preservation is vital to our firm's survival". The coefficient alpha reported by Banerjee (2001) was 0.89 for internal orientation and 0.73 for external orientation.

Environmental strategy focus. This theme reflects the degree to which environmental issues are integrated into a firm's strategic planning processes (Banerjee, 2001). Banerjee has argued that the level of strategy focus can vary and offered two levels of environmental strategy focus. The first level is the corporate strategy focus. Banerjee (2001) argued that higher levels of strategic focus can result in what Shrivastava (1995) called "ecologically sustainable least-cost

strategy” and “ecologically sustainable niche strategy” to achieve a competitive advantage. The second level is the business/functional strategy focus. Environmental strategies at the functional level are limited in scope and aimed at emissions reduction and waste management (Banerjee, 2001). This measure of environmental strategy focus consisted of five items to measure the corporate strategy focus and three items to measure the business/functional strategy focus. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include: “In our firm, ‘quality’ includes reducing our environmental impact” and “In our firm, product-market decisions are always influenced by environmental concerns”. The coefficient alpha reported by Banerjee (2001) was 0.90 for corporate strategy focus and 0.73 for business/functional strategy focus.

Control Variables

Firm age. The age and size of the firm are used as control variables because of concerns about liabilities due to a firm's small size or newness (Stinchcombe, 1965), which may affect their resources and capabilities. A firm's age was measured by a single item in the questionnaires: “How many years has your firm been in operation?” This measure was included to control for the inertial or institutional effects of a firm (DiMaggio and Powell, 1991; Hannan and Freeman, 1977).

Firm size. Larger firms tend to be more visible and attract more media and stakeholder scrutiny, which influences both firms’ legitimacy and reputation (Fombrun, 1996; Suchman, 1995). Given that both resource-based and institutional processes vary based on firm size, firm size is treated as a control variable (Bansal, 2005). The self-reported 2008 annual sales of firms were asked in the questionnaires. The natural log of total sales was used as a proxy for company size. The transformation of total sales to the log of total sales will achieve a simple linear

structure, constant variance, and normal distribution of the variable (Cox and Snell, 1981). Like firm age, firm size is also included to control for the inertial or institutional effects of the firm (DiMaggio and Powell, 1991; Hannan and Freeman, 1977).

Executive characteristics. Four executive characteristics were measured: 1) owner status, 2) founder status, 3) industry tenure, and 4) current position. Owner status and founder status were measured by two questions: 1) “Are you the/an owner of the company?”, and 2) “Are you the/a founder of the company?” The following question was used to measure industry tenure for WCMA and HMA executives: “How many years have you worked in the wood industry?” Finally, executives’ current position was determined by asking executives to place themselves in one of 12 pre-determined categories: CEO, president, COO, CFO, operations/production manager, chief executive of a business unit or division, engineering manager, marketing manager, sales manager, human resource manager, VP, or other (Bukowski, 2008).

Type of organization. A dummy variable is account for the type of organization to control for any systemic differences in the types of firm surveyed. The type of organization in our sample indicates the markets they compete in. Some markets may be more prosperous and more attuned to customers’ environmental preferences.

Survey Data Analysis

SPSS, STATA, and Excel were used for the data entry and analysis. All data were examined for coding and data entry errors. Kurtosis and skewness measures, as well as visual inspection of the histograms, were used to assess the normality of responses to the survey items. Data transformations were performed to achieve data distributions that better approximate a normal distribution. Measures of the central tendency and dispersion were assessed for each item

and construct. To estimate reliability, Cronbach's alphas were calculated for each construct that has three or more items. If a construct only consists of two items, reliability was measured using the Pearson correlations. In addition, Pearson correlations were used to assess the basic relationships between variables and to gain insight into convergent and discriminate validity. To further assess convergent and discriminate validity, both exploratory and confirmatory factor analysis were used. In addition to Pearson correlations, multiple regression analyses were used to assess the relationships between a firm's perceived institutional pressures, resources and capabilities, and corporate environmentalism. Hierarchical linear modeling was used to assess all of the independent variables' direct effects on organizations' corporate environmentalism. The nature of the moderating effect of resources scarcity was also assessed (Baron and Kenny, 1986).

Limitations

The limitations to this research are as follows:

Generalizability. By restricting the sample to only the wood and forest products industries, the ability to generalize results to other industries or organizational settings is limited. The independent variables may differ based on the industry sampled. As such, the dependent variables, model, and findings should not be generalized without due consideration of these limitations. However, a restricted sample does add more power to the findings, because uncovering findings in a sample in which the variance in the independent variables is restricted is more difficult than when the variance is large (Bansal, 2005).

Common method bias. Almost all of the independent variables pertinent to the research hypotheses are self-reported. The above-mentioned assessments of validity and reliability were performed to cope with this limitation.

Social desirability. Survey responses are self-determined and allow for social desirability bias, especially when responses involve sensitive issues that may possibly gain media scrutiny, such as environmental concerns.

Causality. Since this research is cross-sectional, some of the directions of the causal relationships examined cannot be confirmed. If this study can be extended longitudinally, there will be an opportunity to confirm the causal directions of relationships.

Chapter 3 References

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Table 3-1: Frequencies of Respondents' Titles

Executive Title	Frequency
CFO	32
CEO	22
Human Resources Manager	17
Engineering Manager	13
Operations/Production Manager	7
Vice President of _____	7
COO	6
President	6
Marketing Manager	6
Chief Executive of a Business Unit or Division	4
Other	3
Sales Manager	1

Table 3-2 : Frequencies of Revenue for responding firms

Revenue (\$)	Frequency
0 - 5 Mil	29
5 - 10 Mil	24
10 - 20 Mil	30
20 - 40 Mil	23
40+ Mil	18

Chapter 4

Executive Perceptions of Forest Certification and Green Building

Abstract

The construction of green buildings is having a multitude of effects on several industries including hardwood industries. Perhaps one of the greatest impacts is from the growing demand of green building materials and how it changes the forest certification. This research investigates executives' perceptions of the key forest certification systems by surveying managers of two key segments of the hardwood producing industry. We collected data from 141 executives at primary and secondary producers and asked about their perceptions of green building in relation to certified wood products. In particular, this research seeks to advance our knowledge in this area by exploring executives' perceptions of green building and forest certification outcomes including benefits and challenges associated with adopting a forest certification program. We also examine the pressures from competitors that trigger a company to take the steps necessary to sell certified wood. Findings suggest that perceptions of the outcomes and benefits of green building and forest certification differ significantly based on whether or not the company had adopted forest certification and offered certified products. The research considers the implications for companies considering adopting forest certification as well as for organizations providing certification schemes (e.g. FSC and SFI).

Introduction

The construction of green buildings³ is having many effects on U.S. hardwood industries, and one of its greatest impacts is the growing demand of green building materials in relation to the forest certification (AIA, 2009; Bukowski, 2008; Bowyer, 2007, Mater 2005). The rise in demand for green construction has given rise to many questions surrounding wood certification. This research aims to investigate the wood products executives' perceptions of green certification outcomes, green building certifications, pressures from competitors, and organizational leaning capability.

The demand for green buildings in the market place is growing (Iwata, 2008; Koltko, 2008; NSTC, 2008) and rapidly becoming the most significant trend in the building industry. By 2013, green building is expected to represent 25 percent of all commercial and institutional building starts and 20 percent of residential construction, up from 2 percent in 2005 (McGraw-Hill Construction, 2009). In addition, green building currently comprises 5 – 9 percent of the retrofit and renovation market (\$2 – 4 billion) and is projected to grow to 20 – 30 percent to a \$10 – 15 billion market by 2014 (McGraw-Hill Construction, 2009). Green building programs, such as the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED), the National Association of Home Builder's National Green Building Standard, and Green Globes are becoming more and more popular (Bowyer, 2007; Bowyer, Bratkovich, Lindberg, and Fernholz, 2008). The continuing growth in various green building councils at both the local and national levels is further evidence of the green building movement (Cooper, Fava, and Baer, 2008). The membership growth of green building programs demonstrates that green

³ Green building is an outcome of a design philosophy which focuses on increasing the efficiency of resource use — energy, water, and materials — while reducing building impacts on human health and the environment during the building's lifecycle, through better siting, design, construction, operation, maintenance, and removal.

building is gaining popularity and credibility. Public and private sector entities have publicly supported and adopted green building policies and clean energy standards (Kats, 2003). As the green building trend is growing, the market for green building materials, such as certified woods, is projected to expand 7.2% annually to over \$80 billion in 2013 (Selko, 2009). As a consequence, the adoption of forest certification is also increasing. Perhaps one of the greatest impacts is from and how it changes the forest certification.

A daunting number of studies, which have investigated the issues related to the forest products as green building materials, focused on the premium for certified wood products (Carter and Merry, 1998; Hubbard and Bowe, 2005; Perera, Vlosky, Dunn, and Hughes, 2008; Ruddell and Stevens, 1998; Stevens, Ahmad, and Ruddell, 1998). However, only limited attention has been paid to the non-financial influences prompting companies to adopt forest certification. The purpose of this research is therefore to understand the executive perceptions of green building and forest certifications. In particular, this research aims to identify the key benefits driving the adoption of forest certification. We investigate executives' perceptions of the key U.S. forest certification systems by surveying managers from two key segments of the hardwood producing industry. We collected data from executives at primary (lumber) and secondary (components, flooring, etc.) producers and asked about their perceptions of green building in relation to certified wood products. The perceived inequities of various green building certification schemes for wood products have led us to also examine producer preferences for competing forest certification systems.

Certified Woods

The market for certified wood products in home building does exist and is growing (Bukowski, 2008; Carter and Merry, 1998; Gronroos and Bowyer, 1999; Stevens et al, 1998).

While markets for certified wood products have been small and fragmented, they have been growing and they sometimes yield a premium price for sellers (Bukowski, 2008; Carter and Merry, 1998; Humphries, Vlosky, and Carter, 2001; Stevens et al, 1998). Forest certification systems will also continue to evolve and grow in the United States. In particular, the volumes and sales of third-party certified wood products marketed in the United States are continuing to increase at all levels of the supply chain, from the forest to the consumer (Newsom, Bensel and Bahn; 2008). Perhaps one of the most well known forest certification schemes is the Forest Stewardship Council (FSC). FSC's current unprecedented growth rate is a response to market demand for FSC certified products (FSC, 2010). The value of FSC labeled sales is estimated at over \$20 billion (FSC, 2010).

Getting certified and selling certified forest products are partly contingent on executives' perceptions of green certification outcomes, green building certifications, success of competitors, and organizational learning capability. Certified wood markets present both opportunities and challenges for wood producers. Wood products firms face both direct and indirect costs associated with adopting certification. The direct costs consist of certification review and monitoring, while indirect costs consist of changes in management. These costs are expected to be covered by increased product prices, or the "green" premium (Carter and Merry, 1998). The benefits of certified wood products to a firm vary from financial benefits, such as charging a premium; to non-financial benefits include improving public image, and maintaining market.

Charging a Premium for Certified Woods

There is controversy over whether customers are willing to pay a premium for certified wood products. Several studies have investigated the specific percentage of premiums that respondents would be willing to pay for certified wood products or raw materials. On one hand,

some studies have found that the motivation for wood products companies to sell certified woods is so they can charge a price premium (Ozanne and Vlosky, 1997; Ozanne and Vlosky, 2003; Vlosky and Ozanne, 1997; Vlosky and Ozanne, 1998; Winterhalter and Cassens, 1993). On the other hand, some studies have argued that wood products firms cannot charge a premium, but rather should sell certified wood products to maintain or gain market share (Bowyer, 2004; Polzin and Bowyer, 1999; Ruddell and Stevens, 1998; Sullivan, 2008). Gronroos and Bowyer (1999) have found that home buyers are more interested in buying environmentally certified lumber and wood products for features they can see in the home once it is built, such as flooring, doors, cabinets, and furniture.

Improving Public Image

A majority of the respondent firms in Hubbard and Bowe's study (2005) did not perceive these possible benefits -- price premiums on certified product offerings, increased market share and access, as well as operational and managerial improvements -- to be realized benefits of becoming chain-of-custody certified. However, some firms gained new knowledge and perceived enhanced credibility with the public by becoming certified (Hubbard and Bowe, 2005). Their findings support previous studies which concluded that price premiums are often unrealized on certified wood products. Similarly, only a few firms had increased market share (Hubbard and Bowe, 2005). Although the perceived costs outweigh the perceived benefits for most respondents at this time, evidence suggested that certification may be an effective vehicle to create better relations with the public (Hubbard and Bowe, 2005). Reinforcing the results of Hubbard and Bowe (2005), Perera et al. (2008) also found that price premiums for certified products are rare, and that other factors such as improving company image and pre-existing

certified suppliers seem to be the main reasons for companies to enter the certified market, rather than price premiums or pressure from environmentalists.

Aguilar and Vlosky (2008) indicated the potential for forest certification to bring a competitive advantage to supply chain companies. One might ask how the development of certification as a tool for branding could bring a competitive advantage to companies that already have a well-established brand, rather than diluting the established brand. If a company does not embrace certification on the basis that the company has already developed a brand-based competitive advantage, it will result in the potential erosion of a positive company image and even a decline in competitive market advantage because the company would be perceived as lagging behind in a market-wide trend that prefers certified products.

Maintaining Market Share

Stevens et al. (1998) investigated the market for certified wood products and found that the primary motivation for companies to offer certified products is for market share improvement and not price premiums. By offering certified products, a forest products company may enhance its public image enough to increase sales of all products. In addition, diverting resources toward a very small market segment may be cost prohibitive (Siegel and Vitaliano, 2006). Thus, even with a price premium, the size of the existing market may make it financially infeasible to pursue (Stevens et al. 1998).

Although there are evidences of benefits from adopting forest certification and selling certified wood, both financial and non-financial, why are some executives still hesitated to pursue the forest certification? This research aims to investigate executives' perceptions of green building and forest certification outcomes including benefits and challenges associated with

adopting a forest certification program. We also examine the pressures from competitors that trigger a company to take the steps necessary to sell certified wood.

Methods

Sample Characteristics

This research investigates executives' perceptions of the key U.S. forest certification systems by surveying managers from two key segments of the hardwood producing industry. The data was collected from executives at primary (e.g., lumber) and secondary (e.g., components, flooring, etc.) producers; they were asked about their perceptions of green building in relation to certified wood products. Three groups make up the samples chosen for this study: 1) the members of the Wood Component Manufacturers Association (WCMA); 2) the Hardwood Manufacturers Association (HMA); and 3) the National Hardwood Lumber Association (NHLA). A field study strategy (McGrath et al., 1982) was used to study these samples.

Survey Data Collection

The data were collected via web surveys to reduce cost, increase the sample size, and save time. The survey was hosted with the Survey Research Center (SRC) at the Pennsylvania State University. Initially, an email letter was sent to participants with a message from each trade association describing the research and containing a link to an online survey. The link to web questionnaires targeted the top managers of WCMA, HMA, and NHLA member firms. An approval to survey top managers of the member firms was obtained from WCMA, HMA, and NHLA. In addition, a list of the top managers of the member companies was obtained from NHLA. The methods outlined by Dillman (2000) were followed to compose this survey. After one week, a follow-up email was sent out to remind potential participants who had not completed the online survey. In order to use caution not to aggravate the WCMA, HMA, NHLA, and the

managers from their member firms, postcards were not mailed to participants in between the two rounds of surveys. A week later, a final follow-up email was sent to those who did not complete the online survey after the first follow-up email. The contents of each wave of emails contained a brief statement endorsing the research by each of the trade associations' presidents. The full survey and timetable for the data collection can be viewed in appendix B.

Measures

Manager and firm characteristics. Managers were asked to identify their current job or position titles, organizational tenure, and hardwood-industry tenure. The firms' 2008 annual sales figures were requested and used as a proxy for firm size. Managers were asked to select the range of their firm's revenue. In the following analyses, the designation ranges are (1) less than \$5 million (2) \$5 to \$10 million (3) \$10 to \$20 million (4) \$20 to \$40 million (5) more than \$40 million.

Green Certification Outcomes. This measure investigated the perceived benefits of selling certified wood products. Two main themes of green certification outcomes investigated in this study were customer demand and competitive advantage. Managers were asked to rate the extent to which they agree with statements regarding how green certification helps wood producers. Each of the items had a 5 point Likert type response format anchored by (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree. Examples of survey items include: "Certification helps wood producers to satisfy existing customer demand for green products" and "Certification helps wood producers to improve upon a company's existing competitive strategy".

Green Building Certification. Managers were asked to rate the extent to which they agree with statements regarding their perceptions of green building. Each of the items had a 5 point

Likert type response format anchored by (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree. Examples of survey items include: “Green building programs have provisions unfavorable to wood products industry” and “Demand for certified wood products is most strongly driven by commercial construction, not residential”.

Premium on Certified Wood Products. Participants were asked whether their firm sells certified wood products. If they answered yes, then they were asked to estimate what percentage of price increase they normally receive by selecting from the following ranges: (1) 0% (2) 1 to 3% (3) 4 to 6% (4) 7 to 9% (5) 10 to 12% (6) 13% and more. They were also asked for the forest certification programs that their firm participates in. The survey inquired about the percentage of their total sales that is certified by each of the following systems (% 2009 sales): (1) FSC (2) SFI (3) ATFS (4) PEFC (5) CSA (6) other.

Challenges of Providing Certified Woods. Participants were asked whether their firm sells certified wood products. If they answered no, then they were asked to explain why their company did not sell certified wood products. In addition, participants were asked if their company ever machined wood under an FSC outsourcing agreement.

Data Analysis

Data analysis began with descriptive statistics of responding firms, which include the firm's age, number of employee, and sales revenue. To examine the differences in executives' perceptions between firms that sell certified woods and those that do not sell certified wood groups, an independent t-test or analysis of variance was used. SPSS 17.0.2 (SPSS, Inc., Chicago, IL, USA) was used for data analyses.

Results

Respondent Profile

This study investigated firms in the hardwood products industry in the U.S. Most of these firms are privately held. Through the self-selection process using the web surveys, all of the participants were top managers. The total number of usable surveys was 141. Non-response bias was assessed with t-tests that compared the mean responses of survey measures between those managers who responded to the initial email and those who responded after subsequent emails. All of the items that measured firm's characteristics, such as number of employees, firm's age, and revenue, were also used for t-tests for non-response bias. At $\alpha = .05$, non-response bias was not significant with p-values ranging from .16 to .59.

Although the exact response rate cannot be determined, an approximation of the response rate was calculated. For WCMA and HMA, the emails were sent out to the member firms by their presidents. WCMA has 128 member firms and HMA has 80 member firms. Out of 128 member firms, 27 firms from WCMA responded (21.1% response rate). Out of 80 member firms, 14 firms from HMA responded (17.5% response rate). NHLA provided a list of 700 emails for their member firms. The emails were sent directly from the researchers, and not through the trade association, to NHLA's member firms. Of all the emails sent out, 359 emails bounced back due to invalid or inactive email addresses. Based on the number of the "good" emails that went through, 80 firms responded. Thus, the response rate of NHLA was approximately 23.4% (80 out of 341 firms). In addition, there were 20 firms that chose to respond in hard copy. It also should be noted that some of the responding firms were members of more than one trade association. Thus, based on the available information, an estimated lower bound of the response rate was 25.7% (141 out of 549 firms), and the upper bound was approximately 50% (141 out of 282 firms).

Almost sixty percent (58%) of the participants were males. About seventy five percent (74.5%) of participants had relatively high organizational tenure. One hundred and five participants had been with their firms for 10 or more years, while thirty six participants had been with their firms for fewer than 10 years. Around 23% of the firms in this sample have revenues of less than \$5 million. Almost 25% are within the \$10 – \$20 million revenue range, and approximately 35% have revenues of more than \$20 million. In addition to revenue, the number of employees was used to measure the size of the firm. The median number of employees for this sample was 41.50, with an interquartile range of 82.00. Firm age had a mean of 50.00 years and a standard deviation is 34.63. Table 4.1 represents the frequency of positions held by the respondents. Table 4.2 represents the frequency of revenue for responding firms.

----- Insert Tables 4.1 and 4.2 here -----

Table 4.3 shows that approximately 50% of the responding firms sell certified wood products. Figure 4.1 shows the percentage of companies that sell certified wood products. From the figure, the trend demonstrates that larger companies (in sales revenue) are more likely than smaller companies to sell certified wood. This could be because larger companies tend to possess more resources, including financial, human, and physical resources, with which to obtain certified wood supplies. Concerning certification programs, among those who are certified, the majority of respondents participate in FSC. SFI is the second most popular program. Figure 4.2 illustrates the percentage of forest products certification schemes adopted by the responding firms.

----- Insert Table 4.3 and Figures 4.1 and 4.2 here -----

Perceived Benefits of Selling Certified Wood

Two main benefits of certified wood products, customer demand and competitive advantage, were investigated in this study. Based on the results from 2-way independent sample t-test analyses shown in Table 4.4, there were significant differences in the mean of customer demand benefit from green certification for the firms that sell certified woods and those that do not. Comparing to those who do not sell certified woods, firms that sell certified woods have a significantly higher mean score on how certification helps wood producers to satisfy existing customer demand for green products, to gain new customers in existing markets, and to improve their standing in the eyes of customers relative to competitors ($t = -4.266, p < .001$; $t = -2.775, p < .01$; and $t = -4.182, p < .001$ respectively). However, those who sell certified woods do not have a statistically significantly higher mean score on how certification helps wood producers to gain new customers in new markets than those who do not sell certified woods ($t = -1.688, p = .094$).

----- Insert Table 4.4 -----

Another main benefit of certified wood products investigated in this study is gaining competitive advantage. As shown in Table 4.4, the results from independent sample t-test analyses illustrated that there were significant differences in the mean of competitive advantage benefit from green certification for the firms that sell certified woods and those that do not. Comparing to those who do not sell certified woods, firms that sell certified woods have a significantly higher mean score on how certification helps wood producers to maintain their competitive position with competitors who have chosen to adopt green certification, to improve their competitive position with competitors who have chosen NOT to adopt green certification, and to improve upon a company's existing strategy ($t = -4.216, p < .001$; $t = -5.372, p < .001$;

and $t = -4.893$, $p < .001$ respectively). However, those who sell certified woods do not have a statistically significantly higher mean score on how certification helps wood producers to position their companies to pursue more stringent processes or product certifications (e.g., ISO certification) than those who do not sell certified woods ($t = -1.316$, $p = .191$).

Executives' Perceptions of Green Building

The rise in demand for green construction, coupled with perceived inequities in certification schemes, has given rise to many questions surrounding wood certification and whether there will be sufficient certified wood products to meet the growing demand. Our results addressed three key concerns: first, the executives' perceptions of green building trends; second, executive perceptions of how knowledgeable their firm's human resources are on green building topics; and third, the executives' perceptions of demand for certified wood related to green building.

From the results from independent sample t-test analyses shown in Table 4.5, there were significant differences in the mean of executives' perception of green building between the firms that sell certified woods and those that do not. Those who sell certified woods do not think that green building is a fad; and they have significantly lower mean score when asked to what extent that they think green building is a fad than those who do not sell certified woods ($t = 4.004$, $p < .001$). When asked to what extent they think that they have employees who are knowledgeable about green building programs, the mean scores for those who sell certified woods were statistically significantly higher than those who do not sell certified woods ($t = -5.705$, $p < .001$). In addition, when asked to what extent they think being knowledgeable about green building programs does not benefit their firms, those who sell certified woods have a statistically significant lower mean score than those who do not sell certified woods ($t = 3.239$, $p < .01$).

Those who sell certified woods have a statistically significant higher mean score on the degree to which they offer certified wood products because of customer demand and green building trends than those who do not sell certified woods ($t = -9.005$ and -8.420 respectively, $p < .001$).

----- Insert Table 4.5 -----

Pressures from Competitor who Sell Certified Woods

Companies are particularly apt to imitate the behaviors of those whom they perceive as successful. Companies can learn vicariously, copying or avoiding certain organizational practices according to their perceived impact or outcomes. Strategically copying fruitful products or practices for a second-mover advantage may allow an organization to unwittingly acquire some unexpected or unsought unique advantages.

Based on the results from independent sample t-test analyses shown in Table 4.6, there were significant differences in the mean of perceived pressures from competitors for the firms that sell certified woods and those that do not. Comparing to those who do not sell certified woods, firms that sell certified woods have a significantly higher mean score on how their main competitors who sell certified wood products have benefited greatly from selling certified wood products, and are perceived favorably by others in their industry, suppliers, and customers ($t = -4.557$, $p < .001$; $t = -4.471$, $p < .001$; $t = -3.766$, $p < .001$; and $t = -4.185$, $p < .001$ respectively).

