

The Determinants of Managing Firm's Environmental Dynamic Capability: Human Capital Perspective

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Abstract

This paper combines the natural resource-based theory and SHRM theory aims to investigate the determinants of green HR practice. Our study contributes to SHRM literature in green management, providing an integrative framework to facilitate firms' environmental dynamic capability from SHRM perspective. By using qualitative analysis of interviewing 5 Taiwanese companies across different industries, the result reveals that top manager's green leadership would lead to green human capital development in attempt to facilitate firm's environmental dynamic capabilities.

Introduction

Recent research proposed manager's leadership such as leader's strong ecological stewardship, manager's environmental desire to all the staff would make the influence on firm's greening activities from the combination of control theory and goal theory (Branzei, et al., 2004). While other scholars take natural resource-based view (Christmann, 2000; Hart, 1995), suggesting that organizations should build inimitable capabilities such as tacit capabilities of TQM, the socially complex capabilities of cross-stakeholder management, and the capabilities of providing a shared vision (Hart, 1995; Aragon-Correa & Sharma, 2003) in order to make their environmental strategies be implemented successfully.

We consider both green vision and organization's inimitable assets are crucial to bring organization's environmental dynamic performance. However, very few studies examine how manager's green leadership leads to firm's environmental dynamic capabilities from

SHRM perspective. To fill in this gap, this study integrates SHRM theory and natural-resource-based view to investigate green management from HR perspective. Qualitative analysis is adopted of interviewing five Taiwanese company across different industries. The results reveals that manager's who has greater green leadership would facilitate firm's green human capital development in attempt to bring firm's environmental dynamic capabilities.

Literature Review and Theoretical Development

Natural-Resource Based View (Natural-RBV) and SHRM Perspective for Developing Firm's Environmental Dynamic Capabilities

Based on Hart (1995) natural RBV theory, there are three greening strategies including pollution prevention, product stewardship, and sustainable development. Firstly, the pollution prevention strategy develops firms' continuous-improvement capability to reduce social resource waste. It is a tacit skill incorporate with firm's TQM and specific prevention strategy through organization's employees' greening involvement (Makower, 1993). Hart (1995) propose continuous-improvement is a causal ambiguous capability that it difficult to be duplicated by other firms. Secondly, the product stewardship strategy develops firms' stakeholder integration capability to establish the relationship among environmental staff and customers who are willing to buy recycled product (Hunt & Austerlitz 1990; Post & Altman, 1991). Lastly, sustainable development capability is formed by a strong sense with current environmental status. Hart (1995) proposes that organization should establish a firm-specific mission and consensus shared vision to acquire critical resources that help them create new skills and products as organization's sustainable assets.

For improving organization's sustainable development, Wei et al. (2011) propose that organizations can make their firm's operation more efficiency by acquiring diverse employees skills, knowledge in terms of implementing firm's strategic goals (Guest, 1987). In other words, employees' new skills developing, new knowledge learning would aid in organization's dynamic capabilities such as continuously creation, upgrade firm's unique resource and assets (Teece, 2007).

Firm's dynamic capabilities can be defined as sensing, observing opportunities and threats, catching the opportunities, and continuously creating firm's competitive advantages by combining, reconfiguring firm's tangible and intangible resources and capabilities (Teece, 2007). Hence we emphasize that firm's strategic HR resources and employees' capabilities can be firm's specific assets and difficult to be imitated by other competitors. We consider firm's green strategic HR practice such as availability of knowledge, education training, developing eco-centric value of employees, upgrading skills in helping employees to implement firm's green management goals, developing employees' eco-commitment (Fernandez et al., 2003) would aid in firm's customer-oriented responsiveness,

organization's learning and innovation, sustainable quality/efficiency improving.

Green Leadership

To implement green management from HR perspective, manager's green leadership would be the most important antecedent of developing strategic HR practices. Hart (1995) proposes that organization should have its firm-specific mission and consensus shared vision to acquire critical resources that help them create new skills and products as organization's sustainable development in the future. To form these critical green missions and visions, manager's leadership is important for developing firm's environmental practices (Fernandez et al., 2003). Fernandez et al. (2003) suggest that managers have responsibility to create firm's environmental values, commitments, aspirations that sharing with others.

Green Human Capital

According to SHRM literature, it can be implied firms' human capital is critical that organization should develop those capable and inimitable human assets. Lepak & Snell, (1999) propose that human capital is the valuable, firm-specific, and inimitable assets that is not easy to be duplicated by other competitors. Hatch & Dyer (2004) characterized human capital as HR selection (hiring external sources of human capital), HR development (internal investments in human capital), HR deployment (effective use of human capital), and HR inimitability.

Firstly, Hatch & Dyer (2004) propose that better educated employees are expected to have better productive human capital. In addition, firms can also arrange screening test to identify employee's skills, attitude that contribute to cumulate firm-specific human capital. In order to develop firm's green human capital, we propose that firm should be aware of applicants' attitude in environmental issue (Fernandez et al., 2003). Secondly, Hatch & Dyer (2004) propose that firms have to invest human resources development in order to create firm-specific human assets. Fernandez et al., (2003) propose that the improvement in employee's skills would help them achieve their task that related to environmental issue. Fernandez et al., (2003) further suggest that employee's environmental training under some environmental tasks (e.g. re-manufacture of products by using recycling materials) is