----- Insert Table 4.6 -----

Knowledge Management and Organizational Learning Capability

Based on the results from independent sample t-test analyses shown in Table 4.7, there were significant differences in the mean of learning capabilities for the firms that sell certified woods and those that do not. Those who sell certified woods have significantly higher mean score on whether their firm could write a useful manual describing the implementation of their

environmental strategy than those who do not sell certified woods ($t = -2.124, p < .05$). Those who sell certified woods also have significantly higher mean score on how large parts of the process to implement their environmental strategy are embodied in a standard procedure and a computer application that their firm modified and developed than those who do not sell certified woods ($t = -3.059$ and -2.827 respectively, $p < .01$). In addition, those who sell certified woods have significantly higher mean score on how their new personnel can readily learn how to implement their environmental strategy by working with knowledgeable, skilled employees and by studying written documentation than those who do not sell certified woods ($t = -2.893$ and -3.802 respectively, $p < .01$).

----- Insert Table 4.7 -----

Challenges in Selling Certified Woods

As noted previously, about 52% of the respondent firms sell certified wood products, while 48% of the respondents did not sell certified wood products at the time of survey. Those who do not sell certified wood products were asked to explain why their companies do not sell certified wood products (Table 4.8). The main reasons given were that the cost is too high (37%) and there is no demand for certified wood products (18%). In addition, sixteen percent of the responding firms perceived that they are already implementing sustainable practices and they do not need certification. Another fourteen percent of the responding firms do not think that selling certified woods is feasible or practical from their firms. Moreover, some of the responding firms disagree with the certification. Finally, approximately five percent of the responding firms are in the process of getting certified.

----- Insert Table 4.8 -----

Discussion

This research aims to investigate the wood products executives' perceptions of green certification outcomes, green building certifications, pressures from competitors, and organizational learning capability. We anticipated that the executives at firms that had decided to sell certified woods would recognize different benefits and pressures from competitors than those at firms that had decided not to sell certified woods. The results suggest that this is indeed the case. Executives at firms that had sell certified woods perceived differently about benefits associated with certified woods and green building from their non-certified counterparts.

Using a customer demand perspective, we can explain that the decided whether forest certification based on how certified woods would help them capture existing customers or existing markets. For executives in firms that sell certified woods, the benefits included satisfying existing customer demand for green products and gaining new customers in existing markets. They also generated value from enhanced competitive positioning accruing from improved company image, reputation, and their standing in the eyes of customers relative to competitors.

From a competitive advantage viewpoint, we can rationalize that the executives weighed what they perceived as the implementation costs against what they perceived as the competitive advantage in an effort to decide whether forest certification was worth pursuing. For executives at firms that sell certified woods, the benefits included maintaining their competitive position with competitors who have chosen to adopt green certification, improving their competitive position with competitors who have chosen not to adopt green certification, and improving upon a company's existing strategy.

According to an institutional pressures perspective, firms are particularly apt to imitate the behaviors of those whom they perceive as successful. Based on this perspective, we can

explicate that the executives at firms that sell certified woods perceived that their main competitors who sell certified wood products have benefited greatly from selling certified wood products, and are perceived favorably by others in their industry, suppliers, and customers. Drawing on our findings, there was a significant association between the perceived success of competitors and executives' decisions in selling certified woods.

Executives at firms that had not offered certified woods believed that it was too costly to sell certified woods. In essence, it was very difficult to justify the initial costs of becoming certified, as well as the costs of additional staff hours needed for the documentation requirements of certification. They also felt that there is not enough demand for certified woods. Further, they perceived that the challenges are too significant that it is neither practical nor feasible to sell certified woods.

Additionally, our results suggest that executives see the opportunities associated with green building quite differently depending on whether their firms had achieved forest certification. In other words, executives in firms that sell certified woods had different perceptions about the benefits associated with green building certification compared with their counterparts who were not selling certified woods. On the one hand, the executives at firms that sell certified woods were optimistic in terms of the growth of green building trends and increasing demand of certified woods used in green building constructions. Moreover, they were confident that they have employees who are knowledgeable about green building programs. On the other hand, the executives at firms that do not sell certified woods were pessimistic about the above matters. They perceived that the lack of green building growth, demand for certified woods, and employee knowledge create difficulties they would face in and prevent them from

pursuing forest certification. A disparity of these findings has a variety of implications for groups interested in increasing the rate at which an industry adopts a forest certification system.

Implications

This research sought to move away from the framework of opportunities and threats of selling certified woods to a more targeted framework of specific perceived benefits and challenges of selling certified woods. By better understanding some of the finer nuances to the perception of selling certified woods, those organizations that develop certification schemes (e.g., SFI) can better tailor their communications to address these specific perceptions, while still achieving the broader aims of certification. With a better suited or tailored communications effort around certification, the adoption of certification may increase leading to improvement in an industry's net impact on the natural environment.

From our findings, the managers at non-certified firms might not see the benefits or have the resources that managers in the certified firms do. Our results suggest that the challenges encountered in achieving forest certification are less significant than executives of non-certified companies may think. The executives from certified firms consistently reported that they perceived non-financial benefits from selling certified woods whereas leaders at noncertified firms may be under the false impression that they would enjoy significant financial returns from price premiums, etc., associated with selling a green product. Therefore, the implication of this outcome suggests that education or other assistances, such as a training program, is needed for non-certified firms in order to compete in the certified wood markets. This creates an opportunity for the trade associations to develop the knowledge base and support for their member firms.

Additionally, trade associations can provide useful information regarding certification schemes and alternative schemes that might better fit the purposes of the member firms based on

the findings of this research. The findings about FSC certification issues, including cost of getting certified, lack of demand, and lack of ability to pursue the certification, might provide the trade associations with a potential to develop the third-party certification schemes. Furthermore, the finding is shown that the responding firms perceived that several certification schemes are biased against wood products. Thus, the trade associations may have to take a stronger stance to help their member firms negotiate and leverage with the organizations that create the certification schemes.

Organizations that act as certifiers (e.g. FSC or SFI) can learn from these findings and consider modifying their promotional messages in order to foster the adoption of forest certification by more firms. Specifically, certifying organizations would clearly do well to stress the competitive positioning and customer demand benefits of certified woods and perhaps deemphasize preconceived notions that forest certification will be difficult to implement. A focus on increased costs and benefits needs to be accompanied by other considerations that accrue from enhanced relationships, image and position.

Selling certified wood products may also reflect organizational learning and knowledge management capabilities within a firm. Companies that sell certified wood benefit from systematic knowledge management such as a useful manual, a standard procedure and a computer application that their firm modified and developed within the firm. In addition, companies that sell certified wood are more likely than those that do not to have new personnel who can readily learn how to implement environmental strategy by working with knowledgeable, skilled employees and by studying written documentation. This benefit might be due to implementation of forest certification and chain of custody. The certification process requires a company to keep track of their inventory in order to track wood from the forest to the

shelves of retail stores so that the consumer can be assured that the wood they buy comes from a certified forest. This system might indirectly drive a company to have better organizational learning procedure.

Limitations

By restricting the sample to only the wood and forest products industries, the ability to generalize results to other industries or organizational settings is limited. However, a restricted sample does add more power to the findings, because uncovering findings in a sample in which the variance in the independent variables is restricted is more difficult than when the variance is large. Future research could ideally examine multiple industries.

Another issue is common method bias. All the measures used in this study were self-reported and allow for social desirability bias. Other key executives could have different opinions with respect to the issues we examined. Self-reported measures were necessary because the aim of this research was to evaluate executives' perceptions. This research could benefit from sampling groups of executives at a number of firms versus a single influential executive at each of a number of firms.

Additionally, this is cross-sectional research. If this study can be extended longitudinally in the future, there will be an opportunity to confirm the causal directions of relationships by using a longitudinal approach to measure perceptions of forest certification at Time 1 and actions relative to certification at Time 2. Finally, this study does not tap into regional markets. Future research should pay attention on regional markets in order to see whether differences in region affect perceived benefits of selling certified woods and ability to charge a premium.

Conclusions

The green building materials market is growing, which creates more demand for certified wood products. This research explored hardwood industry executives' perceptions of forest and green building certifications. The results suggest that perceptions of the outcomes and benefits of green building and forest certification differ significantly based on whether or not the company had adopted forest certification and offered certified products. The research considers the implications for companies considering adopting forest certification as well as for organizations providing certification schemes (e.g. FSC and SFI).

This research compared executive perceptions at firms that offer and do not offer certified products to illustrate that firms that have not yet adopted a certification may have misperceptions about the benefits and challenges of the certification. This implies that executives who are unwilling to adopt a certification may be making such decisions based on poor information. Companies that understand the certification can use that to their advantage in maintaining the existing market, whether or not a premium can be charged. Of the perceived benefits of selling certified woods examined, environmental preparedness benefits are tied directly to the image of a firm and indirectly to a firm's competitors. Executives at certified firms view selling certified woods as a means to decrease the potential for negative press, related to the natural environment, for their firm.

In conclusion, how executives think about forest certifications and what they believe would be benefits appears to influence the decision whether or not the certifications are adopted. Thus, it is important that organizations offering forest certifications understand the nature of any inherent biases for or against certification, as well as information sources used, when a target firm is deciding whether to become certified.

Chapter 4 References

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Table 4-1: Frequencies of Executives' Titles

Executive Title	Frequency
CFO	32
CEO	22
Human Resources Manager	17
Engineering Manager	13
Operations/Production Manager	7
Vice President of _____	7
COO	6
President	6
Marketing Manager	6
Chief Executive of a Business Unit or Division	4
Other	3
Sales Manager	1

Table 4-2 : Frequencies of Revenue for responding firms

Revenue (\$)	Frequency
0 - 5 Mil	32
5 - 10 Mil	26
10 - 20 Mil	34
20 - 40 Mil	33
40 + Mil	26

Table 4-3 : Frequencies of Premium Charged

Premium	Frequency
Do not sell certified woods	63
0%	26
1-3%	10
4-6%	11
7-9%	5
10-12%	7
13% +	2

Table 4-4: Independent Sample t-test Results of Green Certification Outcomes⁴

Variables	Sell Certified Wood	n	Mean	SD	t-value	p-value
Certification helps wood producers ...						
...to satisfy existing customer demand for green products.	No	65	2.85	1.064	-4.266	.000
	Yes	59	3.64	1.013		
...to gain new customers in existing markets.	No	62	3.03	1.024	-2.775	.006
	Yes	57	3.53	.908		
...to gain new customers in new markets.	No	65	3.28	.992	-1.688	.094
	Yes	59	3.56	.856		
...to improve their standing in the eyes of customers relative to competitors.	No	64	2.97	.975	-4.182	.000
	Yes	59	3.68	.899		
...to maintain their competitive position with competitors who have chosen to adopt green certification.	No	65	3.31	.967	-4.216	.000
	Yes	59	3.98	.799		
...to improve their competitive position with competitors who have chosen NOT to adopt green certification.	No	65	2.94	.998	-5.372	.000
	Yes	59	3.83	.834		
...to improve upon a company's existing strategy.	No	65	2.92	.907	-4.893	.000
	Yes	58	3.69	.821		
...to position their companies to pursue more stringent processes or product certifications (ex: ISO certification).	No	64	2.72	.934	-1.316	.191
	Yes	59	2.95	1.007		

⁴ The actual scales for items in this table are shown in the Appendix C of this dissertation.

Table 4-5: Independent Sample t-test Results of Green Building Certifications

Variables	Sell Certified Wood	n	Mean	SD	t-value	p-value
Green building is a fad	No	64	3.34	1.144	4.004	.000
	Yes	59	2.53	1.120		
Green building programs have provisions unfavorable to the wood products industry	No	63	4.13	.889	1.965	.052
	Yes	59	3.76	1.150		
Independent third-party programs should determine the minimum standards of performance and sustainability in defining green building	No	65	2.75	1.173	-2.029	.045
	Yes	59	3.17	1.101		
We have employees who are knowledgeable about green building programs	No	65	2.71	1.042	-5.705	.000
	Yes	58	3.69	.842		
Being knowledgeable about green building programs does not benefit our firm	No	65	3.17	1.069	3.239	.002
	Yes	58	2.57	.975		
Green building will drive the future demand of certified wood products	No	64	3.34	.963	-1.897	.060
	Yes	58	3.64	.718		
Demand for certified wood products is most strongly driven by commercial construction, not residential	No	65	3.65	.738	1.524	.130
	Yes	59	3.41	1.002		
We offer certified wood products because of green building trends	No	64	2.27	.877	-9.005	.000
	Yes	59	3.68	.860		
We offer certified wood products in order to satisfy demand from a variety of customers	No	61	2.54	.959	-8.420	.000
	Yes	59	3.80	.637		
We have employees who are knowledgeable in Chain of Custody	No	63	2.94	1.120	-7.767	.000
	Yes	59	4.19	.541		

Table 4-6: Independent Sample t-test Results of Pressures from Competitors

Variables	Sell Certified Wood	n	Mean	SD	t-value	p-value
My main competitors who sell certified wood products...						
...have benefited greatly from selling certified wood products.	No	65	2.58	1.286	-4.557	.000
	Yes	59	3.75	1.549		
...are perceived favorably by others in our industry.	No	64	3.45	1.368	-4.471	.000
	Yes	59	4.54	1.330		
...are perceived favorably by suppliers.	No	65	3.42	1.345	-3.766	.000
	Yes	59	4.32	1.332		
...are perceived favorably by customers.	No	65	4.11	1.264	-4.158	.000
	Yes	59	4.98	1.058		

Table 4-7: Independent Sample t-test Results of Learning Capability

Variables	Sell Certified Wood	n	Mean	SD	t-value	p-value
Our firm could write a useful manual describing the implementation of our environmental strategy	No	65	3.06	1.570	-2.124	.036
	Yes	58	3.64	1.423		
Large parts of the process to implement our environmental strategy are embodied in a standard procedure that our firm modified	No	64	3.41	1.630	-3.059	.003
	Yes	59	4.24	1.356		
Large parts of the process to implement our environmental strategy are embodied in a computer application developed within our firm	No	64	2.81	1.402	-2.827	.006
	Yes	58	3.53	1.417		
Our firm has extensive documentation describing critical parts of our implementation of our environmental strategy	No	64	3.14	1.612	-2.904	.004
	Yes	58	4.00	1.654		
New personnel can readily learn how to implement our environmental strategy by working with knowledgeable, skilled employees	No	64	3.80	1.774	-2.893	.005
	Yes	57	4.65	1.420		
New personnel can readily learn how to implement our environmental strategy by studying written documentation	No	63	2.98	1.561	-3.802	.000
	Yes	59	4.05	1.536		
Educating and training new personnel about our environmental strategy is a quick and easy job	No	64	3.78	1.732	.379	.706
	Yes	58	3.67	1.407		

Table 4-8: Reasons for not selling certified wood products

Reasons for not selling certified woods	Percentages
Too costly	37%
Lack of demand	18%
Already sustainable, don't need certification	16%
Not feasible/practical	14%
Disagree with the certification	11%
In the process of	5%

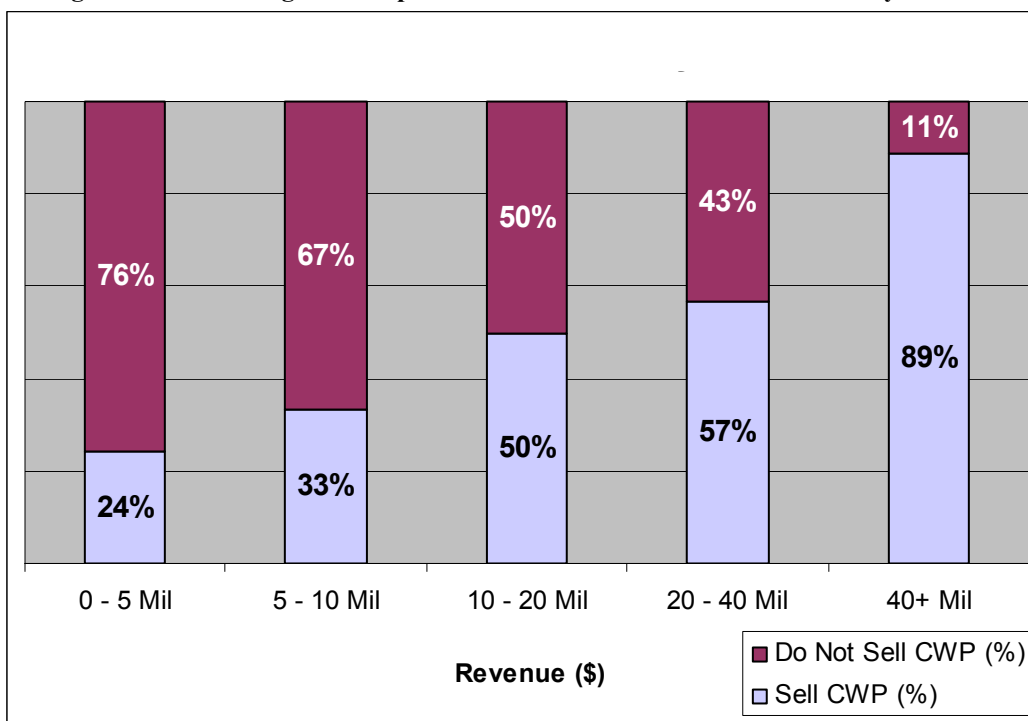
Figure 4-1: Percentage of Companies that Sell Certified Wood Products by Revenue

Figure 4-2: Percentage of Forest Products Certification Schemes Adopted by Responding Firms

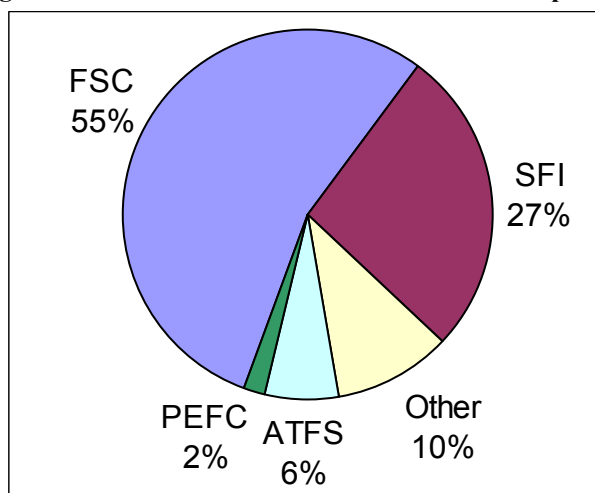
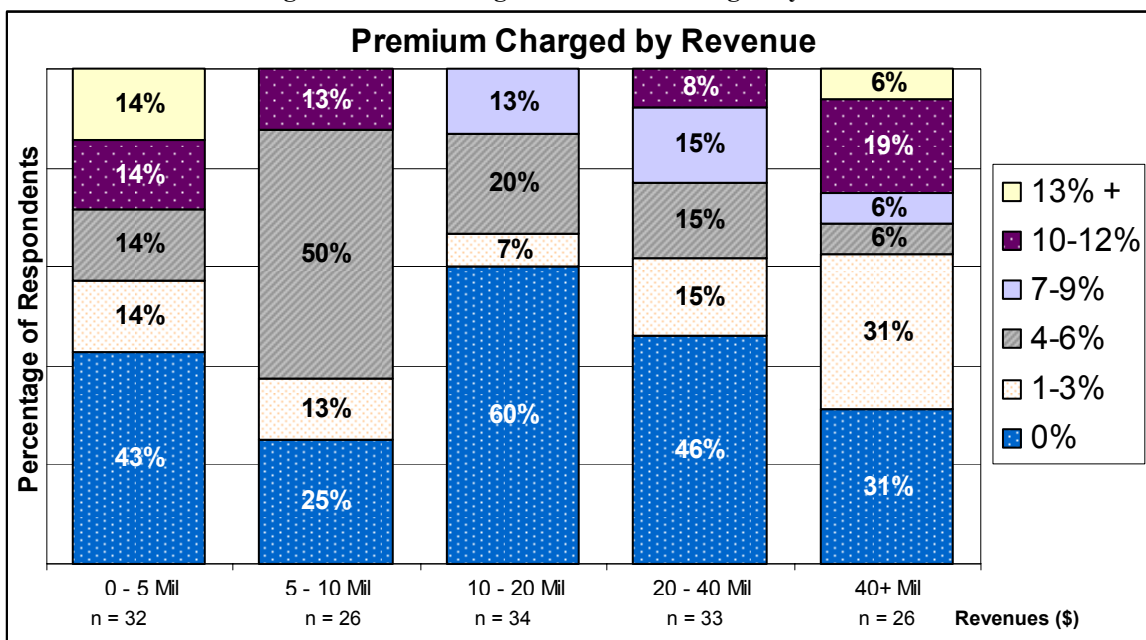


Figure 4-3: Percentage of Premium Charged by Revenue



Chapter 5

Resources Appropriation and Strategy Infusion as Corporate Responsibility Initiatives

Abstract

This study aims to investigate how variations in the institutional context affect the ways businesses pursue corporate responsibility. In particular, the purpose of this research is to understand how institutional pressures and instrumentalities influence choices regarding corporate responsibility such as resources appropriation and strategy infusion within a firm. This research fills a gap in sustainability literature by investigating the role of environmental slack and its effect on the relationships between corporate responsibility initiatives and both institutional pressures and instrumentalities. The data were collected from managers at 141 firms in the U.S. hardwood products industry in order to test our hypotheses. Based on the results, environmental slack had a positive effect on corporate responsibility initiatives. Slack resources also moderated the relationship between institutional pressures from customers and strategy infusion. However, environmental slack did not moderate the relationship between instrumentalities and corporate responsibility initiatives. This research has implications for helping organizations create and acquire slack resources necessary for adopting corporate responsibility initiatives, which in turn will help improve their sustainable environmental practices while achieving financial performance.

Introduction

If one views corporate responsibility initiatives as expressions of corporate strategy, identity, power, or dependency on specific actors and institutions, the managerial challenge becomes understanding why and how a corporation seeks to pursue corporate responsibility. Organizations can choose from a menu of corporate responsibility initiatives that focus on different issue areas or that differentially benefit stakeholder groups. Given that resources devoted to corporate responsibility are finite, how does a corporation decide which ones to pursue? This study focuses on the perception of the executives behind corporate responsibility initiatives within the firm. In particular, this study focuses on the initiatives of resources appropriation and strategy infusion within a firm. Regarding resources appropriation, this study measures how a firm possesses environmental resources that are unique from its competitors and valuable to the firm. For strategy infusion, this research measures how a firm creates, maintains, and diffuses strategic environmental knowledge within a firm.

The perspective of institutional sociology emphasizes the importance of coercive, normative and cognitive factors that affect firms' decisions to adopt a specific organizational practice (DiMaggio & Powell, 1983; Scott, 1995). An institutional perspective emphasizes legitimation processes and the tendency of institutionalized organizational structures and procedures to be taken for granted, regardless of their efficiency implications (Hoffman & Ventresca, 2002). Meyer and Rowan (1977) have emphasized organizations' needs to gain legitimacy in an institutional environment. Legitimacy enables a firm to compete more effectively, for it enables better access to resources, attracts better employees, and improves exchange conditions with partners (Aldrich & Fiol, 1994; DiMaggio & Powell, 1983; Oliver, 1991; Pfeffer & Salancik, 1978; Turban & Greening, 1997).

However, the institutional perspective does not address the fundamental issue of business strategy: why do organizations under the same level of institutional pressure differ in the strategies they pursue? Schendel and Hofer (1979) discuss levels of strategy where the levels can be considered in a hierarchical order, ranging from business unit strategy to corporate strategy to enterprise level strategy. The decision to adopt corporate responsibility initiatives occurs primarily at the level of business unit strategy rather than corporate strategy. In other words, the corporate responsibility initiatives addresses issues surrounding the question of how does a firm prosper in a given line of business.

Relative to business unit strategy, Miles and Snow (1978) discuss three types of problems that firms face: entrepreneurial, engineering, and administrative. Entrepreneurial problems lead the firm's decision-makers to address issues about which products, services, and markets they will target (Miles & Snow, 1978). These issues are oriented toward the external business environment of the firm. Engineering problems lead the firm's decision-makers to address issues about how to effectively and efficiently produce and deliver the targeted products and services. These issues are primarily oriented toward the internal processes of the firm. Finally, administrative problems lead the firm's decision-makers to address issues about how to best structure the organization to achieve the directions set forth by answering the entrepreneurial and engineering problems facing the firm (Miles & Snow, 1978). Issues surrounding administrative problems are internal to the firm.

The instrumentalities of adopting corporate responsibility initiatives have a broad scope and include satisfying existing customer demand for green products, gaining new customers, improving a firm's competitive posture relative to its direct competitors as well as foreign competition, improving the image of the firm in the eyes of environmental groups, being

prepared for future regulatory changes, and improving upon the firm's previous actions toward the natural environment. These instrumentalities are directly tied to the entrepreneurial problems facing firms and only indirectly tied to engineering or administrative problems. They involve domain selection and adjustment as well as activities directed toward the external entities of the firm.

In this study, I examine the environmental resources appropriation and strategic infusion that are internal to a firm. Building on an institutional perspective, I argue that firms adopt heterogeneous sets of environmental management practices because they interpret the pressures they face differently, in part due to firms varying levels of organizational slack. The full theoretical model of this study is shown in Figure 5-1. In this model, the hardwood industry managers of different firms are expected to perceive these pressures differently due to disparities in their level of organizational slack. This research aims to investigate how the variations in an institutional context affect the ways businesses pursue corporate responsibility. In particular, the purpose of this research is to understand how institutional pressures and instrumentalities influence choices regarding corporate responsibility initiatives of resources appropriation and strategy infusion within a firm. Corporate responsibility initiatives have emerged as an important source of innovation as well as a constraint on modern competitiveness. Corporate responsibility initiatives can be viewed as a cluster of a firm's strategies, resources, knowledge, and outcomes that are beyond the requirements of extant law (Carroll, 1999). These corporate responsibility initiatives may include using energy from alternative sources and offering products that surpass regulatory requirements.

----- Insert Figure 5-1 here -----

In the next section, the chapter first reviews the context and background of corporate responsibility initiatives, followed by a review of institutional pressures and instrumentalities. Next, the article reviews strategic adoption, resources appropriation, and strategic infusion. Then, the article presents the development of hypotheses followed by the study methods, accompanied by the details of confirmatory factor and multiple regression analyses. Finally, the results, discussion, conclusions, and the limitations and future directions are discussed.

Corporate Responsibility Initiatives

Resources Appropriation

A resource-based view of strategy asserts that every firm possesses unique resources that influence their strategic choices and ultimately their competitive advantage (Barney, 1991; Peteraf, 1993; Wenerfelt, 1984). The RBV focuses on how the value, rarity, imperfect mobility, and non-substitutive nature of resources within a firm yield to competitive advantage (Barney, 1991). These resources and capabilities may be financial, human, intangible, physical, organizational, or technological (Amit & Schoemaker, 1993; Barney, 1991; Farjoun, 1994). RBV is based on two assumptions. First, companies within an industry or sector may be heterogeneous with respect to the resources they possess. Second, resources may not be perfectly mobile across companies, and that heterogeneity can be perpetual (Amit & Schoemaker, 1993; Barney, 1991; Dierickx & Cool, 1989; Peteraf, 1993). These two assumptions show that every firm possesses unique resources that are not easily transferable to others.

A number of researchers have empirically applied RBV to the analysis of environmental strategies and profitability (Aragón-Correa, 1998; Christmann, 2000; Hart, 1995; Marcus & Geffen, 1998; Maxwell, Rothenberg, Briscoe, & Marcus, 1997; Rugman & Verbeke, 1998; Russo & Fouts, 1997; Sharma & Vredenburg, 1998). Fineman and Clarke (1996) have found that

firms' superior resources allow them to adapt to regulations, garnering advantages over their competitors more quickly and efficiently. Judge and Douglas (1998) have demonstrated that firms that successfully integrated the natural environment into their strategic processes achieved competitive advantages, both financially and environmentally. Clemens and Douglas (2006) have argued that environmental resources may consist of many components in a bundle. Examples of those component include additional accounting systems (Sinding, 2000), more extensive monitoring of waste streams (Sharfman, Ellington, & Meo, 1997), training, additional information requirements, and indirect costs involved in adopting any new system requiring organizational changes (Huybers & Bennett, 2003). In their analysis, Clemens and Douglas (2006) found that coercion is positively related to voluntary green initiatives, but the relationship is contextual and depends on the how a firm devotes their resources to environmental strategies.

Strategy Infusion

Strategy infusion, the ability to learn and inculcate the knowledge within the firm, is among the most important capabilities that a firm can possess. Resources, dynamic capabilities, and knowledge are closely interlinked (Barney, Wright, & Ketchen Jr., 2001). The current understanding of these capabilities is limited, however, and thus these capabilities, along with the ways they can generate competitive advantages, deserve a great deal of empirical attention (Barney et al., 2001). Strategy infusion can contribute to a bundle of superior environmental resources, which are based on a firm's relationship with the natural environment as a source of competitive advantage. It is important for a firm to possess learning capabilities in order to increase its corporate responsibility initiatives. Properly developed corporate responsibility initiatives can lead to environmental performance and ultimately to financial performance and competitive advantage (Orlitzky, Schmidt, & Rynes, 2003). Despite a competitive advantage

gained from learning capabilities, some organizations that ignore competition will be less inclined to learn from experience and will be less competent at competing (Engwall, 1976). These learning challenges can produce disadvantages and cause an organization to become incapable of coping with an environment that cannot be arbitrarily enacted (Hannan & Freeman, 1984).

Differences exist between resources appropriation and strategy infusion. The main assumptions associated with resources appropriation are the existence of heterogeneous resources among firms within an industry or industry group, and the notion that not all resources need to be nurtured or developed. The primary assumptions of strategy infusion place importance on the role of cognition, on the benefits of learning, on the development of learning capabilities by firms, and on learning and knowledge within a group context. Lieberman (1984) examined strategy infusion with his research conclusions centered on learning by doing and learning by spending. Expanding on this idea of learning as a process, Fiol and Lyles (1985) have proposed the concept of organizational learning, which is improving organizational action through better knowledge and understanding. They have also discussed the differences between lower-level learning and higher-level learning. The latter includes the analysis of causation and associations which can affect an entire organization, and it sheds some light on how resources can synergize to yield unique possibilities and opportunities. This conception of higher level learning is in sync with resources appropriation of firms that create a competitive advantage (Barney, 1991).

Cohen and Levinthal's (1990) concept of absorptive capacity and Benner and Tushman's (2002) investigation into exploitive versus explorative activities exemplify how cognition is central to strategy infusion. Benner and Tushman (2002) departed from the theme of "learning is

beneficial” and instead posited that different types of learning are beneficial for different outcomes. Hayward (2002) and Haleblain and Finkelstein (1999) have investigated the role of experience in relation to learning. Haleblain and Finkelstein (1999) have also focused on the concept of organizational behavioral learning. Expanding on the notion of experience in relation to learning, Zollo and Singh (2004) have explored knowledge codification and its role in the experience-learning relationship.

Institutional Pressures

Increasing attention by organizational theorists to environmental issues has increased the importance of understanding the institutional pressures facing firms. Institutional theorists' approaches to environmental issues provide insights about the fundamental forces that influence social perception, behavior, and action on environmental issues. Thus, institutional researchers highlight both the fundamental sources of environmentally destructive behavior as well as the enactment of solutions (Hoffman, 2003; Hoffman & Ventresca, 2002). Because institutional forces have such a significant effect on environmental issues, several research studies have been performed using the environment as a context for researching management issues and extending institutional theory (Bansal & Gao, 2006; Hoffman, 1999; Jennings & Zandbergen, 1995; Lounsbury, 2001). Despite a number of studies that use the environment as a context to extend institutional theory, only a few empirical studies have investigated the relationship between institutional pressures and environmentally focused management (Bansal, 2005; Berrone, Gelabert, & Fosfuri, 2009; Jiang & Bansal, 2003).

Pressures from Customers

Coercive pressures are defined by DiMaggio and Powell (1983) as formal or informal pressures exerted on organizations by other organizations upon which they are dependent.

Arguments about coercive pressures stem mainly from the resource-dependence perspective (DiMaggio, 1988). Thus, coercive pressures on organizations may stem not only from regulatory bodies, but also from resource-dominant organizations as well as parent corporations. Teo, Wei, and Benbasat (2003) have investigated the effect of coercive pressure in the context of financial electronic data interchange adoption. Their study found that coercive pressures stemmed mainly from the dominant suppliers and dominant customers (Teo et al., 2003).

Dependence on customers arises when organizations rely heavily on customers who account for much of their sales, and when those customers have alternative suppliers (Teo et al., 2003). If dominant customers demand processes and/or products that require environmental certifications or environmentally friendly business processes and products, the organization is likely to respond to these demands. Organizations characterized by an institutionalized dependency pattern are likely to exhibit similar structural features such as formal policies, organizational models, and programs (Teo et al., 2003). In this research, the structural feature of interest is corporate responsibility initiatives.

Corporate responsibility initiatives reflect managers' perceptions of external stakeholders, such as suppliers and customers, and the need to respond to their interests. Example components of corporate responsibility initiatives are, for instance, sustainable development, protecting the environment for future generations, and responsibility to the community and to society (Gladwin, Kennelly, and Krause, 1995; Hart, 1997; Menon & Menon, 1997). In these ways, corporate responsibility initiatives increase the legitimacy of an organization in the eyes of external institutions such as customers and suppliers.

In sum, organizations may perceive pressures from dominant customers to acquire legitimacy or status, or they may perceive pressure to demonstrate their fitness to do business

with other dominant organizations. Thus, hypotheses 1a and 1b (H1a and H1b) regarding institutional pressures from customers and their effects on firms' corporate responsibility initiatives are proposed.

H1a: The institutional pressures from customers have a positive effect on resources appropriation.

H1b: The institutional pressures from customers have a positive effect on strategy infusion.

Pressures from Competitors

Mimetic pressures may cause an organization to change over time to become more like other organizations in its environment (DiMaggio & Powell, 1983). Mimetic pressures manifest themselves in two ways: the prevalence of a practice in the focal organization's industry, and the perceived success of organizations within the focal organization's industry that have adopted the practice (Haveman, 1993; Teo et al., 2003). An organization will imitate the actions of other structurally equivalent organizations because those organizations occupy a similar economic network position in the same industry, and thus they share similar goals, produce similar commodities, share similar customers and suppliers, and experience similar constraints (Burt, 1987; Teo et al., 2003).

Besides taking cues from the collective actions of similar others, organizations are particularly apt to imitate the behaviors of those whom they perceive as successful (Burns & Wholey, 1993; DiMaggio & Powell, 1983; Haunschild & Miner, 1997; Teo et al., 2003). A firm's environmental strategy focus reflects the degree that environmental issues are integrated into the strategic planning process (Banerjee, 2001). Among the strategic actions influenced by environmental concerns are new product development, the location of new manufacturing plants,

increased R&D investments, technology development (especially in pollution prevention and waste management), and changes in product and process design. Organizations can learn vicariously, copying or avoiding certain organizational practices according to their perceived impact or outcomes (Levitt & March, 1988; Miner & Haunschild, 1995; Teo et al., 2003). Strategically copying fruitful products or practices for a second-mover advantage may allow an organization to unwittingly acquire some unexpected or unsought unique advantages (Lieberman & Montgomery, 1988). The profitability of an innovation has been proposed as a key factor determining its rate of adoption (Rogers, 1995). Mimicking the behaviors of other successful organizations can also accrue an external referent of prestige (Perrow, 1961). Thus, hypotheses 2a and 2b (H2a and H2b) regarding institutional pressures from competitors and their effect on firms' corporate responsibility initiatives are proposed.

H2a: The institutional pressures from competitors have a positive effect on resources appropriation.

H2b: The institutional pressures from competitors have a positive effect on strategy infusion.

Instrumentalities of Customer Demand and Competitive Posture

At the core of the conceptualization of instrumentality is the notion of the benefits and challenges facing firms. Many authors have emphasized the importance of the participation by top managers in successful firm environmental initiatives (Buzzelli, 1991; Lawrence & Morell, 1995; Masurel, 2007; Post & Altman, 1994; Winn, 1995). Masurel (2007) asserts that the entrepreneurial decisions of top managers serve as key motivators for firms to invest in voluntary environmental measures. In a review of models that describe the adaptation of organizations to issues in the natural environment, Post and Altman (1994) have developed a three-phase

corporate greening model in which top managers are prominent in the success of each phase of the model. Top managers make decisions that directly impact the strategic orientation of the firm (Child, 1972). How they interpret and make sense of their business environment influences organizational outcomes (Daft & Weick, 1984; Hambrick & Mason, 1984; Weick, 1979).

The labels that firms' decision-makers attach to strategic issues influence the meanings attached to those issues and firms' subsequent strategic choices (Dutton & Jackson, 1987). Instrumentalities are salient categories which organizational decision-makers consider strategic issues (Dutton & Jackson, 1987). There has been considerable research into the ways managers interpret issues in the business environment as instrumentality (Andersson & Bateman, 2000; Dutton & Jackson, 1987; Jackson & Dutton, 1988; Sharma, 1997; Sharma & Nguan, 1999). Such an approach to issues involving the natural environment has also been shown to be a relevant approach for explaining firms' responsiveness to environmental issues (Sharma, 1997; Sharma & Nguan, 1999).

In their study of seven firms in the Canadian oil and gas industry, Sharma and Vredenburg (1998) found that managers of environmentally proactive firms (firms that pursued more voluntary environmental initiatives) perceived competitive benefits associated with environmental responsiveness. Conversely, managers of environmentally reactive firms perceived environmental responsiveness as detracting from performance. Sharma and Nguan (1999) also found that firms' environmental strategies were influenced by how managers interpreted environmental issues as opportunities rather than threats. Specifically, firms with more proactive and voluntary environmental strategies had managers who saw environmental issues as opportunities rather than threats (Sharma, 1997; Sharma & Nguan, 1999). For voluntary environmental initiatives, managers' perceptions of the benefits tied to those initiatives are an

important determining factor in their adoption, whereas the perception of threats diminishes the likelihood of adopting voluntary environmental initiatives.

At the core of the conceptualization of instrumentality is the notion of the benefits and challenges facing firms. The labeling of benefits and challenges helps to bring aspects of the decision to adopt corporate responsibility initiatives closer to the daily, routine activities of the firm, rather than the more abstract framing offered by labels such as opportunities and threats. Using the labels of benefits and challenges, but building upon the ideas and relationships discussed in previous research on instrumentality, top managers who perceive more instrumentality of customer demand and competitive posture are more likely to pursue corporate responsibility initiatives than top managers who perceive less instrumentality. Thus, hypotheses 3a, 3b, 4a, and 4b (H3a, H3b, H4a, and H4b) regarding institutional pressures from customers and their effect on firms' corporate responsibility initiatives are proposed.

H3a: The instrumentality of customer demand has a positive effect on resources appropriation.

H3b: The instrumentality of customer demand has a positive effect on strategy infusion.

H4a: The instrumentality of competitive posture has a positive effect on resources appropriation.

H4b: The instrumentality of competitive posture has a positive effect on strategy infusion.

Environmental Organizational Slack

Organizational slack allows firms to make investments in resources and capabilities that may not have an immediate pay-off (Bansal, 2005; Levinthal & March, 1981). It can help a firm develop the resources and capabilities necessary to improve the speed and degree to which it can

adapt to its external environment (Bansal, 2005; Cheng & Kesner, 1997). Bourgeois (1981) has defined organizational slack as “that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change” (p.84).

Bansal (2005) has investigated the relationship between slack and sustainable development. She found that environmental slack permits firms the latitude to seek creative new solutions for corporate sustainable development in many circumstances. For instance, many respondents in her study noted that large firms, firms with extra financial resources, or large environmental health and safety (EHS) departments were more likely to implement new practices. In addition, the financial benefits that accrue from sustainable development can often be long term and diffuse, for example, through improved corporate reputation or social capital. Environmental slack provides resources for innovation and change, thereby enhancing a firm's ability to adapt and react to the institutional pressures (Cheng & Kesner, 1997; Cyert & March, 1963). Taken together, this suggests that environmental slack can help a firm to possess the resources and capabilities necessary to improve the speed and degree to which it can adapt to its environment strategy. Environmental slack can also help a firm to inculcate the knowledge and capabilities necessary to adopt its environmental strategy. Thus, hypotheses 5a and 5b (H5a and H5b) are proposed to investigate the relationship between environmental slack and its effect on corporate responsibility initiatives.

H5a: Environmental slack has a positive effect on resources appropriation.

H5b: Environmental slack has a positive effect on strategy infusion.

Moderating Effects of Environmental Slack on Corporate Responsibility Initiatives

Because firms are fundamentally economic institutions, firms' financial responsibility implies obligation, accountability and stakeholder salience, whereas corporate social responsibility is regarded as discretionary for firms (Carroll, 1999; Mitchell, Agle, and Wood, 1997). However, when there are pressures from stakeholders such as customers and competitors for firms to become socially and environmentally conscientious, corporate responsibility initiatives have legitimacy with the power and urgency necessary to become salient to organizational decision-makers. A firm's contributions toward corporate responsibility depend not only on the CEO's discretion in decision-making but also on the availability of discretionary resources (Seifert, Morris, & Bartkus, 2004). Discretionary resources constitute organizational slack, which is defined as spare or uncommitted resources, a cushion of resources beyond the minimum necessary to maintain the organizational coalition, or excess resources beyond those needed to produce a given level of output (Cyert & March, 1963; Nohria & Gulati, 1996; Seifert et al. 2004). Forms of slack resources include extra raw materials or labor, excess work-in-process inventory or machine capacity, and excess cash, which is the most discretionary form (Sharfman, Wolf, Chase, & Tansick, 1988).

Buchholtz, Amason, and Rutherford (1999) found a positive relationship between perceived organizational slack, the CEO's rating of the firm's resource levels relative to other firms and relative to needs, and corporate responsibility. Several correlation studies found that firms' financial performance was more positively related to their subsequent social performance than to their prior social performance – results that the authors attributed to profitable firms' likelihood of having more slack resources to devote to social responsibilities (Margolis and

Walsh, 2003; McGuire, Sundgren, & Schneeweis, 1988; Preston & O'Bannon, 1997; Waddock & Graves, 1997).

Managers decide to adopt corporate responsibility initiatives when they perceived institutional pressures to increase their legitimacy. These institutional pressures come from dominant customers who want a firm to be socially and environmentally responsible as well as from competitors who are successful from being socially and environmentally responsible. Failure to adopt can cause firm's legitimacy. Adopting corporate responsible initiatives is a critical strategy in satisfying these customers and competing with these competitors. However, not every firm has capability to adopt corporate responsible initiatives. Environmental slack allows an organization to adapt successfully to external pressures (Bourgeois, 1981).

Environmental slack is therefore hypothesized to moderate the relationship between institutional pressures and corporate responsibility initiatives. Thus, hypotheses 6a, 6b, 7a, and 7b (H6a, H6b, H7a, and H7b) are proposed to investigate the relationship between environmental slack and its effect on the relationship between institutional pressures and corporate responsibility initiatives.

H6a: Environmental slack will be associated with stronger relationships between institutional pressures from customers and resources appropriation.

H6b: Environmental slack will be associated with stronger relationships between institutional pressures from customers and strategy infusion.

H7a: Environmental slack will be associated with stronger relationships between institutional pressures from competitors and resources appropriation.

H7b: Environmental slack will be associated with stronger relationships between institutional pressures from competitors and strategy infusion.

Managers decide to adopt corporate responsibility initiatives when they perceive instrumentalities of being socially and environmentally responsible. These instrumentalities include gaining competitive advantage, satisfying customer demands, and increasing market shares. Adopting corporate responsible initiatives is a critical strategy in achieving the instrumentalities. However, not every firm has capability to adopt corporate responsible initiatives. Environmental slack allows an organization to adapt successfully to internal adjustment (Bourgeois, 1981). Environmental slack is therefore hypothesized to moderate the relationship between instrumentalities and corporate responsibility initiatives. Thus, hypotheses 8a, 8b, 9a, and 9b (H8a, H8b, H9a, and H9b) are proposed to investigate the relationship between environmental slack and its effect on the relationship between instrumentalities and corporate responsibility initiatives.

H8a: Environmental slack will be associated with stronger relationships between the instrumentality of customer demand and resources appropriation.

H8b: Environmental slack will be associated with stronger relationships between the instrumentality of customer demand and strategy infusion.

H9a: Environmental slack will be associated with stronger relationships between the instrumentality of competitive posture and resources appropriation.

H9b: Environmental slack will be associated with stronger relationships between the instrumentality of competitive posture and strategy infusion.

Methods

Data Collection

The data were collected via web surveys to reduce cost and save time. To increase the response rate and participants' willingness to respond, the researchers contacted the major trade

associations in the hardwood products industry and asked for their endorsements. Members of three groups made up the samples chosen for this study: 1) the Wood Component Manufacturers Association (WCMA); 2) the Hardwood Manufacturers Association (HMA); and 3) the National Hardwood Lumber Association (NHLA).

In December of 2009, an initial email letter was sent to possible participants with a message from each trade association describing the research and containing a link to an online survey. The web questionnaires targeted the top managers of the WCMA, HMA, and NHLA member firms. One week after the first email was sent out, a follow-up email was sent to remind potential participants who had not completed the online survey. A week after that, a final follow-up email was sent. This method followed the outline recommended by Dillman (2000).

The unit of analysis is the firm. The survey respondents were executives of wood products companies within the United States. After the respondents received the email from their trade association, they could click on a link in the email to bring them to the online survey. The welcome page of the survey contained a welcome and an implied consent form containing IRB approval and a statement of confidentiality (IRB #32410). The survey took about 10-15 minutes from start to finish. After the respondent finished and clicked on the last page of the survey, the data were sent to the database. The complete databases were received at the end of January 2010.

To increase their willingness to participate in the survey, the respondents were informed that they would receive an executive summary report at the end of the study. This report would help them to understand executive perceptions of green building trends and the demand for certified wood products. The questionnaires did not contain any participant identifiers. In the statement of confidentiality, the respondents were assured that nobody would see their answers

except the researchers. Moreover, the statement of confidentiality was re-stated when the respondents were asked sensitive questions.

Survey Sample

This research investigates executives' perceptions of the key U.S. forest certification systems by surveying managers from two key segments of the hardwood producing industry. The survey sample was drawn from the wood and forest products industry for several reasons. First, due to the increasing attention being paid to environmental preservation and conservation, the wood and forest products industry has come under scrutiny for its use of natural resources (Mater, 2005). Although modern sustainable forestry is environmentally conscious, many people perceive the industry to be exploiting natural resources (Bowyer, 2004; Polzin & Bowyer, 1999) and have various expectations about how wood and forest products businesses should behave (Panwar, Rinne, Hansen, and Juslin, 2006). In addition, because of rising labor and material costs, many wood and forest products businesses are looking for inexpensive labor and materials in other countries, which also raises a red flag for public perceptions of corporate environmentalism. Finally, many wood and forest products companies are adopting or looking to adopt some form of an environmental certification program to make their stakeholders aware of their commitment to the environment (Bukowski, 2008). Because of these issues, it is important that the wood and forest products industry pays special attention to corporate environmentalism.

The data was collected from executives at primary (e.g., lumber) and secondary (e.g., components, flooring, etc.) producers; they were asked about their perceptions of green building in relation to certified wood products. Three groups make up the samples chosen for this study: 1) the members of the Wood Component Manufacturers Association (WCMA); 2) the Hardwood Manufacturers Association (HMA); and 3) the National Hardwood Lumber Association

(NHLA). A field study strategy (McGrath, Martin, and Kulka, 1982) was used to study these samples. The total number of usable surveys was 141.

Almost sixty percent (58%) of the participants were males. About seventy five percent (74.5%) of participants had relatively high organizational tenure. One hundred and five participants had been with their firms for 10 or more years, while 36 participants had been with their firms for fewer than 10 years. Through the self-selection process using the web surveys, all of the participants were top managers and were familiar with decision-making related to corporate responsibility initiatives. Around 23% of the firms in this sample have revenues of less than \$5 million. Almost 25% are within the \$10 – \$20 million revenue range, and approximately 35% have revenues of more than \$20 million. In addition to revenue, the number of employees was used to measure the size of the firm. The median number of employees for this sample was 41.50, with an interquartile range of 82.00. Firm age had a mean of 50.00 years and the standard deviation was 34.63.

Measures

Dependent Variables

Corporate responsibility initiatives include resources appropriation and strategy infusion.

Resources appropriation. The resources appropriation was adapted from a variable used by Clemens and Douglas (2006). Three items were used to measure resource value; and four items were used to measure resource rareness. These items were then averaged to create a single measure. This measure of resources appropriation consisted of seven items. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include: “Your customers or suppliers consider your environmental strategy unusual”, “The implementation of your environmental strategy is considered valuable

within your firm”, and "Other efforts within your firm could easily substitute for the implementation of your environmental strategy”. The Cronbach’s alpha of resources appropriation in this study is 0.84.

Strategy Infusion. The strategy infusion measure was adapted from a variable used by Clemens and Douglas (2006) and by Kogut and Zander (2003). Three items were used to measure codifiability, and four items were used to measure teachability. This measure of strategy infusion consisted of seven items. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include: “Your firm could write a useful manual describing the implementation of your environmental strategy”, and “Education and training new environmental personnel is a quick and easy job”. The Cronbach’s alpha of strategy infusion in this study is 0.87.

Independent Variables

Independent variables include institutional pressures, from both customers and competitors, as well as instrumentality of customer demand and competitive postures.

Institutional Pressures from Customers. The institutional pressures from customers, or the perceived dominance of customers, have been studied by Bridges and Villemez (1991) and by Teo, Wei, and Benbasat (2003). This measure was used as a construct of resource dependence, which is defined as the extent to which a focal organization depends on constituents in its environment for critical resources (Pfeffer & Salancik, 1978). Resource dependence is a component of the coercive pressures on an organization. Coercive pressures are the conformist pressures on a focal organization emanating from other organizations upon which it depends for critical resources, or from institutions upholding the cultural expectations of the society in which it functions (DiMaggio & Powell, 1983). This measure of institutional pressures from customers

consisted of four items. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. The Cronbach’s alpha of institutional pressures from customers in this study is 0.73.

Institutional Pressures from Competitors. The measure of the institutional pressures from competitors, or the perceived success of competitors, has been studied by Teo et al. (2003). This measure is a component of mimetic pressures, which are the pressures experienced by a focal organization to model itself after other organizations in its organizational field when faced with uncertainty over its goals, technologies, means-ends relationships, et cetera (DiMaggio & Powell, 1983). This measure of institutional pressures from competitors consisted of four items. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. The Cronbach’s alpha of institutional pressures from competitors in this study is 0.85.

Instrumentality. The instrumentality measure investigated the perceived benefits of selling certified wood products. The two main themes of green certification outcomes investigated in this study were customer demand and competitive advantage. For each theme, the measure of instrumentality consisted of four items. Managers were asked to rate the extent to which they agree with statements regarding how green certification helps wood producers. Each of the items had a 5 point Likert-type response format anchored by (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree. Examples of survey items include: “Certification helps wood producers to satisfy existing customer demand for green products” and “Certification helps wood producers to improve upon a company’s existing competitive strategy”. The Cronbach’s alpha of instrumentality of customer demand in this study is 0.86. The Cronbach’s alpha of instrumentality of competitive posture in this study is 0.84.

Environmental Slack. The environmental slack of a firm has been used as a variable by Bansal (2005) and Nohria and Gulati (1996). The measure of environmental slack is used to recognize a firm's extra liquidity that could be invested in corporate responsibility initiatives. This measure of organizational slack consisted of seven items. Examples of survey items include: "Our firm copes with increased environmental demands by paying excess prices for raw materials that meet higher environmental standards." and "Our firm copes with increased environmental demands by buying more expensive equipment than strictly required resulting in improved environmental performance such as lower emissions or fuel optimization." Each of the items had a 5 point Likert-type response format anchored by (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree. The managers then made their choice based on the value of the prospective loss in output. Across this range of responses, the higher the reported loss in output, the lower the slack. The Cronbach's alpha of environmental slack in this study is 0.66.

Control Variables

Firm age. The age and size of the firm are used as control variables because of concerns about liabilities due to a firm's small size or newness (Stinchcombe, 1965), which may affect its resources and capabilities. A firm's age was measured by a single item in the questionnaires: "How many years has your firm been in operation?" This measure was used for the inertial or institutional effects of a firm (DiMaggio & Powell, 1991; Hannan & Freeman, 1977).

Firm size (number of employee and revenue). Larger firms tend to be more visible and attract more scrutiny by media and stakeholders, which influences both firms' legitimacy and reputation (Fombrun, 1996; Suchman, 1995). Given that both resource-based and institutional processes vary based on firm size, firm size is treated as a control variable (Bansal, 2005). The

self-reported 2008 annual sales of firms was asked in the questionnaires. Like firm age, firm size is also used for the inertial or institutional effects of the firm (DiMaggio & Powell, 1991; Hannan & Freeman, 1977). In this study, firm size is measured by the number of employees and firms' revenue. Number of employees was measured by a single item in the questionnaires: "Approximately how many full-time production employees are working for your company today?" Firm revenue was measured by a single item in the questionnaires: "What were your company's total 2008 sales?"

Results

Table 5-1 contains the means, standard deviations, coefficient alpha, and Pearson correlations of the measures of corporate environmentalism, customer pressure, competitor pressure, environmental resources, environmental knowledge, and organizational slack. Almost all of the measures exceeded the cutoff coefficient alpha value of 0.70, as suggested by Nunnally (1978). There was only one exception: organizational slack had a coefficient alpha value of 0.66. Also, each measure's coefficient alpha was below 0.95. This demonstrates the internal consistency of the measures, without the items of a single measure being too similar as to create a redundancy issue. None of the Pearson correlations were exceedingly high.

----- Insert Table 5-1 here -----

Prior to conducting confirmatory factor analyses, exploratory factor analyses were done on an initial sub-sample of the data. The exploratory factor analyses yielded a four-factor target model. The constructs of corporate responsibility initiative, organizational slack, customer pressure, and competitor success were represented by one factor each. Each of these factors had internal factor loadings above 0.50. All of the factors within the four-factor EFA had cross loadings less than 0.30.

Confirmatory factor analyses were conducted to test the fit of the targeted four-factor model. The fit statistics of the confirmatory factor analyses are shown in Table 5-2. The three-factor model was tested to validate the four-factor target model from the previous exploratory factor analysis.

----- Insert Table 5-2 here -----

The fit indices show that a two-factor model does not fit the data well. Looking at all the models tested, the change in chi-square, compared to the target model, is lowest ($X^2 = 4.80$, $df = 160$) between the target model and the over-factored five factor model. Along with the chi-square, another badness of fit statistic, the Root Mean Square Error of Approximation (RMSEA), is lower for the target model versus the over-factored five factor model. The difference in the values of SRMR and RMSEA for the target model versus the over-factored model is small ($\Delta RMSEA = 0.001$).

The Goodness of Fit Index (GFI), the Non-Normed Fit Index (NNFI) and the Comparative Fit Index (CFI) also show support for the target model over other possible models. The NNFI of the target model is slightly higher than all other models, and is very similar to the NNFI of the over-factored model. The difference in the NNFI between the target model and the over-factored model is 0.001. The CFI of the target model is higher than the three-factor model. The difference in the CFI between the target model and the over-factored model is 0.002.

Market Pressure and Instrumentality as Main Effects

Four of the proposed hypotheses, hypotheses 1a, 1b, 2a, and 2b were tested with main effects of institutional pressures only regression models. The results of regression analysis predicting resources appropriation is shown in Table 5-3 while the results of regression analysis predicting and strategy infusion is shown in Table 5-4. Among these four hypotheses, only

hypothesis 2b was significant. When resources appropriation was regressed on institutional pressure from customers, the test of hypothesis 1a, the regression analysis was not significant ($\beta = .04, p = .27$). The regression equation for testing hypothesis 1b, regressing strategy infusion on institutional pressure from customers, was also not significant ($\beta = -.04, p = .48$). In addition, or hypothesis 2a, when resources appropriation was regressed on institutional pressure from competitors, the results were not significant ($\beta = .10, p = .31$). However, when strategy infusion was regressed on institutional pressure from competitors, the test of hypothesis 2b, the regression analysis was significant ($\beta = .17, p < .10$).

----- Insert Table 5-3 here -----

Four of the proposed hypotheses, hypotheses 3a, 3b, 4a, and 4b were tested with main effects of instrumentality only regression models. None of these four hypotheses were significant. For hypothesis 3a, the regression equation, when resources appropriation was regressed on instrumentality from customer demand, the results were not significant ($\beta = .01, p = .71$). However, the regression equation for testing hypothesis 3b, regressing strategy infusion on instrumentality from customer demand, was not significant ($\beta = -.12, p = .51$). When resources appropriation was regressed on instrumentality from competitive posture, the test of hypothesis 4a, the regression analysis was not significant ($\beta = -.17, p = .97$). When strategy infusion was regressed on instrumentality from competitive posture, the test of hypothesis 4b, the regression analysis was also not significant ($\beta = -.10, p = .38$).

----- Insert Table 5-4 here -----

Two of the proposed hypotheses, 5a and 5b, were tested with environmental slack as a main effect in the regression models. Both of the hypotheses were significant. When resources appropriation was regressed on environmental slack, the test of hypothesis 5a, the regression

analysis was significant ($\beta = .52, p < .01$). For hypothesis 5b, when strategy infusion was regressed on environmental slack, the results were significant ($\beta = .46, p < .01$).

Environmental Slack as a Moderator

I proposed that environmental slack moderates the effects of market pressure and instrumentality on corporate environmentalism, resources appropriation, and strategic infusion. This moderating relationship is assumed to be linear. I tested moderators using the multiplication terms between environmental slack and institutional pressures, and between environmental slack and instrumentalities. Model 3 used resources appropriation as a dependent variable; while Model 5 used strategy infusion as a dependent variable. The regression equations testing models 9, shown in Table 5-3 and 5-4, were significant ($F = 2.54$ and $F = 5.47, p < .01$ respectively).

Four of the proposed hypotheses, hypotheses 6a, 6b, 7a, and 7b were tested with interactive effects of institutional pressures and environmental slack regression models. Among these four hypotheses, only hypothesis 6b was significant. When resources appropriation was regressed on the interaction between institutional pressures from customers and environmental slack, the test of hypothesis 6a, the regression analysis was not significant ($\beta = .11, p = .74$). For hypothesis 6b, when strategy infusion was regressed on the interaction between institutional pressure from customers and environmental slack, the result was significant ($\beta = .43, p < .01$). When resources appropriation was regressed on the interaction between institutional pressure from competitors and environmental slack, the test of hypothesis 7a, the result was not significant ($\beta = -.07, p = .54$). Additionally, when strategy infusion was regressed on the interaction between institutional pressures from competitors and environmental slack, the test of hypothesis 7b, the regression analysis was not significant ($\beta = .12, p = .35$).

Four of the proposed hypotheses, hypotheses 8a, 8b, 9a, and 9b were tested with interactive effects of instrumentalities and environmental slack regression models. None of these four hypotheses was significant. When resources appropriation was regressed on the interaction between instrumentality of customer demand and environmental slack, the test of hypothesis 8a, the result was not significant ($\beta = -.06, p = .38$). When strategy infusion was regressed on the interaction between instrumentality of customer demand and environmental slack, the test of hypothesis 8a, the result was not significant ($\beta = 0.10, p = .52$). When resources appropriation was regressed on the interaction between instrumentality of competitive posture and environmental slack, the test of hypothesis 9a, the regression analysis was not significant ($\beta = .12, p = .44$). When strategy infusion was regressed on the interaction between instrumentality of competitive posture and environmental slack, the regression analysis was not significant ($\beta = -0.31, p = .68$). In sum, only interaction, H6b, was found to be significant. Figure 5-2 shows hypothesis 6b, the relationship between institutional pressures from customers and strategy infusion moderated by environmental slack.

----- Insert Figures 5-2 here -----

Discussion

This research attempts to address how institutional pressures and instrumentalities influence choices regarding corporate responsibility initiatives such as resources appropriation and strategy infusion. Firms can respond to these institutional pressures by adopting various environmental management practices. Although much attention has been paid to institutional pressure from regulation, the finding of this study shows that institutional pressure from competitor is a critical determinant to the implementation of environmental strategic infusion. This finding highlights the importance of mimetic pillar.

The mimetic pressure from competitor can increase creative problem solving (Sharma and Vredenburg, 1998). For example, when perceived that its competitors were successful from becoming more socially and environmentally responsible, an organization can implement varying elements of a strategy infusion such as creating an environmental policy, a formal training program, and instigating routine environmental auditing. In addition, management can choose to have the comprehensiveness of their environmental management program validated by a third party by pursuing forest certification such as SFI or FSC. Management can also convey the importance of environmental issues by including them as a performance evaluation criterion.

Furthermore, this paper has argued that slack plays a moderating role in corporate responsible initiatives. It can facilitate the search for environmental improvements and can allow some firms to initiate environmental change. This research incorporates slack more fully into research on corporate responsible initiative. Based on the results, environmental slack had a positive effect on resources appropriation and strategic infusion. The nature of the slack resource facilitates corporate responsibility initiatives. Environmental organizational slack in the form of staff time, for example, could facilitate the implementation of an environmental management system or investment in more environmentally sound pet projects at operating units.

Environmental slack also moderated the relationship between institutional pressures from customers and strategic infusion; slack resources did not moderate the relationship between instrumentalities and both dependent variables: resources appropriation and strategic infusion. From the findings, environmental slack changes the direction of the relationship between institutional pressures from customers and strategy infusion. When an organization possesses low environmental slack, institutional pressure from customers is negatively related to strategy infusion. When an organization possesses high environmental slack, the relationship between

pressures from customers and strategy infusion is shown to be positive. This means that, without environmental slack, it is more difficult for organizations to infuse their sustainable strategy within the organization even when they perceived pressures from customer to be socially and environmentally responsible. Based on this finding, it is critical for organization to possess environmental organizational slack. In this context, firms with relatively higher levels of slack will spontaneously become more environmentally responsive. However, an initial trigger for implementing a particular environmental initiative might not be unrelated to the firm's slack decision. The excess resources facilitate a chosen or emergent environmental strategic initiative of a firm (Bowen, 2002). In this study, the strategy infusion is the initiative that is moderated by slack resources.

The instrumentalities of customer demand and competitive posture did not yield significant main effects when regressed on resources appropriation and strategy infusion. In addition, organizational slack does not moderate the relationships between instrumentalities and both resources appropriation and strategy infusion. Whereas organizations must adopt corporate responsibility initiatives when they perceive institutional pressures or they will face the penalty from lacking legitimacy, it is possible that the perceived instrumentalities of customer demand and competitive posture merely give organizations an incentive, but no coercive force, for adopting corporate responsibility initiatives. Thus, from the results of this study, instrumentalities of customer demand and competitive posture do not have any effects on corporate responsibility initiatives.

Limitations and Future Research

An inherent problem in this research is the cross-sectional analyses that were used and the associated issues of determining the direction of causality. Future research should utilize a

longitudinal approach to capture the effects of time on the adoption of corporate environmentalism. Another issue is common method bias. All the measures used in this study were self-reported measures. The aim of this research was to evaluate executives' perceptions, so self-reported measures are a must. However, this research would have benefited from a sampling approach which sought to elicit responses from groups of executives at a firm versus a single influential executive at a firm.

This study sampled only one industry, therefore placing restrictions on generalizing the findings to other contexts. The framework of corporate environmentalism may be more portable or transferable to other settings than the statistical results and accompanying arguments about linkages between constructs. Future research should cast a wider net and should sample among multiple industries or multiple segments within an industry. In addition, although there are empirical studies analyzing the impact of coercive and mimetic pressures (such as customer and competitor pressures) on firms' strategies, the field is open to empirical studies investigating the role of normative pressures on firms' strategies.

This work adds to a research stream that explores executives' perceptions and actions relative to the environment. Research in this domain is varied, and there are many opportunities for further development of theoretical and empirical work. This research helps researchers in the domain of business and the environment seize these opportunities by either providing an element of clarity or expanding the range of possibilities.

Conclusions

This research aims to investigate how variations in the institutional context affect the ways businesses pursue corporate responsibility. In particular, the purpose of this research is to understand how institutional pressures and instrumentalities influence choices regarding

corporate responsibility such as resources appropriation and strategy infusion within a firm. In addition, this research also investigates the role of environmental organizational slack and its effect on the relationships between corporate responsibility initiatives and both institutional pressures and instrumentality.

The finding of this research complement institutional theory, for it suggests that both institutional pressures and organizational slack influence organizations to adopt corporate responsibility initiatives. Organizational slack is viewed as a moderating factor because it is expected to magnify or diminish the influence of institutional pressures. Environmental organizational slack accentuates the relationship between institutional pressures and corporate responsibility initiatives. However, slack resources do not accentuate the relationship between instrumentality and corporate responsibility initiatives.

Chapter 5 References

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Figure 5-1: Hypothesized Influence of Market Pressure and Instrumentality on corporate responsibility initiatives, Moderated by Organizational Slack

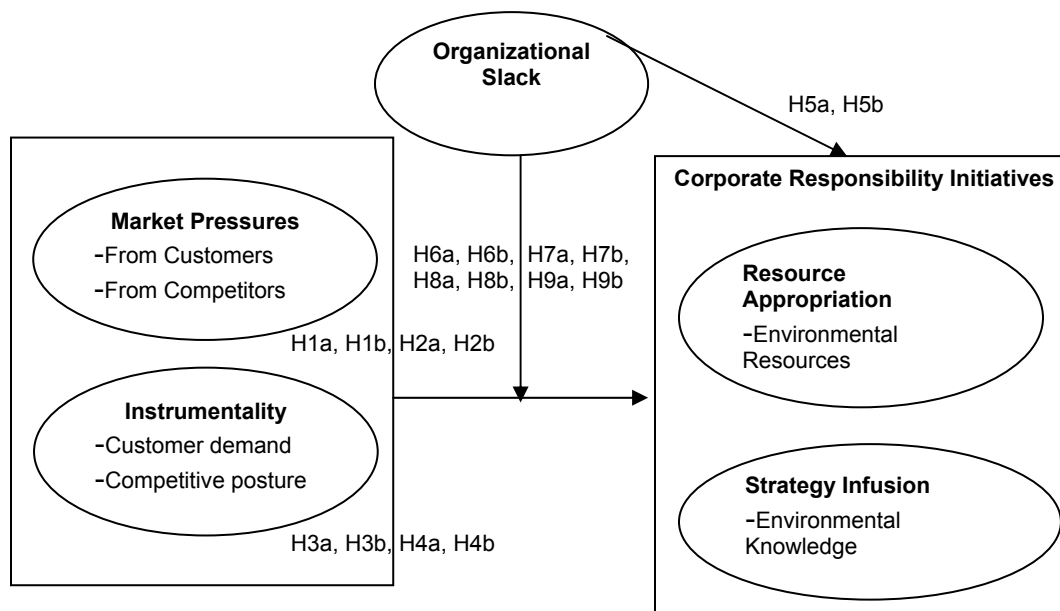


Figure 5-2: Interaction between Institutional Pressures from Customers and Environmental Slack Regressed on Strategy Infusion

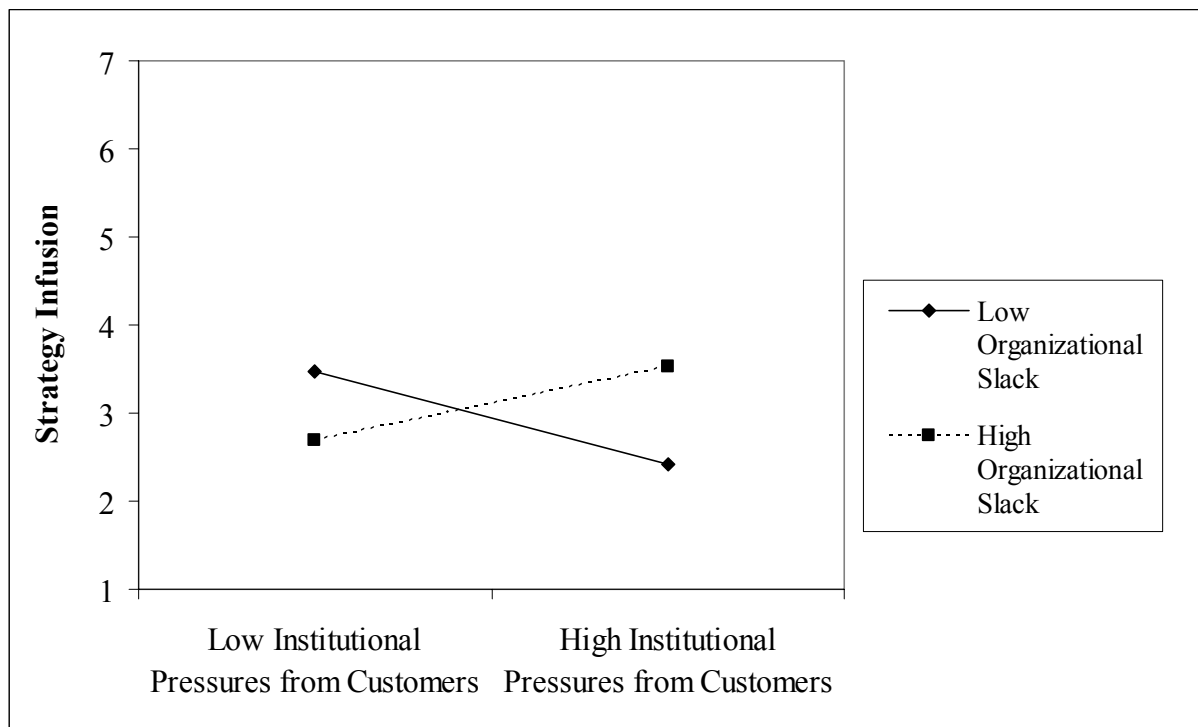


Table 5-1: Means, Standard Deviations, and Correlations for All Variables

Variables	Mean	s.d.	1	2	3	4	5	6	7	8
1. Corporate Environmentalism	4.40	0.99	(0.90) ¹							
2. Institutional Pressure from Customer	4.94	1.21	0.01	(0.73)						
3. Institutional Pressure from Competitor	3.90	1.14	0.18*	-0.18*	(0.85)					
4. Instrumentality of Customer Demand	3.39	0.81	0.14	-0.16 [†]	0.50**	(0.86)				
5. Instrumentality of Competitive Posture	3.34	0.75	0.25**	-0.26**	0.54**	0.74**	(0.84)			
6. Environmental Resources	3.90	1.06	0.48**	0.01	0.13	0.03	0.07	(0.84)		
7. Environmental Knowledge	3.62	1.17	0.67**	-0.04	0.19*	0.00	0.11	0.52**	(0.87)	
8. Environmental Slack	2.89	0.63	0.33**	-0.11	0.11	0.02	0.10	0.31**	0.32**	(0.66)

¹ Numbers in parentheses are the Cronbach alphas or reliabilities of the measures.

[†] p < .10

* p < .05

** p < .01

Table 5-2: Fit Statistics from Confirmatory Factor Analyses

Number of factors	χ^2	$\Delta\chi^2$ ^a <i>df</i>	<i>df</i>	CFI ^a	GFI ^b	NNFI ^c	SRMR ^d	RMSEA ^e	90% CI for RMSEA ^f
Two factor model	509.022	185.60 (5)	169	0.842	0.733	0.822	0.105	0.12	(0.108 ; 0.132)
Three factor model	376.24	52.82 (6)	167	0.894	0.788	0.879	0.083	0.095	(0.0819 ; 0.107)
Four factor model	323.42	-	164	0.911	0.812	0.897	0.081	0.083	(0.0699 ; 0.0966)
Five factor model	318.62	4.80 (4)	160	0.913	0.815	0.896	0.079	0.084	(0.0706 ; 0.0976)

^a Comparative Fit Index

^b Goodness of Fit Index

^c Non-normed Fit Index

^d Standardized Root Mean Square Residual

^e Root Mean Square Error of Approximation

^f 90 Percent Confidence Interval for Root Mean Square Error of Approximation

Table 5-3: Results of Regression Analysis Predicting Resources Appropriation

Variables	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8		Model 9	
	Control	S.E.	Main effects	S.E.	Pressures pairs	S.E.	Instrumentality pairs	S.E.	CM pairs	S.E.	CS pairs	S.E.	Old models	S.E.	no OSI	S.E.	Full Model	S.E.
Control																		
Firm Age	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
No. of Employee	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Revenue	0.06	(0.04)	0.05	(0.05)	0.05	(0.05)	0.05	(0.05)	0.05	(0.05)	0.05	(0.05)	0.05	(0.05)	0.05	(0.05)	0.06	(0.05)
Lumber	0.18	(0.23)	0.13	(0.23)	0.12	(0.23)	0.14	(0.23)	0.12	(0.23)	0.13	(0.23)	0.12	(0.23)	0.16	(0.23)	0.14	(0.23)
Wood Components	-0.11	(0.26)	-0.10	(0.25)	-0.07	(0.25)	-0.10	(0.25)	-0.07	(0.25)	-0.10	(0.25)	-0.08	(0.25)	-0.10	(0.25)	-0.08	(0.27)
Main Effects																		
Market Pressures from Customers			0.07	(0.08)	0.04	(0.09)	0.05	(0.08)	0.04	(0.08)	0.07	(0.08)	0.03	(0.09)	0.06	(0.08)	0.04	(0.09)
Market Pressures from Competitors			0.09	(0.09)	0.08	(0.10)	0.10	(0.09)	0.09	(0.09)	0.09	(0.10)	0.09	(0.10)	0.10	(0.09)	0.10	(0.10)
Instrumentality from Customer Demand			-0.04	(0.17)	0.00	(0.17)	-0.07	(0.17)	-0.01	(0.17)	-0.04	(0.17)	-0.03	(0.17)	-0.02	(0.17)	0.01	(0.18)
Instrumentality from Competitive Posture			-0.09	(0.19)	-0.14	(0.19)	-0.07	(0.19)	-0.14	(0.19)	-0.09	(0.19)	-0.13	(0.20)	-0.12	(0.19)	-0.17	(0.20)
Environmental Slack			0.56**	(0.11)	0.51**	(0.12)	0.55**	(0.12)	0.51**	(0.12)	0.56**	(0.18)	0.51**	(0.12)	0.55**	(0.11)	0.52**	(0.12)
Moderating Effects																		
Environmental Slack x Market Pressures from Customers					0.12	(0.10)			0.12	(0.10)			0.12	(0.10)			0.11	(0.10)
Environmental Slack x Market Pressures from Competitors					0.00	(0.08)					-0.03	(0.10)	-0.03	(0.10)			-0.07	(0.10)
Environmental Slack x Instrumentality from Customer Demand							-0.20	(0.22)	-0.02	(0.12)			-0.18	(0.23)			-0.06	(0.23)
Environmental Slack x Instrumentality from Competitive Posture							0.19	(0.22)			0.05	(0.16)	0.22	(0.25)			0.12	(0.25)
Market Pressures from Customers x Instrumentality from Customer Demand															0.18*	(0.09)	0.18 [†]	(0.09)
Market Pressures from Competitors x Instrumentality from Competitive Posture															0.10	(0.10)	0.10	(0.12)
Constant	3.54		3.55		3.55		3.54		3.55		3.55		3.50		3.49		3.50	
df	135		131		131		131		131		131		131		131		131	
R ²	0.05		0.22		0.23		0.23		0.23		0.22		0.24		0.25		0.26	
Adjusted R ²	0.02		0.16		0.15		0.15		0.15		0.14		0.24		0.17		0.16	
F	1.42		3.44**		2.97**		2.91**		2.97**		5.05**		2.58**		3.31**		2.54**	

† p < .10; * p < .05; ** p < .01

Table 5-4: Results of Regression Analysis Predicting Strategy Infusion

Variables	Model 1		Model 2		Model 3		Model 4			Model 5		Model 6		Model 7		Model 8		Model 9	
	Control	S.E.	Main effects	S.E.	Pressures pairs	S.E.	Instrumentality pairs	S.E.	CM pairs	S.E.	CS pairs	S.E.	Old models	S.E.	no OSI	S.E.	Full Model	S.E.	
Control																			
Firm Age	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	(0.00)
No. of Employee	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	(0.00)
Revenue	0.09 [†]	(0.05)	0.06	(0.05)	0.07	(0.04)	0.06	(0.04)	0.07	(0.04)	0.05	(0.05)	0.06	(0.04)	0.05	(0.05)	0.06	(0.04)	(0.04)
Lumber	0.06	(0.25)	0.01	(0.24)	-0.04	(0.22)	0.02	(0.24)	-0.04	(0.22)	0.03	(0.23)	-0.03	(0.22)	0.02	(0.23)	-0.02	(0.23)	(0.23)
Wood Components	0.27	(0.29)	0.26	(0.26)	0.35	(0.24)	0.26	(0.26)	0.34	(0.24)	0.26	(0.26)	0.34	(0.24)	0.19	(0.26)	0.29	(0.24)	
Main Effects																			
Market Pressures from Customers			0.06	(0.09)	-0.05	(0.08)	0.06	(0.09)	-0.04	(0.08)	0.06	(0.08)	-0.04	(0.08)	0.03	(0.09)	-0.04	(0.08)	(0.08)
Market Pressures from Competitors			0.21	(0.10)	0.16	(0.09)	0.22	(0.10)	0.18	(0.09)	0.20*	(0.10)	0.16 [†]	(0.09)	0.21	(0.10)	0.17 [†]	(0.09)	(0.09)
Instrumentality from Customer Demand			-0.30	(0.17)	-0.15	(0.16)	-0.31	(0.18)	-0.16	(0.16)	-0.31 [†]	(0.17)	-0.16	(0.17)	-0.25	(0.17)	-0.12	(0.17)	(0.17)
Instrumentality from Competitive Posture			0.08	(0.19)	-0.12	(0.18)	0.08	(0.20)	-0.13	(0.19)	0.08	(0.19)	-0.12	(0.19)	0.11	(0.20)	-0.10	(0.19)	(0.19)
Environmental Slack			0.67**	(0.12)	0.48**	(0.11)	0.65**	(0.12)	0.48**	(0.12)	0.63**	(0.12)	0.46**	(0.12)	0.66**	(0.12)	0.46**	(0.12)	(0.12)
Moderating Effects																			
Environmental Slack x Market Pressures from Customers					0.47**	(0.10)			0.46**	(0.10)			0.45**	(0.10)			0.43**	(0.10)	(0.10)
Environmental Slack x Market Pressures from Competitors					0.10	(0.07)					0.20 [†]	(0.10)	0.18 [†]	(0.10)			0.12	(0.10)	(0.10)
Environmental Slack x Instrumentality from Customer Demand							-0.07	(0.23)	-0.02	(0.12)			-0.01	(0.21)			0.10	(0.22)	(0.22)
Environmental Slack x Instrumentality from Competitive Posture							-0.04	(0.23)			-0.30 [†]	(0.16)	-0.19	(0.23)			-0.31	(0.24)	(0.24)
Market Pressures from Customers x Instrumentality from Customer Demand															0.10	(0.09)	0.09	(0.09)	
Market Pressures from Competitors x Instrumentality from Competitive Posture															0.21*	(0.10)	0.18	(0.11)	
Constant	2.96		3.00		2.98		3.01		3.00		3.00		2.99		2.98		3.00		
df	135		131		131		131		131		131		131		131		131		
R ²	0.03		0.29		0.41		0.29		0.40		0.31		0.42		0.31		0.43		
Adjusted R ²	-0.01		0.23		0.35		0.22		0.34		0.24		0.35		0.24		0.35		
F	0.87		4.86**		6.84**		4.07**		6.60**		4.50**		5.97**		4.54**		5.47**		

† p < .10; * p < .05; ** p < .01

Chapter 6

Resisting Isomorphism: Investigating the Adoption of Corporate Environmentalism in the Forest Products Industry

Abstract

The perceived wisdom of isomorphism is that it is good for organizations because it avoids confusion, makes them intelligible, makes them legitimate, gives them funding, and avoids coercive state sanctions. By adopting corporate environmentalism in response to pressures from stakeholders to be socially responsible, organizations benefit from isomorphism. However, questions remain regarding why some organizations tend to resist isomorphism. Under what conditions do organizations resist isomorphism? In particular, why do executives resist the adoption of corporate environmentalism? This study seeks to answer these questions by exploring executives' perceptions of normative and mimetic pressures associated with the adoption of corporate environmentalism. This study obtained data by surveying 141 managers from two key segments of the hardwood products industry. The key findings from this study suggest that the scarcity of resources hinders organizations from adopting corporate environmentalism even when they perceive pressures from customers. This research has implications for helping organizations create and acquire the necessary resources for adopting environmental strategies, which in turn will help improve their sustainable environmental practices while achieving financial performance.

Introduction

Isomorphism

The perceived wisdom of isomorphism is that it is good for organizations because it avoids confusion, makes them intelligible, makes them legitimate, attracts funding, and avoids coercive state sanctions (Donaldson, 1995). Isomorphism is the process where many organizations act, behave, or respond to certain external forces in an organizational field in a similar way. Through the process of isomorphism, organizations can gain the endorsement of both authorities and critics, such as the government, professional and trade associations, and accreditation agencies, by conforming to their prescriptions (Scott, 2001). In turn, these authorities grant them “license to operate” as well as access to material resources and technical information (Huegens and Lander, 2009).

Isomorphism helps organizations improve both symbolic and substantive performance. Symbolic performance is the extent to which organizations generate positive social evaluations, whereas substantive performance is the extent to which they exceed minimum requirements. Isomorphism may also bestow legitimacy. In particular, many studies have shown that isomorphism has a positive effect on organizations’ symbolic performance (Deephouse and Suchman, 2008; Glynn and Lounsbury, 2005; Greenwood, Suddaby, and Hinings, 2002; Huegens and Lander, 2009; Scott, 2001; Scott, Ruef, Mendel, and Caronna, 2000), while others have demonstrated that isomorphism improves substantive performance (Baum and Oliver, 1991; Chen and Hambrick, 1995; Deephouse, 1999; Huegens and Lander, 2009; Kennedy and Fiss, 2008; DiMaggio and Powell, 1983; Westphal, Gulati, and Shortell, 1997; Zbaracki, 1998).

Isomorphism also helps organizations gain legitimacy. The understanding of collectively constructed social realities provides a framework for the creation and elaboration of formal

organizations (Scott and Meyer, 1983; Scott and Meyer, 1994). Meyer and Rowan (1977) have emphasized organizations' needs to gain legitimacy in an institutional environment. Legitimacy enables a firm to compete more effectively, for it enables better access to resources, attracts better employees, and improves the exchange conditions with partners (Aldrich and Fiol, 1994; DiMaggio and Powell, 1983; Oliver, 1991; Pfeffer and Salancik, 1978; Turban and Greening, 1997). Legitimacy can also lead to economic benefits without technical gain. As a consequence, organizational routines can become decoupled from technical processes, for routines may be initiated and maintained because they have a legitimating function (Boons and Strannegard, 2000). For example, Westphal and Zajac (1994) found that a substantial number of firms are likely to adopt but not actually implement long-term incentive compensation. Zajac and Westphal (2004) have advanced neo-institutional theory by suggesting how policies can become institutionalized, despite growing evidence of their non-implementation, by virtue of the socio-historical estimation process that drives market reactions. Policy adoptions internal to a firm may become more symbolic and less substantive (Edelman Uggen, and Erlanger, 1991; Pfeffer, 1981). With this view, Zajac and Westphal's perspective integrates Meyer and Rowan's (1977) decoupling thesis with Zucker's (1983) thesis of institutionalization.

Although isomorphism has been shown to increase performance and legitimacy (Baum and Oliver, 1991; Chen and Hambrick, 1995; Deephouse, 1999; Deephouse and Suchman, 2008; DiMaggio and Powell, 1983; Glynn and Lounsbury, 2005; Greenwood et al, 2002; Huegens and Lander, 2009; Kennedy and Fiss, 2008; Meyer and Rowan, 1977; Pfeffer, 1981; Scott, 2001; Scott et al., 2000; Westphal et al., 1997; Westphal and Zajac, 1994; Zajac and Westphal, 2004; Zbaracki, 1998; Zucker, 1983), organizations sometimes resist isomorphism. However, only scant attention in past research has been paid to the sources of resistance to isomorphism

(Townley, 1997; Van Maanen, 1998). Several questions remain: What prompts an organization to resist copying or mimicking? Under what conditions does an organization resist responding to isomorphic pressures from customers and competitors? In particular, this study aims to answer these questions by investigating the adoption of corporate environmentalism in the forest products industry.

The current study addresses this gap by empirically examining how resources and institutional pressures work in concert to affect firm environmental performance. The full theoretical model of this study is shown in Figure 6-1. This study offers several contributions to theory and practice. First, this study extends strategic balance theory (Deephouse, 1999) by empirically evaluating the scarcity of resources and slack associates with the resistance to isomorphic pressures. Second, by incorporating the effects of imitation and norms set by rivals and customers, this work extends current theory by integrating competitive context with managers' resource acquisition decisions. This extension also informs research on the dilemma that managers face when choosing between conformity and deviations from norms set by rivals and customers (Deephouse, 1999; Oliver, 1991).

Third, the empirical setting for this study contributes to research on organizations and the natural environment by integrating resource-based and institutional arguments to identify the factors relevant in explaining a firm's adoption of sustainable practices. Most studies of the factors that influence corporate sustainability have exclusively taken either a resource-based orientation (Hart, 1995; Klassen and Whybark, 1999; Russo and Fouts, 1997) or an institutional orientation (Hoffman and Ventresca, 1999, 2002; Jennings and Zandbergen, 1995); few have integrated the two (Bansal, 2005). An integration of the two perspectives is relevant in explaining corporate sustainable development (Bansal, 2005). A fourth, practical, implication of

this research is that it suggests how firms may engage in resource acquisition practices to optimize environmental performance. In particular, based on the phenomenon studied, this research has implications for the sustainability practices within the forest products industry.

----- Insert Figure 6-1 here -----

In the next section, the chapter first reviews the context and background of corporate environmentalism, followed by a review of institutional pressures and resources. Next, the article reviews literature on resisting isomorphism. Then, the article presents the development of hypotheses followed by the study methods, accompanied by the details of confirmatory factor and multiple regression analyses. Finally, the results, discussion, conclusions, and the limitations and future directions are discussed.

Corporate Environmentalism

Protecting the environment has grown increasingly important in today's social, political, and business climate in recent years. Consequently, organizations have become aware of their responsibilities and have begun to develop environmental strategies. Many companies are facing increasing pressures from governments and other stakeholders to reduce their emissions and other environmental impacts in order to mitigate climate change. One way that a business can address environmental issues is through corporate environmentalism, which is the recognition and integration of environmental concerns into a firm's decision-making process (Banerjee, 2001).

Corporate environmentalism is the organization-wide recognition of the legitimacy and importance of the biophysical environment in the formulation of organization strategy, and the integration of environmental issues into the strategic planning process (Banerjee, 2001).

Corporate environmentalism is concerned with external perceptions of the firm's legitimacy and

internal strategic planning processes. An organization conforms to its institutional environments in order to reduce uncertainty and increase its legitimacy. Organizations often adopt templates for organizing which can increase their legitimacy in the eyes of the authorities in their field (Scott, 2001). Legitimacy yields access to resources such as raw material, capital, and technology. Organizations gain legitimacy and reduce uncertainty through isomorphism, which consists of coercive, normative, and cognitive mechanisms (Scott, 1995). Each mechanism differs in the degree to which it is visible and ranges from the directly coercive to that which is taken for granted (Zucker, 1983).

Based on this working definition and on the background literature, Banerjee (2001) has identified two themes in corporate environmentalism: a corporate environmental orientation and an environmental strategy focus. Corporate environmental orientation refers to the notion that firms need to recognize their impact on the environment and try to mitigate that impact (Banerjee, 2001). Corporate environmental orientation includes a firm's internal qualities of values, behavior commitment, and managers' perceptions about the need to respond to external stakeholders. An environmental strategy focus reflects the degree to which environmental issues are integrated into strategic planning processes at both the business/functional and corporate strategy levels (Banerjee, 2001). Higher levels of strategic focus can result in what Shrivastava (1995) calls an "ecologically sustainable least-cost strategy" and an "ecologically sustainable niche strategy" to achieve a competitive advantage. Environmental strategies at the functional level are limited in scope and aimed at goals such as emissions reduction and waste management (Banerjee, 2001). In this study, two themes of corporate environmentalism, a corporate environmental orientation and an environmental strategy focus, were combined together and used as a measure of corporate environmentalism.

The main effect hypotheses were proposed to test the association between institutional pressures and corporate environmentalism as well as the association between resources and corporate environmentalism. Institutional theory explains the influence of external forces on organizational decision making (DiMaggio and Powell, 1983). Institutional theory focuses on the role of social and cultural pressures imposed on organizations that influence organizational practices, structures, and strategic decisions (Ingram and Silverman, 2002; Scott, 1992). Firms obtain legitimacy by conforming to the dominant practices within their organizational field (DiMaggio and Powell, 1983; Scott, 1992). Although several institutional theorists applied institutional approach to the context of the natural environment (Delmas and Montes-Sancho, 2010; Delmas and Toffel, 2008; Jennings and Zandbergen, 1995; King and Lenox, 2000), rather less attention has been paid to orientation toward corporate environmentalism (Banerjee, 2001). This research is filling this gap by investigating the main effect between institutional pressures and corporate environmentalism.

A Resources Based View of firms (RBV) highlights how the value, rarity, imperfect mobility, and non-substitutive nature of resources within a firm can lead to a competitive advantage (Barney, 1991). Wernerfelt (1984) has established the concept of combining resources together, as if in a bundle, to create a unique whole. In discussing the imperfect mobility of resources, Peteraf (1993) has suggested the idea of causal ambiguity as representing the non-definable nature of the resources a firm possesses and has established the concepts of ex ante and ex post limits to competition within a RBV strategy. Several RBV theorists explain how components in a bundle of environmental resources possessed by a firm can affect the level of its environmental strategies, differentiate itself from its rivals, and gain competitive advantage (Clemens and Douglas, 2006; Huybers and Bennett, 2003; Sharfman, Ellington, and Meo, 1997;

Sinding, 2000). However, only limited attention has been paid to how resources affect an overall orientation of environmental strategy. This research aims to bridge this gap by examining the main effect between resources and corporate environmentalism.

Institutional Pressures and Corporate Environmentalism

The growing attention by organizational theorists to environmental issues has increased the importance of institutional pressures on firms. Institutional theorists' approaches to environmental issues provide insights about the fundamental forces that influence social perception, behavior, and action on environmental issues. Thus, institutional researchers highlight both the fundamental sources of environmentally destructive behavior as well as the enactment of solutions (Hoffman, 2003; Hoffman and Ventresca, 2002). Because institutional forces have such a significant effect on environmental issues, several research studies have been using the environment as a context for researching management issues and extending institutional theory (Bansal and Gao, 2006; Hoffman, 1999; Jennings and Zandbergen, 1995; Lounsbury, 2001).

Despite the number of studies that use environmentalism as a context to extend institutional theory, only a few empirical studies have investigated the relationship between institutional pressures and environmentally focused management. For example, Jiang and Bansal (2003) have investigated the influence of institutional pressures and market demand for adopting ISO 14001 in the Canadian pulp and paper industry. They found that task visibility and environmental impact opacity led to differences in firms' approaches to ISO 14001 in the absence of coercive pressure (Jiang and Bansal, 2003). Bansal (2005) examined Canadian firms in the oil and gas, mining, and forestry industries from 1986-1995 and found that institutional factors influenced corporate sustainable development. More recently, Berrone, Gelabert, and

Fosfuri (2009) have analyzed the impact of symbolic and substantive actions on firms' environmental legitimacy.

Past research has focused on institutional logics and cultural frames as factors that cause the resistance to isomorphic pressures. Townley (1991) investigated the sources of variation in responses to institutional isomorphism in public universities and the strategies actors engaged in to resist such pressures. The concept of institutional logic was found to be an important factor in influencing responses to isomorphism, providing a repertoire of beliefs with which to contest concepts of legitimacy (Townley, 1991). More recently, Hoffman (2001) examined the diffusion of corporate environmental practices in the context of field-level dynamics by building a model that allows for more sophisticated notions of isomorphism and resistance to change. This model made links among the constituency of the institutional field driving environmental concerns, the multiple cultural frames that emerge from that constituency, and the corresponding structural and cultural routines that become enacted within firms. Based on this model, inertia, which is traditionally a phenomenon attributed to the field, can be the result of organization-level dynamics that resist isomorphism (Hoffman, 2001).

However, rather less attention has been paid to how resource scarcity associated with resisting isomorphic pressures. Resource scarcity appears to account for variations in the frequency of process, structural, and strategic adjustments (Koberg, 1987). An environment where adequate resources are lacking can pose a great and long-lasting threat to an organization (Koberg, 1987). Changes in available resources may require broad changes in the structure and strategy of an organization. Contrary to this argument, Whetten (1981) has suggested that the key to enhancing the adaptive potential of organizations is utilizing the pressure of resource scarcity to spur innovation.

Dominance of Customers

Coercive pressures are defined by DiMaggio and Powell (1983) as formal or informal pressures exerted on organizations by other organizations upon which they are dependent. Arguments about coercive pressures are based mainly on a resource-dependence perspective (DiMaggio, 1988). Thus, coercive pressures on organizations may stem not only from regulatory bodies, but also from resource-dominant organizations as well as parent corporations. Teo, Wei, and Benbasat (2003) have investigated the effect of coercive pressure in the context of financial electronic data interchange adoption. Their study found that coercive pressures stemmed mainly from dominant suppliers and dominant customers (Teo et al., 2003).

Dependence on customers arises when organizations rely heavily on customers who account for much of their sales and those customers have alternative suppliers (Teo et al., 2003). If dominant customers demand processes and/or products that require environmental certifications or environmentally friendly business processes and products, the organization is likely to respond to these demands. Organizations characterized by an institutionalized dependency pattern are likely to exhibit similar structural features such as formal policies, organizational models, and programs (Teo et al., 2003). In this study, the structural feature of interest is corporate environmentalism.

Corporate environmentalism reflects managers' perceptions of external stakeholders, such as customers, and the need to respond to their interests. Several components of corporate environmentalism are, for instance, sustainable development, protecting the environment for future generations, responsibility to the community and to society, and the need for a positive company image (Gladwin, Kennelly, and Krause, 1995; Hart, 1995; Menon and Menon, 1997). If customers want environmentally friendly products, one way that a firm can capture these

demands is by adopting corporate environmentalism. Thus, dominance of customers who value sustainability will be associated with higher levels of a firm's corporate environmentalism. In these ways, corporate environmentalism increases the legitimacy of an organization in the eyes of external institutions. In sum, organizations may perceive pressures from dominant customers to acquire legitimacy or status, or they may perceive pressure to demonstrate their fitness to do business with other dominant organizations. Thus, hypothesis 1a regarding the dominance of customers and their effect on firms' corporate environmentalism is proposed.

Hypothesis 1a (H1a): The perceived dominance of customers will be positively associated with the firm's corporate environmentalism.

Success of Competitors

Mimetic pressures may cause an organization to change over time to become more like other organizations in its environment (DiMaggio and Powell, 1983). Mimetic pressures manifest themselves in two ways: the prevalence of a practice in the focal organization's industry, and the perceived success of organizations within the focal organization's industry that have adopted the practice (Haveman, 1993; Teo et al., 2003). An organization will imitate the successful actions of other structurally equivalent organizations because those organizations occupy a similar economic network position in the same industry, and thus they share similar goals, produce similar commodities, share similar customers and suppliers, and experience similar constraints (Burt, 1987; Teo et al., 2003).

Besides taking cues from the collective actions of similar others, organizations are particularly apt to imitate the behaviors of those whom they perceive as successful (Burns and Wholey, 1993; DiMaggio and Powell, 1983; Haunschild and Miner, 1997; Teo et al., 2003). Organizations can learn vicariously, copying or avoiding certain organizational practices

according to their perceived impact or outcomes (Levitt and March, 1988; Miner and Haunschild, 1995; Teo et al., 2003). Strategically copying fruitful products or practices for a second-mover advantage may allow an organization to unwittingly acquire some unexpected or unsought unique advantages (Lieberman and Montgomery, 1988). Mimicking the behaviors of other successful organizations can also accrue external referent prestige (Perrow, 1961). Seeing successful competitors selling green products and incorporating corporate environmentalism into their strategic planning processes leads a focal company to increase its own corporate environmentalism. Thus, hypothesis 1b regarding the success of competitors and their effect on firms' corporate environmentalism is proposed⁵.

Hypothesis 1b (H1b): The perceived success of competitors who sell green products will be positively associated with the firm's corporate environmentalism.

Environmental Resources

A Resources Based View of firms emphasizes how the value, rarity, imperfect mobility, and non-substitutive nature of resources within a firm can lead to a competitive advantage (Barney, 1991). Wernerfelt (1984) has established the concept of combining resources together, as if in a bundle, to create a unique whole. In discussing the imperfect mobility of resources, Peteraf (1993) has suggested the idea of causal ambiguity as representing the non-definable nature of the resources a firm possesses and has established the concepts of ex ante and ex post limits to competition within a RBV strategy. Prior to investing (ex ante) in resources, managers make varying estimations of the resources' future value. As a result of these varying estimations, firms make differing investments in resources. After investing (ex post), factor immobility and barriers to competition from substitute products or services prevent those firms that made

⁵ In this context, green products refer to certified wood products

inferior decisions from adjusting. Thus, some firms gain a sustainable competitive advantage (Barney, 1991; Peteraf, 1993).

A number of researchers have empirically applied RBV to the analysis of environmental strategies and profitability (Aragón-Correa, 1998; Christmann, 2000; Hart, 1995; Marcus and Geffen, 1998; Maxwell, Rothenberg, Briscoe, and Marcus, 1997; Rugman and Verbeke, 1998; Russo and Fouts, 1997; Sharma and Vredenburg, 1998). Fineman and Clarke (1996) have found that firms' superior resources allow them to adapt to regulations, garnering advantages over their competitors more quickly and efficiently. Judge and Douglas (1998) have demonstrated that firms that successfully integrated the natural environment into their strategic processes achieved competitive advantages, both financially and environmentally. Clemens and Douglas (2006) have argued that environmental resources may include many components in a bundle, for example, additional accounting systems (Sinding, 2000), more extensive monitoring of waste streams (Sharfman et al, 1997), training, additional information requirements, and indirect costs involved in adopting any new system requiring organizational changes (Huybers and Bennett, 2003). In their analysis, Clemens and Douglas (2006) found that coercion is positively related to voluntary green initiatives, but the relationship is contextual and depends on the level of superior resources of firms that focused on environmental strategies.

To manage institutional pressures from competitors and customers, an organization needs to possess a unique bundle of resources and capabilities that influence its strategic choices and ultimately its competitive advantage (Barney, 1991; Peteraf, 1993; Wenerfelt, 1984). These resources may be financial, human, intangible, physical, organizational, or technological (Amit and Schoemaker, 1993; Barney, 1991; Farjoun, 1994). Mishina, Pollock, and Porac (2004) found that firms pursuing product expansion logics generally grow more slowly than firms that are not

expanding their product base, but that financial slack positively moderates this relationship. They also find that human resource slack enhances short-term market expansion, but slows down short-term product expansion. The slack resources available have to be consistent with the growth strategy pursued in order to be positively associated with short-term growth rates (Mashina et al, 2004). Thus, hypothesis 2 regarding environmental resources and their effect on firms' corporate environmentalism is proposed⁶.

Hypothesis 2 (H2): A firm's environmental resources will be positively associated with the firm's corporate environmentalism.

Organizational Slack

There has been an ongoing debate over the role that slack plays in organizational adaptation (Bourgeois, 1981). On the one hand, slack is an analog for inefficiency, a buffer that shields the firm and, in some cases, blinds it from changes that are needed to meet external demands (Cheng and Kesner, 1997). On the other hand, organizational slack allows firms to make investments in resources and capabilities that may not have an immediate pay-off (Bansal, 2005; Levinthal and March, 1981). It can help a firm develop the resources and capabilities necessary to improve the speed and degree to which it can adapt to its external environment (Bansal, 2005; Cheng and Kesner, 1997). Bourgeois (1981) has defined organizational slack as "that cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change" (p.84).

Discretionary resources constitute organizational slack, which is defined as spare or uncommitted resources, a cushion of resources beyond the minimum necessary to maintain the

⁶ This is cross-sectional research. No claim has been made that environmental resources precede corporate environmentalism and vice versa. A concern of reverse causality and the possibility that these two factors likely co-evolve will be discussed in more detail in the discussion section.

organizational coalition, or excess resources beyond those needed to produce a given level of output (Cyert and March, 1963; Nohria and Gulati, 1996; Seifert et al. 2004). Numerous forms of slack resources include extra raw materials or labor, excess work-in-process inventory or machine capacity, and excess cash, which is the most discretionary form (Sharfman et al., 1997).

Bansal (2005) has investigated the relationship between organizational slack and sustainable development. She found that organizational slack permits firms the latitude to seek creative new solutions to corporate sustainable development in many circumstances. For instance, many respondents in her study noted that large firms, firms with extra financial resources, or large environmental health and safety (EHS) departments were more likely to implement new practices. In addition, the financial benefits that accrue from sustainable development can often be long term and diffuse, for example, through improved corporate reputation or social capital. Taken together, this suggests that organizational slack will help firms incorporate corporate environmentalism into their strategic planning processes. Thus, hypothesis 3 regarding organizational slack and its effect on firms' corporate environmentalism is proposed

Hypothesis 3 (H3): Organizational slack will be positively associated with the firm's corporate environmentalism.

Resisting Isomorphism

The perceived wisdom of isomorphism is that it is good for organizations because it avoids confusion, makes them intelligible, makes them legitimate, gives them funding, and avoids coercive state sanctions. By adopting corporate environmentalism in response to pressures from stakeholders to be socially responsible, organizations benefit from isomorphism. However, questions remain regarding why some organizations tend to resist isomorphism. In particular, why do executives resist the adoption of corporate environmentalism? I argue that resource

scarcity is one reason why firms may resist isomorphic pressures toward corporate environmentalism.

Research on resource scarcity has been considered in the contexts of organizational response, organizational decline, and environmental munificence (Castrogiovanni, 1991; Koberg, 1987; Zajac and Kraatz, 1993). Zajac and Kraatz (1993) have concluded that resource scarcity and financial distress gave rise to strategic restructuring in educational institutions. McKinley, Mone, and Moon (1999) have investigated organizational responses to resource scarcity in a university setting. In particular, they examined the perceptions of resource criticality in times of resource scarcity and found that research-oriented faculty and administrators view support staff as more critical relative to faculty than do their colleagues who value research less (McKinley et al., 1999). Mone and McKinley (1993) proposed a contingency framework on how organizational decline inhibits innovation which suggested integration between two perspectives: 1) organizational decline interferes with an organization's capacity to innovate; and 2) organizational decline stimulates innovation. Castrogiovanni (1991) made a theoretical assessment of environmental munificence and found that there are at least five levels at which environment can be assessed; and there are at least three different kinds of munificence at each environmental level. Environmental munificence is the scarcity or abundance of critical resources needed by firms operating within an environment (Dess and Beard, 1984; Pfeffer and Salancik, 1978; Randolph and Dess, 1984; Staw and Sz wajkowski, 1975; Tushman and Anderson, 1986). Resource scarcity adversely affects firm profitability and organizational slack (Dess and Beard, 1984; Child, 1972; Yuchtman and Seashore, 1967) and causes changes in organizational characteristics (Koberg, 1987; March and Simon, 1958).

Although superior environmental resources are critical in gaining a competitive advantage, changes in available resources may generate different types of organizational adjustments. Resource scarcity appears to account for variations in the frequency of process, structural, and strategic adjustments (Koberg, 1987). An environment where adequate resources are lacking can pose a great and long-lasting threat to an organization (Koberg, 1987). Changes in available resources may require broad changes in the structure and strategy of an organization.

These resources will assist organizations in reacting properly to institutional pressures. These pressures represent a collected cultural repertoire that determines the possibilities for organizational structure, culture, and action (Hoffman, 1997). However, each individual organization is capable of choosing from among these repertoires (Hoffman, 1997). Action becomes a choice from among a bounded set of legitimately available options, and not a choice from among an unlimited array of possibilities. Thus, an organization with value, rarity, imperfect mobility, and non-substitutive resources will be able to cope with the pressures as well as gain a competitive advantage (Barney, 1991). Thus, I argue that resource scarcity will affect the relationship between institutional pressures and corporate environmentalism.

Hypothesis 4a (H4a): The lower a firm's environmental resources, the weaker the relationship between the perceived customer dominance and corporate environmentalism.

Hypothesis 4b (H4b): The lower a firm's environmental resources, the weaker the relationship between the perceived success of competitors and corporate environmentalism.

Because firms are fundamentally economic institutions, their financial responsibilities include obligations, accountability and stakeholder salience, whereas corporate social responsibility is regarded as discretionary for firms (Carroll, 1999; Mitchell, Agle, and Wood, 1997). However, when there are pressures from stakeholders such as customers and competitors

for firms to become socially and environmentally conscientious, corporate responsibility initiatives gain legitimacy with the power and urgency necessary to become salient to organizational decision makers. A firm's contributions to corporate responsibility depend not only on the CEO's discretion in decision-making, but also on the availability of discretionary resources (Seifert et al., 2004). Deficient of organizational slack can lead to resisting institutional pressures.

Buchholtz, Amason, and Rutherford (1999) found a positive relationship between perceived organizational slack, the CEO's rating of the firm's resource levels relative to other firms and relative to needs, and corporate responsibility. Several correlation studies found that firm financial performance was more positively related to subsequent social performance than to prior social performance – results that the authors attributed to profitable firms' likelihood of having more slack resources to devote to social responsibilities (McGuire, Sundgren, and Schneeweis, 1988; Preston and O'Bannon, 1997; Waddock and Graves, 1997). This suggests that the availability of organizational slack may also moderate the relationship between institutional pressure from customers and competitors and corporate environmentalism. To the extent a firm does not possess slack resources; it will be more likely to resist isomorphic pressures that increase its corporate environmentalism. I therefore hypothesize,

Hypothesis 5a (H5a): Low organizational slack will weaken the relationships between the perceived dominance of customers and corporate environmentalism.

Hypothesis 5b (H5b): Low organizational slack will weaken the relationships between the perceived success of competitors and corporate environmentalism.

Methods

Survey Sample

The survey sample was drawn from the wood and forest products industry for several reasons. First, due to the increasing attention being paid to environmental preservation and conservation, the wood and forest products industry has come under scrutiny for its use of natural resources (Mater, 2005). Although modern sustainable forestry is environmentally conscious, many people perceive the industry to be exploiting natural resources (Bowyer, 2004; Polzin and Bowyer, 1999) and have various expectations about how wood and forest products businesses should behave (Panwar, Rinne, Hansen, and Juslin, 2006). In addition, because of rising labor and material costs, many wood and forest products businesses are looking for inexpensive labor and materials in other countries, which also raises a red flag for public perceptions of corporate environmentalism. Finally, many wood and forest products companies are adopting or looking to adopt some form of an environmental certification program to make their stakeholders aware of their commitment to the environment (Bukowski, 2008). Because of these issues, it is important that the wood and forest products industry pays special attention to corporate environmentalism.

Three groups make up the samples chosen for this study: 1) the members of the Wood Component Manufacturers Association (WCMA); 2) the Hardwood Manufacturers Association (HMA); and 3) the National Hardwood Lumber Association (NHLA). A field study strategy (McGrath, Martin, and Kulka, 1982) was used to study these samples.

Data Collection

The data were collected via web surveys to reduce cost and save time. To increase the response rate and participants' willingness to provide the data, the researchers contacted the

major trade associations in the hardwood products industry identified above and asked for their endorsements. In December of 2009, an initial email letter was sent to possible participants with a message from each trade association describing the research and containing a link to an online survey. The web questionnaires targeted the top managers of the WCMA, HMA, and NHLA member firms. One week after the first email was sent out, a follow-up email was sent to remind potential participants who had not completed the online survey. A week after that, a final follow-up email was sent out. This method followed the approach suggested by Dillman (2000).

The unit of analysis in this study is the firm. The survey respondents were executives of wood products companies within the United States. After the respondents received the email from their trade association, they could click on a link in the email to bring them to the online survey hosted on a Penn State server. The splash page of the survey contained a welcome and an implied consent form containing IRB approval and a statement of confidentiality. The survey took about 10-15 minutes from start to finish. After the respondent finished and clicked on the last page of the survey, the data were sent to the database. The complete database was received at the end of January 2010.

To increase their willingness to provide data, the respondents were informed that they would receive an executive summary report at the conclusion of the study. This report would help them to understand executive perceptions of green building trends and the demand for certified wood products. This report was intended to help increase the respondents' willingness to answer the survey. The questionnaires did not contain any participant identifiers. In the statement of confidentiality, the respondents were assured that no one would see their answers other than the researchers and that there would be no identifiers in the database linking them or their firm to

the responses. Moreover, the statement of confidentiality was re-stated when the respondents were asked sensitive questions.

The total number of usable surveys was 141. Non-response bias was assessed with t-tests that compared the mean responses of survey measures between those managers who responded to the initial email and those who responded after subsequent emails (Dillman, 2000). All of the items that measured firms' characteristics, such as number of employees, firm's age, and revenue, were also used for t-tests for non-response bias. At $\alpha = .05$, non-response bias was not significant with p-values ranging from .16 to .59.

Although the exact response rate cannot be determined, an approximation of the response rate was calculated. For WCMA and HMA, the emails were sent out to the member firms by their presidents. WCMA has 128 member firms and HMA has 80 member firms. Out of 128 member firms, 27 firms from WCMA responded (21.1% response rate). Out of 80 member firms, 14 firms from HMA responded (17.5% response rate). NHLA provided a list of 700 emails for their member firms. The emails were sent directly from the researchers, and not through the trade association, to NHLA's member firms. Of all the emails sent out, 359 emails bounced back due to invalid or inactive email addresses. Based on the number of the "good" emails that went through, 80 firms responded. Thus, the response rate of NHLA was approximately 23.4% (80 out of 341 firms). In addition, there were 20 firms that chose to do survey in hard copy. It also should be noted that some of the responding firms were members of more than one trade association. Thus, based on the available information, an estimated lower bound of the response rate was 25.7% (141 out of 549 firms), and the upper bound was approximately 50% (141 out of 282 firms).

Sample

This study investigated firms in the hardwood products industry in the U.S. Almost sixty percent (58%) of the participants were males. About seventy-five percent (74.5%) of participants had relatively high organizational tenure; one hundred and five participants had been with their firms for 10 or more years, while 36 participants had been with their firms for fewer than 10 years. All of the participants were top managers and familiar with decision-making related to corporate responsibility initiatives. Approximately 23% of the firms in this sample had revenues of less than \$5 million. Almost one fourth of the firms in this sample were within the \$10 – \$20 million revenue range. Approximately 35% of the firms in this sample had revenues of more than \$20 million. In addition to revenue, the number of employees was used to measure the size of the firm. The median number of employees for this sample was 41.50, with an interquartile range of 82.00. Firm age had a mean of 50.00 years, and a standard deviation of 34.63. Virtually all of these firms were privately held.

Measures⁷

Dependent Variable

Corporate environmentalism. Corporate environmentalism refers to the notion that firms need to recognize their impact on the environment and try to mitigate that impact as well as the degree to which environmental issues are integrated into a firm's strategic planning processes (Banerjee, 2001). Corporate environmental orientation is akin to corporate social responsibility, but specifically oriented toward the natural environment. This measure of corporate environmentalism, adapted from Banerjee (2001), consisted of ten items. Banerjee's original

⁷ The full survey and data dictionary are shown in the appendix

measure of corporate environmentalism consisted of fourteen items. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include: “Our firm has integrated environmental goals into our strategic planning process.” and “At our firm, we make a concerted effort to have every employee understand the importance of environmental conservation to our business.” The full list of items used is provided in the Appendix. The Cronbach’s alpha for corporate environmentalism in this study is 0.90. Cronbach's alphas that exceed .70 suggest strong reliability for the measure (Nunnally, 1978).

Independent Variables

Perceived dominance of customers. The measure of the perceived dominance of customers was adapted from Bridges and Villemez (1991) and from Teo et al. (2003). This measure was used as a construct of resource dependence, which is defined as the extent to which a focal organization relies on constituents in its environment for critical possessions (Pfeffer and Salancik, 1978). Resource dependence is a component of the coercive pressures on an organization. Coercive pressures are the conformist pressures on a focal organization emanating from other organizations upon which it depends for critical resources, or from institutions upholding the cultural expectations of the society in which it functions (DiMaggio and Powell, 1983). The measure of the perceived dominance of customers consisted of four items. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include: “With regard to my main customers, our firm’s well-being depends on their purchases.” and “With regard to my main customers, introducing higher costs to them would be detrimental to our firm.” The Cronbach’s alpha of the perceived dominance of customers in this study is 0.74.

Perceived success of competitors. The measure of the perceived success of competitors was adapted from Teo et al. (2003). This measure is a component of mimetic pressures, which are pressures experienced by a focal organization to model itself after other organizations in its organizational field when faced with uncertainty over its goals, technologies, means-ends relationships, et cetera (DiMaggio and Powell, 1983). This measure of the perceived success of competitors consisted of four items. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include: “My main competitors who sell certified wood products are perceived favorably by others in our industry.” and “My main competitors who sell certified wood products are perceived favorably by customers.” The Cronbach’s alpha of perceived success of competitors in this study is 0.86.

Environmental Resources. The measure of the environmental resources of a firm was adapted from Clemens and Douglas (2006). This measure of environmental resources consisted of five items: three items to measure resource value and two items to measure resource rareness. These items were then averaged to create a single measure. A seven-point Likert-type response format ranging from “strongly disagree=1” to “strongly agree=7” was used. Examples of survey items include: “My firm’s strategy to reduce its energy consumption is unique in our industry.” and “The reduction of our non-wood waste is considered valuable within our firm.” The Cronbach’s alpha of environmental resources in this study is 0.84.

Organizational Slack. The organizational slack of a firm was adapted from Bansal (2005) and Nohria and Gulati (1996, 1997). Organizational slack is used to recognize a firm's extra liquidity that could be invested in corporate environmentalism. This measure of organizational slack consisted of three items. Managers were given five choices ranging from 1, "output will not be affected," to 5, "output will fall by 20% or more." The midpoint, 3, indicated

that output would fall by about 10 percent, the same as the proposed reduction in resources. The managers then made their choice based on the value of the prospective loss in output. Across this range of responses, the higher the reported loss in output, the lower the slack. Examples of survey items include: “Assume that you suddenly must lay off 10% of your production workforce, how seriously would your production output be affected over the next year?” and “Assume that your firm’s annual operating budget is reduced by 10%, how significantly would your work be affected over the next year?” The Cronbach’s alpha of organizational slack in this study is 0.64.

Almost all of the measures exceeded the cutoff coefficient alpha value of 0.70, as suggested by Cortina (1993) and Nunnally (1978). There was only one exception: organizational slack had a coefficient alpha value of 0.64. Also, each measure’s coefficient alpha was below 0.95. This demonstrates the internal consistency of the measures, without the items of a single measure being too similar as to create a verbal redundancy issue.

Control Variables

Firm age. The age and size of the firm are used as control variables because of concerns about liabilities due to a firm's small size or newness (Stinchcombe, 1965), which may affect its resources and capabilities. A firm's age was measured by a single item in the questionnaires: “How many years has your firm been in operation?” This measure was used for the inertial or institutional effects of a firm (DiMaggio and Powell, 1991; Hannan and Freeman, 1977).

Firm size. Larger firms tend to be more visible and attract more scrutiny by media and stakeholders, which influences both firms’ legitimacy and reputation (Fombrun, 1996; Suchman, 1995). Given that both resource-based and institutional processes vary based on firm size, firm size is treated as a control variable (Bansal, 2005). Firm size was measured by revenue and

number of employees. The questionnaires asked the self-reported 2008 annual sales of firms. Managers were asked to select the range of their firm's revenue. In the following analyses, the ranges are: (1) less than \$5 million, (2) \$5 to \$10 million, (3) \$10 to \$20 million, (4) \$20 to \$40 million, and (5) more than \$40 million. Like firm age, firm size is also used for the inertial or institutional effects of the firm (DiMaggio and Powell, 1991; Hannan and Freeman, 1984). Managers were also asked to give an approximate number of the employees in their firm: "Approximately how many full-time production employees are working for your company today?"

Multicollinearity Analysis

Centered independent and moderating variables (customer pressures, competitor pressures, environmental resources, and organizational slack) were created and used in the multicollinearity analysis. The regressions were performed using the centered main effect and interaction measures. Multicollinearity did not appear to affect the results. Tolerance (TOL) is less than 0.1 and the Variance Inflation factor (VIF) scores do not exceed 2.5 for any measure. The largest condition index of the full model (all interactions included) is only 7.62. In addition, another indicator that collinearity should not be a concern is that there is no correlation above 0.5.

Factor Analyses

An exploratory factor analysis was performed (specifically, principal components analysis with varimax rotation) as an initial data validity and reliability check. Initially, 34 items (12 for corporate environmentalism, 4 for dominance of customers, 4 for success of competitors, 7 for environmental resources, and 7 for organizational slack) were used to perform the exploratory factor analysis. Out of 12 corporate environmentalism items, 2 items suffered from

negative wordings and did not hold together well with the rest of the items. Thus, those two items were dropped out of the model. Dominance of customers' items as well as success of competitor items each revealed a single construct. Out of 7 environmental resources items, 5 items formed a single construct while 2 items were dropped that did not hold well together with the rest of the items. Thus, those two items were not included in the model. Out of 7 organizational slack items, 3 items formed a single construct while another 4 items that used environmental-related wording formed another single construct. These 4 items were also highly correlated with corporate environmentalism. Thus, these four items were dropped out of the model and organizational slack only consisted of 3 items.

The revised exploratory factor analyses revealed a five factor target model. The constructs of corporate environmentalism, customer pressures, competitor pressures, environmental resources, and organizational slack were represented by one factor each. Each of these factors had internal factor loadings above 0.50. All of the factors within the five-factor EFA had cross loadings less than 0.30. Confirmatory factor analyses were conducted to test the fit of the targeted five-factor model. The fit statistics of the confirmatory factor analyses are shown in Table 6-1. The four-factor model was tested to validate the five-factor target model from the previous exploratory factor analysis.

----- Insert Table 6-1 here -----

The fit indices show that a three-factor model does not fit the data well. Looking at all the models tested, the change in chi-square, compared to the target model, is lowest ($\Delta X^2 = 59.57$, $df = 284$) between the target model and the over-factored six-factor model. Along with the chi-square, another badness of fit statistic, the Root Mean Square Error of Approximation (RMSEA),

is lower for the target model. The difference in the values of SRMR and RMSEA for the target model versus the over-factored model is small (Δ SRMR = 0.01; Δ RMSEA = 0.008).

The Goodness of Fit Index (GFI), the Non-Normed Fit Index (NNFI) and the Comparative Fit Index (CFI) also show support for the target model over other possible models. The NNFI of the target model is slightly higher than all other models, and is very similar to the NNFI of the over-factored model. The difference in the NNFI between the target model and the over-factored model is 0.01. The CFI of the target model is higher than the four-factor model. The difference in the CFI between the target model and the over-factored model is 0.01. After the factor analyses were performed, scale reliabilities were computed. Almost all scale reliabilities were above the recommended .70 level (Cortina, 1993; Nunnally, 1978), with one exception: organizational slack had a coefficient alpha value of 0.64. Also, each measure's coefficient alpha was below 0.95. This demonstrates the internal consistency of the measures, without the items of a single measure being too similar as to create a verbal redundancy issue.

Results

Table 6-2, the descriptive table, contains the means, standard deviations, coefficient alpha (in parentheses along the table's diagonal), and Pearson correlations of the measures of corporate environmentalism, an executive's perceptions of institutional pressures, environmental resources, organizational slack, and all control variables. None of the Pearson correlations were exceedingly high, which suggests the measures of the constructs are separable from one another. In relation to the variables for corporate environmentalism, institutional pressures, environmental resources, and organizational slack, the correlations align with the nomological network of the research.

----- Insert Table 6-2 here -----

Main Effects

Four of the proposed hypotheses, hypotheses 1a, 1b, 2, and 3 were tested with main effects only regression models with corporate environmentalism as a dependent variable. From the results in model 2 of Table 3, two out of these four main effects hypotheses were supported. When corporate environmentalism was regressed on dominance from customers, the test of hypothesis 1a, the regression analysis was not significant ($\beta = .03$, $p = 0.68$). For hypothesis 1b, when corporate environmentalism was regressed on success of competitors, the results were moderately significant ($\beta = .13$, $p < .10$). This means when a focal firm perceived high success of competitors who sell green products, the firm will be more likely to adopt corporate environmentalism. The regression testing hypothesis 2, regressing corporate environmentalism on environmental resources, was also significant ($\beta = .43$, $p < .01$). This means that a focal firm is more likely to adopt corporate environmentalism when it also possesses more environmental resources. When corporate environmentalism was regressed on organizational slack, the test of hypothesis 3, the regression analysis was not significant ($\beta = -.10$, $p = .30$).

----- Insert Table 6-3 here -----

Environmental Resources as a Moderator

In Hypotheses 4a and 4b I proposed that environmental resources moderate the effects of both the dominance of customers and the success of competitors on corporate environmentalism. This moderating relationship is assumed to be linear. I tested moderators using the multiplication terms between environmental resources and the dominance of customers, and between environmental resources and the success of competitors.

The pair-wise tests of the different interactions were conducted to examine a multicollinearity issue. Model 3 tested the environmental resources pair-wise interactions: an interaction between environmental resources and market pressures from customers; and an interaction between environmental resources and market pressures from competitors. Model 4 tested the organizational slack pair-wise interactions: an interaction between organizational slack and market pressures from customers; and an interaction between organizational slack and market pressures from competitors. Model 5 tested the market pressures from customers pair-wise interactions: an interaction between environmental resources and market pressures from customers; and an interaction between organizational slack and market pressures from customers. Model 6 tested the market pressures from competitors pair-wise interactions: an interaction between environmental resources and market pressures from competitors; and an interaction between organizational slack and market pressures from competitors.

Model 7 used corporate environmentalism as a dependent variable. The regression equation testing model 7 was significant ($F = 4.62, p < .01$ respectively). I proposed that the lower a firm's environmental resources, the weaker the relationship between the perceived customer dominance and corporate environmentalism in hypothesis 4a. The interaction between the dominance of customers and environmental resources was significant ($\beta = .12, p < .05$). The results in Table 6-3 show that the interactions with market pressures from customers were significant in all models, thus strongly supporting H4a. However, hypothesis 4b, the lower a firm's environmental resources, the weaker the relationship between the perceived success of competitors and corporate environmentalism, was not supported. The interaction between the success of competitors and environmental resources was not significant ($\beta = -.04, p = .47$).

Figure 6-2, following the Aiken and West (1991) approach for depicting interactions, shows that the relationship between corporate environmentalism and the dominance of customers is moderated by environmental resources. I proposed that the lower a firm's environmental resources, the weaker the relationship between the perceived customer dominance and corporate environmentalism. This hypothesis 4a is supported. The pairs of interactions, models 3 to 6 in Table 6-3, were presented. The results when the interactions were added in pairs were the same as when each interaction was added individually. The high levels of environmental resources and customer dominance were defined by one standard deviation above the mean, while the low levels were defined by one standard deviation below the mean. The graph shown in Figure 6-2 illustrates that when an organization possesses high environmental resources, the dominance of customers is positively related to corporate environmentalism. However, when an organization possesses low resources, the relationship between the dominance of customers and corporate environmentalism is negative. This means that when resources are low, more pressure leads to lower levels of corporate environmentalism. In other words, the scarcity of environmental resources can prevent organizations from adopting corporate environmentalism even when there are pressures from customers to be “green”.

----- Insert Figure 6-2 here -----

Finally, I proposed that low organizational slack will weaken the relationships between the perceived dominance of customers and corporate environmentalism (H5a) and low organizational slack will weaken the relationships between the perceived success of competitors and corporate environmentalism (H5b). These two hypotheses were not supported. The interaction between the dominance of customers as well as the success of competitors and organizational slack were not significant ($\beta = .03$, $p = .71$; $\beta = .07$, $p = .40$ respectively).

Robustness Checks

Several post-hoc analyses were performed for robustness checks. First, interactions between competitor and customer pressures; and between environmental resources and organization slack were tested in order to consider some other potential interactive effects. However, none of them was significant. Second, a main effects model that excluded environmental resources was run to see if environmental resources were mediating the effects of organizational slack on corporate environmentalism. However, organizational slack did not become significant and environmental resources were not mediating the effects of organizational slack on corporate environmentalism. Third, in checking for a multicollinearity problem prior to centering the variables, the condition indexes for all four interactions exceed the threshold of 30. Thus, one interaction was included at a time in the models and compared them to when interactions were included as pairs. The main effects and interaction effects were the same when one interaction was included at a time in the models, compared to when they were included as pairs. Finally, the regression analyses using the two themes of corporate environmentalism (a corporate environmental orientation and an environmental strategy focus) were tested to see whether combining the two dimensions of corporate environmentalism are beneficial. The post-hoc results showed that the effects are a little weaker for corporate environmental orientation than for environmental strategy focus. In addition, institutional pressure from competitors was not significant when corporate environmentalism was separated. However, the main finding about resources and the interaction still holds.

Discussion

This study attempts to address how institutional pressures influence the adoption of corporate environmentalism. From the findings of this research, institutional pressures from both

customers and competitors do not have a positive effect on adopting corporate environmentalism. Organizational slack also did not yield significant main effects when regressed on corporate environmentalism. Additionally, organizational slack does not moderate the relationship between institutional pressures — the dominance of customers and the success of competitors — and corporate environmentalism.

On the other hand, environmental resources had a positive relationship with corporate environmentalism. Environmental resources also moderated the relationship between the dominance of customers and corporate environmentalism. When an organization possesses high environmental resources, the dominance of customers is positively related to corporate environmentalism. However, when an organization possesses low resources, the relationship between the dominance of customers and corporate environmentalism is negative. This means that when resources are low, more pressure leads to lower levels of corporate environmentalism. In other words, the scarcity of environmental resources can not only prevent organizations from adopting corporate environmentalism in the face of pressures from customers to be “green,” these pressures can lead them to become even less environmentally conscious. In contrast to the moderating effect of environmental resources on the dominance of customers, environmental resources did not moderate the relationship between the success of competitors and corporate environmentalism.

To summarize, this study highlights the importance of researchers beginning to attend to the multiple environmental strategies that organizations employ to respond to institutional pressures. This study built on frameworks such as that provided by Oliver (1991), and later by Deephouse (1999) to specify the organizational and environmental factors that condition those strategic choices. Overall, our findings call for a contingency perspective to specify the nature of

resources when discussing its impact on corporate environmentalism. As this research progresses, important foci will be: to what extent can firms adopt corporate environmentalism based on the resources that they already have; and whether strategically obtaining additional environmental resources will help firms better adopt corporate environmentalism. Academic knowledge about strategic choices in organizational resources is relatively well-developed, but there is great potential in beginning to explore the causal dynamics of environmental strategic choices in contexts in which institutional pressures are critical.

This study offers several contributions to theory and practice. First, this study extends strategic balance theory (Deephouse, 1999) by empirically showing how the scarcity of necessary resources increases the resistance to isomorphic pressures. This finding helps researchers better understand the trade-offs between differentiation and conformity. Strategic balance theory managers identify the strategic balance point where the benefits of reduced competition are offset by the costs of legitimacy challenges (Deephouse, 1999). Instead of Porac et al.'s (1989) competitive cusp, the term strategic balance point is used because firms in this study balance competitive and institutional forces (Deephouse, 1999). The results of this study suggest that resource considerations play an important role in determining this balance point. My findings suggest that firms which do not possess the necessary resources to conform may instead differentiate themselves by actively pursuing a contrary orientation.

Second, by incorporating the effects of imitation and norms set by rivals and customers, this work extends current theory by integrating competitive context with managers' resource acquisition decisions. This extension also informs research on the dilemma that managers face when choosing between conformity and deviations from norms set by rivals and customers (Deephouse, 1999; Oliver, 1991). From an institutional perspective, the findings showed that

institutional pressures from competitors positively associate with corporate environmentalism. Based on this result, when a focal firm perceived high success of competitors who sell green products, the firm will be more likely to adopt corporate environmentalism. Mimetic pressures may cause an organization to change over time to become more like other organizations in its environment. The perceived pressures will lead managers to conform to norms set by competitors through isomorphism process (DiMaggio and Powell, 1983). From a resources-based perspective, the results showed that environmental resources positively associate with corporate environmentalism. From this finding, a focal firm is more likely to be environmentally concerned when it possesses more environmental resources. An organization that possesses a unique bundle of resources and capabilities can differentiate itself and deviate from norms which ultimately can increase its competitive advantage (Barney, 1991; Peteraf, 1993; Wenerfelt, 1984).

Third, this study adds considerable merit to research on organizations and the natural environment by integrating resource-based and institutional arguments to identify the factors relevant in explaining a firm's adoption of sustainable practices. An integration of the two perspectives is relevant in explaining corporate sustainable development and adoption of environmental practices (Bansal, 2005; Darnall, 2006). The implication of this finding for the sustainability literature is that it informs the debate regarding the competing theoretical reasons why firms undertake corporate environmentalism. Prior research drawing on aspects of institutional theory has shown that firms adopt environmental practices when confronted with pressures from regulators and markets (Arora & Cason, 1995; Darnall, 2006; Khanna & Damon, 1999). However, studies relying on RBV conclude that organizations with stronger complementary capabilities undertake environmental strategies (Christmann, 2000; Darnall, 2006; Hart, 1995; Rugman & Verbeke, 1998; Russo & Fouts, 1997; Sharma & Vredenburg,

1998). The findings of this study offer evidence that an interaction of both perspectives have merit in explaining why firms adopt corporate environmentalism.

Fourth, the practical implication of this research is to engage in resources acquisition to optimize environmental performance. In particular, based on the phenomenon studied, this research has implications for the sustainability practices within the forest products industry. It suggests that initiatives which help organizations create and acquire the necessary resources for adopting environmental strategies will help improve their sustainable environmental practices. It is interesting to note that the main effect of institutional pressures from customers do not significantly associate with corporate environmentalism. However, when moderated by environmental resources, the relationship between dominance of customers and corporate environmentalism is significant. In contrast, while the main effect of institutional pressures from competitors significantly associate with corporate environmentalism, the interaction between institutional pressures from competitors and corporate environmentalism was not significant when moderated by environmental resources. The conservative nature of the industry leads the wood products firms conform with the norms set by rivals, which can explain the significant main effect of the success of competitors. In the past, the demand from customers mostly came from their preferences on colors and species of wood products. The pressures from dominant customers alone do not significantly associate with adoption of corporate environmentalism. Recently the pressures have shifted to certified products, which require companies to possess environmental resources in order to maintain chain of custody, which in turn increase corporate environmentalism. This perhaps explains the significant interactive effect between institutional pressures from customers and corporate environmentalism when moderated by environmental resources.

Limitations and Future Research

An inherent problem in this research is the cross-sectional analyses that were used and the associated issues of determining the direction of causality. One major issue is the problem of reverse causality. The findings do not claim that environmental resources precede corporate environmentalism and vice versa. The possibility of reverse causality and that these two factors likely co-evolve has to be taken into consideration. With cross-sectional data, it cannot be determined whether firms have the resources because of their corporate environmentalism or does increasing resources lead to a greater corporate environmentalism. It is likely that corporate environmentalism and environmental resources co-evolve. Future research should utilize a longitudinal approach to capture the effects of time on the adoption of corporate environmentalism.

Another issue is common method bias. All the measures used in this study were self-reported measures. The aim of this research was to evaluate executives' perceptions, so self-reported measures are a must. However, this research would have benefited from a sampling approach which sought to elicit responses from groups of executives at a firm versus a single influential executive at a firm. Additionally, the firms were given complete anonymity in responding to the survey plus communication with WCMA and HMA member firms was done mostly through the trade associations and only partially directly through the researcher. We tried to increase the response numbers by giving full anonymity to the respondents and communicating through the trade associations. However, the trade-off, and a limitation, is that we did not have the exact number of the emails that was sent out and bounced back to assess the exact percentage for the non-response bias. Thus, the assessment of the response bias can only be

estimated. Future research should capture the number of emails sent and the one that bounce back due to invalid address in order to accurately calculate the non-response bias.

This study sampled only one industry, therefore placing restrictions on generalizing the findings to other contexts. The framework of corporate environmentalism may be more portable or transferable to other settings than the statistical results and accompanying arguments about linkages between constructs. Future research should cast a wider net and should sample among multiple industries or multiple segments within an industry. Testing this model in the context of American hardwood production presents an opportunity for future research. Although there are empirical studies analyzing the impact of coercive and mimetic pressures (such as customer and competitor pressures) on firms' strategies, the field is open to empirical studies investigating the role of normative pressures on firms' strategies. In addition, the future research should separate out whether customer dominance matters if the customers do not want green products. It is possible that if the customers do not want the green products, it could lead to companies resisting green pressures. In this study, the survey did not explicitly ask about their demand for green products. This poses another critical limitation because it makes it difficult to clearly interpret the results since there is no explicit data on what the customers want. For example, the interaction could be interpreted as saying that firms will do more of what the customer wants when it is dominant. If possession of environmental resources is reflective of the customer's desire for green products (or not) already, the more dominant the customer, the more the company will have moved in the direction the customer wants with respect to its corporate environmentalism.

This work adds to a research stream that explores executives' perceptions and actions relative to the environment. Research in this domain is varied, and there are many opportunities

for further development of theoretical and empirical work. This research helps researchers in the domain of business and the environment seize these opportunities by either providing an element of clarity or expanding the range of possibilities.

Conclusions

This research aims to investigate how variations in the institutional context affect the ways businesses adopt corporate environmentalism. In particular, why do executives resist the adoption of corporate environmentalism? The purpose of this research is to understand under what conditions do organizations resist isomorphism. The findings show that the scarcity of resources hinders organizations from adopting corporate environmentalism even when they perceive pressures from customers.

Both resource and institutional perspectives are indispensable to sustainable competitive advantage (Deephouse, 1999; Oliver, 1997). The findings of this research complement both theories, for it suggests that both institutional pressures and environmental resources influence organizations to adopt corporate environmentalism. Additionally, an integration of the two perspectives is relevant in explaining corporate sustainable development and adoption of environmental practices (Bansal, 2005; Darnall, 2006). By integrating of the two perspectives, the results also add considerable merit to research on management and sustainability.

Scarcity of environmental resources is viewed as a moderating factor because it is expected to magnify or diminish the influence of institutional pressures. Environmental resources accentuate the relationship between institutional pressures and corporate environmentalism. This research has implications for helping organizations create and acquire the necessary resources for adopting environmental strategies, which in turn will help improve their sustainable environmental practices while achieving financial performance.

Chapter 6 References

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Table 6-1: Fit Statistics from Confirmatory Factor Analyses

Number of factors	χ^2	$\Delta\chi^2$ ^a <i>df</i>	<i>df</i>	CFI ^a	GFI ^b	NNFI ^c	SRMR ^d	RMSEA ^e	90% CI for RMSEA ^f
Three factor model	768.39	192.49 (7)	296	0.851	0.703	0.836	0.109	0.107	(0.0975 ; 0.116)
Four factor model	649.92	74.01 (4)	293	0.886	0.737	0.873	0.097	0.093	(0.0836 ; 0.103)
Five factor model	575.90	-	289	0.902	0.760	0.890	0.089	0.084	(0.0741 ; 0.0942)
Six factor model	516.33	59.57 (5)	284	0.919	0.779	0.907	0.079	0.076	(0.0659 ; 0.0869)

^a Comparative Fit Index

^b Goodness of Fit Index

^c Non-normed Fit Index

^d Standardized Root Mean Square Residual

^e Root Mean Square Error of Approximation

^f 90 Percent Confidence Interval for Root Mean Square Error of Approximation

Table 6-2: Descriptive Statistics and Pearson Correlations for All Variables

Variables	Mean	s.d.	1	2	3	4	5	6	7
1. Corporate Environmentalism	4.37	1.11	(0.90) ¹						
2. Customer Pressure	4.96	1.21	0.01	(0.74)					
3. Competitor Success	3.92	1.15	0.18*	-0.20*	(0.86)				
4. Environmental Resources	4.07	1.18	0.47**	0.04	0.09	(0.84)			
5. Organizational Slack	3.05	0.93	-0.07	-0.04	-0.01	0.04	(0.64)		
6. Firm Age	49.05	34.29	0.01	-0.02	-0.02	-0.07	-0.11		
7. Number of Employee	369.59	1970.00	0.15 [†]	-0.01	0.15	0.13	-0.06	-0.06	
8. Revenue	6.07	2.24	0.11	-0.33**	0.12	0.12	-0.14	0.20*	0.14

¹ Numbers in parentheses are the Cronbach alphas or reliabilities of the measures.

[†] p < .10

* p < .05

** p < .01

Table 6-3: Results of Regression Analysis - Mean Centering Variables with SD

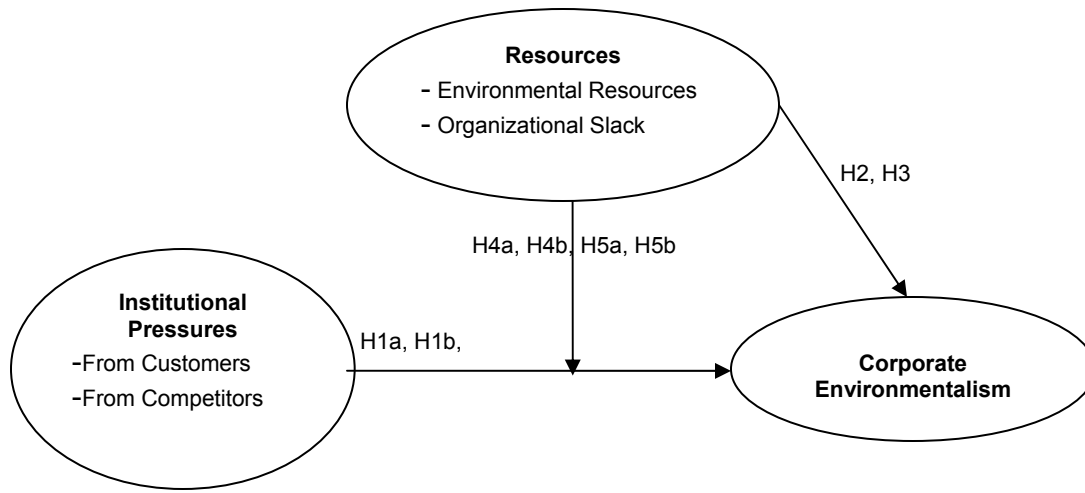
Variables	Model 1		Model 2 Main effects		Model 3		Model 4		Model 5		Model 6		Model 7	
	Control	S.E.		S.E.	ER pairs	S.E.	OS pairs	S.E.	CM pairs	S.E.	CS pairs	S.E.	Full Model	S.E.
Control														
Firm Age	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
No. of Employee	0.00 [†]	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Revenue	0.06	(0.04)	0.01	(0.04)	0.01	(0.04)	0.02	(0.04)	0.00	(0.04)	0.02	(0.04)	0.01	(0.04)
Main Effects														
Market Pressures from Customers			0.03	(0.08)	0.01	(0.08)	0.03	(0.08)	0.00	(0.08)	0.05	(0.08)	0.01	(0.08)
Market Pressures from Competitors			0.13 [†]	(0.08)	0.12	(0.08)	0.13 [†]	(0.08)	0.10	(0.08)	0.16*	(0.08)	0.13	(0.08)
Environmental Resources			0.43**	(0.07)	0.39**	(0.08)	0.42**	(0.07)	0.39**	(0.08)	0.43**	(0.08)	0.39**	(0.08)
Organizational Slack			-0.10	(0.09)	-0.11	(0.09)	-0.09	(0.10)	-0.11	(0.09)	-0.09	(0.09)	-0.10	(0.09)
Moderating Effects														
Environmental Resources x Market Pressures from Customers					0.12*	(0.06)			0.12*	(0.06)			0.12*	(0.06)
Environmental Resources x Market Pressures from Competitors					-0.04	(0.06)					-0.06	(0.06)	-0.04	(0.06)
Organizational Slack x Market Pressures from Customers							0.07	(0.09)	0.01	(0.08)			0.03	(0.09)
Organizational Slack x Market Pressures from Competitors							0.08	(0.09)			0.05	(0.08)	0.07	(0.09)
Constant	4.08		4.27		4.28		4.25		4.30		4.22		4.26	
df	133		130		130		130		130		130		130	
R ²	0.04		0.26		0.29		0.27		0.29		0.27		0.30	
Adjusted R ²	0.01		0.22		0.24		0.22		0.24		0.22		0.23	
F	1.65		6.31**		5.62**		4.98**		5.54**		5.05**		4.62**	

† p < .10

* p < .05

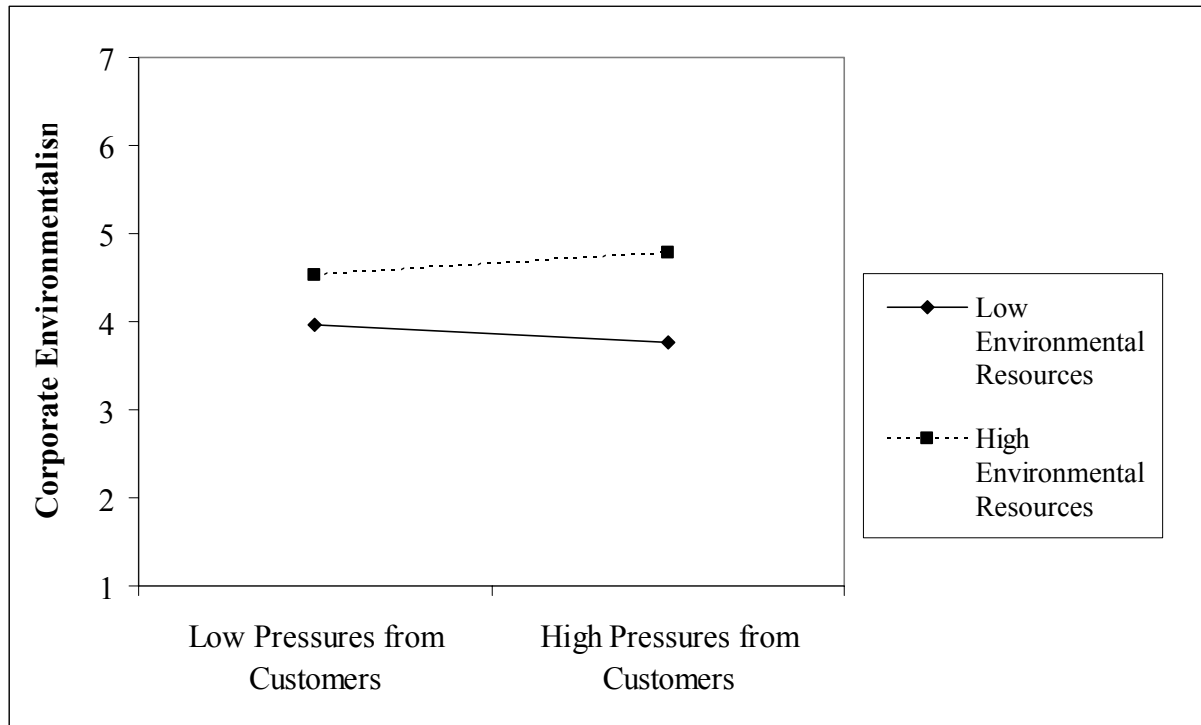
** p < .01

Figure 6-1: Hypothesized Influence of Market Pressure and Instrumentality on corporate responsibility initiatives, Moderated by Organizational Slack



Control Variables: Firm Age, Employees, Revenue

Figure 6-2: Corporate Environmentalism and Interaction between Pressures from Customers and Environmental Resources



Chapter 6 Appendix

Possible responses for the perceived dominance of customers, perceived success of competitors, environmental resources, and corporate environmentalism were a seven-point Likert-type response format ranging from “strongly disagree=1”, “disagree=2”, “slightly disagree=3”, “neutral=4”, “slightly agree=5”, “agree=6”, and “strongly agree=7”

Perceived dominance of customers

With regard to my main customers, ...

1. ...our firm's well-being depends on their purchases.
2. ...introducing higher costs to them would be detrimental to our firm.
3. ...good relationships with them are essential to our firm.
4. ...they are among the largest buyers in the industry.

Perceived success of competitors

My main competitors who sell certified wood products...

1. ...have benefited greatly from selling certified wood products.
2. ...are perceived favorably by others in our industry.
3. ...are perceived favorably by suppliers.
4. ...are perceived favorably by customers.

Environmental resources

1. My firm's strategy to reduce its energy consumption is unique in our industry
2. Our strategy to reduce wood waste is different from others in our industry
3. Our strategy to reduce non-wood waste (e.g., emissions, fuel consumption) is different from others in our industry
4. The implementation of our wood waste reduction strategy is considered valuable within our firm
5. The reduction of our non-wood waste is considered valuable within our firm

Corporate environmentalism

1. At our firm, we make a concerted effort to have every employee understand the importance of environmental conservation to our business
2. Our firm has a clear policy statement urging environmental awareness
3. Environmental conservation is a high-priority activity in our firm
4. Environmental conservation is vital to our firm's survival
5. Our firm has integrated environmental goals into our strategic planning process
6. In our firm, “quality” includes reducing our environmental impact
7. At our firm, we link environmental objectives with our other corporate goals

8. Our firm is engaged in developing products and processes that minimize environmental impact
9. We emphasize the environmental aspects of our products and services in our sales promotions
10. Our marketing strategies for our products and services have been influenced by environmental concerns

Possible responses for organizational slack was a seven-point Likert-type response format ranging from “Output will not be affected =1”, “Output will fall by less than 10%=2”, “Output will fall by about 10%=3”, “Output will fall by less than 20%=4”, and “Output will fall by 20% or more =5”

Organizational slack

1. Assume that you suddenly must lay off 10% of your production workforce, how seriously would your production output be affected over the next year?
2. Assume that 10% of all managers' time must be spent on some non-productive task such as completing government forms, how seriously would your output be affected over the next year?
3. Assume that your firm's annual operating budget is reduced by 10%, how significantly would your work be affected over the next year?

Chapter 7

Conclusion and Future Directions

This chapter provides conclusions based on the research objectives proposed for the dissertation, and recommends future research relative to environmental certification within the North American hardwood products industry.

Conclusions

Conclusions stated in this chapter address the research objectives stated at the beginning of the dissertation. After addressing the research objects, future research relative to forest certification and corporate environmentalism within the North American hardwood products industry is recommended. Three key contributions are addressed as a result of conducting this research: 1) a better understanding of how the resources and capabilities of firms as well as institutional pressures play a role in decisions to integrate corporate environmentalism; 2) a more comprehensive examination of RBV and institutional perspectives in the context of business and the natural environment; and 3) pragmatic results that provide answers to key questions surrounding the fast-growing “green-certified” residential building industry and how hardwoods can be better positioned to take advantage of this growth. In addition, practical implications will be drawn for green building programs and the residential housing value chain. The following are the research objectives stated at the beginning of this dissertation.

Theoretical Research Objectives

1. Empirically test a theoretical model using RBV and institutional theory to explain corporate environmentalism.
2. Empirically test the relationship between firms’ resources and capabilities and their corporate environmentalism.
3. Empirically test the relationship between perceived institutional pressures from green building programs and firms' corporate environmentalism.
4. Empirically investigate the nature of the relationship between the resources and capabilities of firms and their perceived institutional pressures from green building programs and their effects on corporate environmentalism.

Applied Research Objectives

5. Understand the perception of key members of the residential building products value chain of green building programs and the role of hardwoods in green building programs.
6. Understand the perception of hardwood managers regarding the key factors driving the use of hardwoods in green buildings.
7. Understand the impact of green building programs on hardwood markets.
8. Investigate chain of custody issues for environmentally certified materials, relative to the adoption of environmental certification.

Objective 1: Combining RBV and institutional theory in a theoretical model to explain corporate environmentalism

This study highlights the importance of researchers beginning to attend to the multiple environmental strategies that organizations employ to respond to institutional pressures. This study built on frameworks such as that provided by Oliver (1991), and later by Deephouse (1999) to specify the organizational and environmental factors that condition those strategic choices. Academic knowledge about strategic choices in organizational resources is relatively well-developed, but there is great potential in beginning to explore the causal dynamics of environmental strategic choices in contexts in which institutional pressures are critical. Overall, our findings call for a contingency perspective to specify the nature of environmental resources when discussing its impact on corporate environmentalism.

Objective 2: Testing the main effects between firms' resources and capabilities and their corporate environmentalism

Important foci, as this research progresses, are to what extent can firms adopt corporate environmentalism based on the resources that they already have; and whether strategically obtaining additional environmental resources will help firms better adopt corporate

environmentalism. From a resources-based perspective, the results showed that environmental resources positively associate with corporate environmentalism. From this finding, a focal firm is more likely to be environmentally concerned when it possesses more environmental resources. An organization that possesses a unique bundle of resources and capabilities can differentiate itself and deviate from norms which ultimately can increase its competitive advantage (Barney, 1991; Peteraf, 1993; Wenerfelt, 1984).

Objective 3: Testing the main effects between institutional pressures and firms' corporate environmentalism

By incorporating the effects of imitation and norms set by rivals and customers, this work extends current theory by integrating competitive context with managers' resource acquisition decisions. This extension also informs research on the dilemma that managers face when choosing between conformity and deviations from norms set by rivals and customers (Deephouse, 1999; Oliver, 1991). From an institutional perspective, the findings showed that institutional pressures from competitors positively associate with corporate environmentalism. Based on this result, when a focal firm perceives high success of competitors who sell green products, the firm will be more likely to adopt corporate environmentalism. Mimetic pressures may cause an organization to change over time to become more like other organizations in its environment. The perceived pressures will lead managers to conform to norms set by competitors through the isomorphism process (DiMaggio and Powell, 1983).

Objective 4: Testing the interactive effects between institutional pressures and firms' corporate environmentalism

This study extends strategic balance theory (Deephouse, 1999) by empirically showing how the scarcity of necessary resources increases the resistance to isomorphic pressures. This

finding helps researchers better understand the trade-offs between differentiation and conformity. Strategic balance theory managers identify the strategic balance point where the benefits of reduced competition are offset by the costs of legitimacy challenges (Deephouse, 1999). Instead of Porac et al.'s (1989) competitive cusp, the term strategic balance point is used because firms in this study balance competitive and institutional forces (Deephouse, 1999). The results of this study suggest that resource considerations play an important role in determining this balance point. My findings suggest that firms which do not possess the necessary resources to conform may instead differentiate themselves by actively pursuing a contrary orientation.

Objectives 5, 6, 7, and 8: Investigating hardwood managers' perceptions of green building, certification outcomes, certified wood products market, and chain of custody issues for environmentally certified materials.

This research explored hardwood industry executives' perceptions of green building programs. The findings help identify the impact of green building programs on hardwood markets. In particular, the green building materials market is growing, which creates more demand for certified wood products. Although there are several obstacles for offering certified wood products, including lack of knowledgeable human resources and financial capital, the markets for certified woods are expanding. It is critical that wood product companies understand the certification process in order to capture the market, whether or not a premium can be charged on certified wood products. Customer demand benefits of selling certified woods included satisfying existing customer demand for green products, gaining new customers in existing markets, and improving their standing in the eyes of customers relative to competitors. Of the perceived benefits of selling certified woods examined, environmental preparedness benefits are tied to, in part, the image of a firm and are tied only indirectly to a firm's customers and

competitors via regulations, regulatory groups, and environmental groups. Perhaps wood industry firms are well aware of the consequences of damaged image (Panwar et al., 2006) and view selling certified woods as a means to decrease the potential for negative press, tied to the natural environment, for their firm. At the same time, perhaps firms are not as firmly convinced about those benefits tied more directly to their customers and competitors.

The practical implication of this research is to engage in resources acquisition to optimize environmental performance. In particular, based on the phenomenon studied, this research has implications for the sustainability practices within the forest products industry. It suggests that initiatives which help organizations create and acquire the necessary resources for adopting environmental strategies will help improve their sustainable environmental practices. It is interesting to note that the main effect of institutional pressures from customers do not significantly associate with corporate environmentalism. However, when moderated by environmental resources, the relationship between dominance of customers and corporate environmentalism is significant. In contrast, while the main effect of institutional pressures from competitors significantly associate with corporate environmentalism, the interaction between institutional pressures from competitors and corporate environmentalism was not significant when moderated by environmental resources. The conservative nature of the industry leads the wood products firms to conform with the norms set by rivals, which can explain the significant main effect of the success of competitors. In the past, the demand from customers mostly came from their preferences on colors and species of wood products. The pressures from dominant customers alone do not significantly associate with adoption of corporate environmentalism. Recently the pressures have shifted to certified products, which require companies to possess environmental resources in order to maintain chain of custody, which in turn increase corporate

environmentalism. This perhaps explains the significant interactive effect between institutional pressures from customers and corporate environmentalism when moderated by environmental resources.

Limitations and Future Directions

An inherent problem in this research is the cross-sectional analyses that were used and the associated issues of determining the direction of causality. One major issue is the problem of reverse causality. The findings do not claim that environmental resources precede corporate environmentalism and vice versa. The possibility of reverse causality and that these two factors likely co-evolve has to be taken into consideration. With cross-sectional data, it cannot be determined whether firms have the resources because of their corporate environmentalism nor does increasing resources lead to a greater corporate environmentalism. It is likely that corporate environmentalism and environmental resources co-evolve. Future research should utilize a longitudinal approach to capture the effects of time on the adoption of corporate environmentalism. If this study can be extended longitudinally, there will be an opportunity to confirm the causal directions of relationships.

Another issue is common method bias. All the measures used in this study were self-reported measures. The aim of this research was to evaluate executives' perceptions, so self-reported measures are a must. However, this research would have benefited from a sampling approach which sought to elicit responses from groups of executives at a firm versus a single influential executive at a firm. Additionally, the firms were given complete anonymity in responding to the survey plus communication with WCMA and HMA member firms was done mostly through the trade associations and only partially directly through the researcher. Survey responses are self-determined and allow for social desirability bias, especially when responses

involve sensitive issues that may possibly gain media scrutiny, such as environmental concerns. We tried to increase the response numbers by giving full anonymity to the respondents and communicating through the trade associations. However, the trade-off, and a limitation, is that we did not have the exact number of the emails that was sent out and bounced back to assess the exact percentage for the non-response bias. Future research should capture the number of emails send and the one that bounce back due to invalid address in order to accurately calculate the non-response bias.

By restricting the sample to only the wood and forest products industries, the ability to generalize results to other industries or organizational settings is limited. The independent variables may differ based on the industry sampled. As such, the dependent variables and findings should not be generalized without due consideration of these limitations. However, a restricted sample does add more power to the findings, because uncovering findings in a sample in which the variance in the independent variables is restricted is more difficult than when the variance is large. The framework of corporate environmentalism may be more portable or transferable to other settings than the statistical results and accompanying arguments about linkages between constructs. Future research should cast a wider net and should sample among multiple industries or multiple segments within an industry. Testing this model in the context of American hardwood production presents an opportunity for future research. Although there are empirical studies analyzing the impact of coercive and mimetic pressures (such as customer and competitor pressures) on firms' strategies, the field is open to empirical studies investigating the role of normative pressures on firms' strategies. In addition, future research should separate out whether customer dominance matters if the customers do not want green products. It is possible that if the customers do not want the green products, it could lead to companies resisting green

pressures. In this study, the survey did not explicitly ask about their demand for green products. This poses another critical limitation because it makes it difficult to clearly interpret the results since there is no explicit data on what the customers want. For example, the interaction could be interpreted as saying that firms will do more of what the customer wants when it is dominant. If possession of environmental resources is reflective of the customer's desire for green products (or not) already, the more dominant the customer, the more the company will have move in the direction the customer wants with respect to its corporate environmentalism.

This work adds to a research stream that explores executives' perceptions and actions relative to the environment. Research in this domain is varied, and there are many opportunities for further development of theoretical and empirical work. This research helps researchers in the domain of business and the environment seize these opportunities by either providing an element of clarity or expanding the range of possibilities.

Chapter 7 References

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Appendix A: Data Dictionary

Institutional Pressures

Respondents indicated their agreement with the following, anchored with one for Strongly Disagree to seven for Strongly Agree.

Perceived success of competitors that have adopted ... (The Cronbach's alpha reported by Teo et al. was 0.94.)

- My main competitors that have adopted ... have benefited greatly.
- My main competitors that have adopted ... are perceived favorably by others in the same industry.
- My main competitors that have adopted ... are perceived favorably by suppliers
- My main competitors that have adopted ... are perceived favorably by customers

Perceived dominance of suppliers that have adopted ... (The Cronbach's alphas reported by Teo et al. were 0.8)

- With regard to my main suppliers that have adopted..., my firm's well-being depends on their resources
- With regard to my main suppliers that have adopted..., my firm cannot easily switch away from them
- With regard to my main suppliers that have adopted..., my firm MUST maintain good relationships with them
- With regard to my main suppliers that have adopted..., they are the core suppliers in a concentrated industry

Perceived dominance of customers that have adopted ... (The Cronbach's alphas reported by Teo et al. were 0.93)

- With regard to my main customers that have adopted..., my firm's well-being depends on their purchases
- With regard to my main customers that have adopted..., my firm cannot introduce switching cost to them
- With regard to my main customers that have adopted..., my firm MUST maintain good relationships with them

- With regard to my main customers that have adopted..., they are the largest customers in the industry

Environmental Resources

(The Cronbach's alpha reported by Clemens and Douglas (2006) was 0.81)

Respondents indicated their agreement with the following, anchored with one for Strongly Disagree to seven for Strongly Agree.

Rare (Barney, 1991:101)

- The implementation of your environmental strategy is unusual in your industry.
- Your customers or suppliers consider your environmental strategy unusual.
- Very few firms in your industry implement their environmental strategy in the way you do.

Valuable (Barney, 1991:101)

- The implementation of your environmental strategy is considered valuable within your firm.
- The implementation of your environmental strategy is considered valuable to your customers or suppliers.
- The implementation of your environmental strategy improves your efficiency and effectiveness.

Non-substitutable

- Other efforts within your firm could easily substitute for the implementation of your environmental strategy.
- Your customers or suppliers believe that other efforts could easily substitute for the implementation of your environmental strategy.

Learning Capabilities

Respondents indicated their agreement with the following, anchored with one for Strongly Disagree to seven for Strongly Agree.

Codifiability (Coefficient alpha reported by Kogut and Zander (1993) was 0.678)

- Your firm could write a useful manual describing the implementation of your environmental strategy.

- Large parts of the process to implement your environmental strategy are embodied in standard type software that your firm modified.
- Large parts of the process to implement your environmental strategy are embodied in software developed within your firm.
- Your firm has extensive documentation describing critical parts of your implementation of your environmental strategy.

(Coefficient alpha reported by Kogut and Zander (1993) was 0.785) New environmental personnel can easily learn how to implement your environmental strategy by talking to skilled employees.

- New environmental personnel can easily learn how to implement your environmental strategy by studying written documentation.
- Education and training new environmental personnel is a quick and easy job.
- New environmental personnel know enough after high school training to implement your environmental strategy.
- New environmental personnel know enough after their vocational training to implement your environmental strategy.

Organizational Slack

(The alpha reported by Nitin and Ranjay (1996) was 0.79)

Respondents indicated their agreement with the following, anchored with one for “output will not be affected,” to five for “output will fall by 20% or more.” The midpoint, 3, could be chosen to indicate that output would fall by about 10 percent, the same as the proposed reduction in resources.

- Assume that due to some sudden development, 10% of the time of all people working in your department has to be spent on work totally unconnected with the tasks and responsibilities of your department. How seriously will your output be affected over the next year?
- Assume that due to a similar development, your department's annual operating budget is reduced by 10%. How significantly will your work be affected over the next year?

Corporate Environmentalism

Respondents indicated their agreement with the following, anchored with one for Strongly Disagree to seven for Strongly Agree.

Environmental orientation (Alpha for internal orientation scale: 0.89. Alpha for external orientation scale: 0.73.)

- At our firm, we make a concerted effort to make every employee understand the importance of environmental preservation.
- Our firm has a clear policy statement urging environmental awareness in every area.
- Environmental preservation is a high-priority activity in our firm.
- Preserving the environment is a central corporate value in our firm.
- The financial well-being of our firm does not depend on the state of the natural environment.
- Our firm has a responsibility to preserve the environment.
- Environmental preservation is vital to our firm's survival.
- Our firm's responsibility to its customers, stockholders, and employees is more important than our responsibility toward environmental preservation.

Environmental strategy focus (Alpha for corporate strategy focus scale: 0.90. Alpha for business/functional strategy focus scale: 0.86.)

- Our firm has integrated environmental issues into our strategic planning process.
- In our firm, "quality" includes reducing our environmental impact.
- At our firm, we link environmental objectives with our other corporate goals.
- Our firm is engaged in developing products and processes that minimize environmental impact.
- Environmental issues are always considered when we develop new products.
- We emphasize the environmental aspects of our products and services in our ads.
- Our marketing strategies for our products and services have been influenced by environmental concerns.

In our firm, product-market decisions are always influenced by environmental concerns.

Appendix B: A timeline of major research events

Date	Items	Status
May 14 th , 2009	<ul style="list-style-type: none"> • Committee approval of dissertation proposal 	Completed
Late May 2009	<ul style="list-style-type: none"> • IRB submissions for the dissertation • Interviews of key members of the residential green building market value chain 	Completed
June 2009	<ul style="list-style-type: none"> • Comprehensive exam 	Completed
December 2009	<ul style="list-style-type: none"> • Mail 1st wave of online surveys to WCMA and HMA via electronic newsletter by the trade associations (12/08/2009) • Follow-up emails and surveys to WCMA and HMA participants by the trade associations (12/15/2009) • Mail 1st wave of online surveys to NHLA (12/22/2009) 	Completed
January 2010	<ul style="list-style-type: none"> • Follow-up emails and surveys to NHLA participants by researcher (01/05/2010) 	Completed
March 2010	<ul style="list-style-type: none"> • Complete the preliminary analysis of WCMA and HMA executive survey data • Article aimed at the <i>Forest Products Journal</i> 	Completed
April 2010	<ul style="list-style-type: none"> • Article aimed at the journal <i>Business Strategy and the Environment</i> 	Completed
May 2010	<ul style="list-style-type: none"> • Article aimed at the <i>Academy of Management Journal</i> 	Completed
May 2010	<ul style="list-style-type: none"> • Future research section for the dissertation • Provide research findings report for the sponsors 	Completed
June 2010	<ul style="list-style-type: none"> • Defend dissertation 	To be completed



Appendix C: Full Survey Instrument

Implied Informed Consent Form for Social Science Research The Pennsylvania State University

Title of Project: The Effects of Resources and Institutional Pressures on Corporate Environmentalism: Investigation of Green Building Value Chain

Principal Investigator: Ruth Protpakorn
214 Forest Resources Building
University Park, PA 16802
(814) 865-9485; rup145@psu.edu

Advisor: Dr. Judd Michael
211 Forest Resources Building
University Park, PA 16802
(814) 863-2976; jhm104@psu.edu

1. **Purpose of the Study:** The purpose of this research is to investigate the effects of green building movement on corporate environmentalism within the U.S. wood products industry.
2. **Procedures to be followed:** You will be asked to answer questions about characteristics of your company, characteristics about yourself, the general business environment, and chain of custody certification.
3. **Benefits:** The benefits to the forest products research community include a better understanding of the effects of the green building movement on corporate environmentalism within the U.S. wood products industry.
4. **Duration/Time:** It will take about 8 to 10 minutes to complete the survey.
5. **Statement of Confidentiality:** Your participation in this research is confidential. The survey does not ask for any information that would identify who the responses belong to. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared because your name is in no way linked to your responses. If you complete the survey online your confidentiality will be kept to the degree permitted by the technology used. No guarantees can be made regarding the interception of data sent via the Internet by any third parties. Please print a copy of this form for your records.
6. **Right to Ask Questions:** You can ask questions about this research. Contact Ruth Protpakorn at (814) 865-9485 with questions. You can also call this number if you have complaints or concerns about this research.
7. **Voluntary Participation:** Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawing from this study will involve no penalty or loss of benefits you would receive otherwise.

You must be 18 years of age or older to take part in this research study.

Completion and submission of the survey implies that you have read the information in this form and consent to take part in the research.

Remember that all your responses are CONFIDENTIAL and only Penn State Researchers will see your answers.

1. Which category best describes your position in your company? (Choose one only)

CEO	Chief executive of a business unit or division
President	Engineering Manager
COO	Marketing Manager
CFO	Sales Manager
Operations/Production Manager	Human Resources Manager
Other _____ (please specify)	Vice President of _____ (please specify)

2. What is your company's primary product?

Wood Components
 Lumber
 Cabinets
 Furniture
 Flooring
 Other (please specify) _____

3. How long have you worked in the wood products industry? _____ years

4. How long have you worked in industries other than wood products? _____ years

5. How long have you worked for your current employer? _____ years

6. Approximately how many full-time production employees are working for your company today? _____

7. What year was your company founded? _____

8. What were your company's total **2008** sales?

Less than \$500K	\$500K – \$1 million
\$1 – \$2.5 million	\$2.5 – \$5 million
\$5 – \$10 million	\$10 – \$20 million
\$20 – \$30 million	\$30 – \$40 million
\$40 – \$60 million	Greater than \$60 million

9. Please mark the circle that best matches how much you agree with each of the following statements regarding environmental certification (e.g., SFI or FSC) of wood products.

Certification helps wood producers ...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
...to satisfy existing customer demand for green products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...to gain new customers in existing markets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...to gain new customers in new markets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...to improve their standing in the eyes of customers relative to competitors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...to maintain their competitive position with competitors who have chosen to adopt green certification.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...to improve their competitive position with competitors who have chosen NOT to adopt green certification.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...to improve upon a company's existing strategy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...to position their companies to pursue more stringent processes or product certifications (ex: ISO certification).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. **Green building** is an outcome of a design philosophy which focuses on increasing the efficiency of resource use — energy, water, and materials — while reducing building impacts on human health and the environment during the building's lifecycle, through better siting, design, construction, operation, maintenance, and removal.

Please mark the circle that best matches how much you agree with each of the following statements regarding green building.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Green building is a fad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Green building programs have provisions unfavorable to the wood products industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Independent third-party programs should determine the minimum standards of performance and sustainability in defining green building	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have employees who are knowledgeable about green building programs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being knowledgeable about green building programs does not benefit our firm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Green building will drive the future demand of certified wood products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Demand for certified wood products is most strongly driven by commercial construction, not residential	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We offer certified wood products because of green building trends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We offer certified wood products in order to satisfy demand from a variety of customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have employees who are knowledgeable in Chain of Custody	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Please mark the circle that best matches how much you agree with each of the following statements.

My main competitors who sell certified wood products...	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
...have benefited greatly from selling certified wood products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...are perceived favorably by others in our industry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...are perceived favorably by suppliers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...are perceived favorably by customers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Does your company sell certified wood products?

Yes. (Please complete questions 13 to 15, then skip to question 19)

No. (Please skip questions 13 to 15)

If YES:

13. What percentage price increase do you normally receive as a premium for certified wood?

0%

1-3%

4-6%

7-9%

10-12%

13% or more

14. Please check all of the following forest certification programs that your firm participates in. What percentage of your total sales is certified by each of the following systems?

Forest Certification Programs:	Forest Stewardship Council (FSC)	Sustainable Forestry Initiative (SFI)	American Tree Farm System (ATFS)	Programme for the Endorsement of Forest Certification schemes (PEFC)	Canadian Standards Association (CSA)	Other (please specify)
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
% 2009 Sales	_____	_____	_____	_____	_____	_____

15. Please mark the circle that best matches how much you agree with each of the following statements.

Our firm has a clear policy statement urging environmental awareness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental conservation is a high-priority activity in our firm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The financial well-being of our firm does not depend on the state of the natural environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental conservation is vital to our firm's survival	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm's responsibility to its customers, stakeholders, and employees is more important than our responsibility toward environmental conservation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm has integrated environmental goals into our strategic planning process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In our firm, "quality" includes reducing our environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At our firm, we link environmental objectives with our other corporate goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our firm is engaged in developing products and processes that minimize environmental impact	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We emphasize the environmental aspects of our products and services in our sales promotions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our marketing strategies for our products and services have been influenced by environmental concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. Please mark the circle that best matches how much you agree with each of the following statements.

Our firm copes with increased environmental demands by...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
...having more people trained in environmental issues than required for day-to-day running of our business.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...paying excess prices for raw materials that meet higher environmental standards.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...buying more expensive equipment than strictly required resulting in improved environmental performance such as lower emissions or fuel optimization.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...initiating and managing relationships with external constituents such as regulators, legislators or local residents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Please mark the circle that best matches how much you agree with each of the following statements.

	Output will not	Output will fall	Output will fall	Output will fall	Output will fall
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	be affected	by less than 10%	by about 10%	by less than 20%	by 20% or more
Assume that you suddenly must lay off 10% of your production workforce, how seriously would your production output be affected over the next year?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assume that 10% of all managers' time must be spent on some non-productive task such as completing government forms, how seriously would your output be affected over the next year?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assume that your firm's annual operating budget is reduced by 10%, how significantly would your work be affected over the next year?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. Remember that all your responses are CONFIDENTIAL and no one else will ever see your answers. Please provide us with the following information:

Your Age:	_____
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Gender:	Male	Female
	<input type="radio"/>	<input type="radio"/>

Race:	White	African American	Hispanic	Native American	Asian	Other
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Education:	Some High School	High School or G.E.D.	Some College	College Degree	Advanced Degree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you!

We appreciate the time you have taken to answer these questions.

Please provide any additional comments, suggestions, or questions here.

If you have further comments, suggestions, or questions, please contact
 Ruth Protpakorn at (814) 865-9485; rup145@psu.edu or
 Dr. Judd Michael at (814)863-2976; jhm104@psu.edu; fax (814) 8865-3725

Vita

Ruthairat Protpakorn

Ruthairat was born in Bangkok, Thailand. She earned a Bachelor of Science (BS) degree in Marine Science in 2002 and a Master degree in Business Administration (MBA) in International Business focusing on corporate social responsibility in 2005 from the Monterey Institute of International Studies. After graduating with a MBA degree, she worked as an analyst and a consultant in various industries include financial, retail, and publishing industries. She was a consultant for Driscoll's Strawberries Associates, a statistical analyst for the McGraw-Hill, and a marketing analyst for Macy's. Ruthairat decided to pursue a doctoral degree in sustainable business and management at the Penn State University. Her research explores the interdisciplinary perspectives on the natural resources and strategic management. Her PhD dissertation focuses on the conditions through which organizations resist isomorphic adoption of corporate environmentalism.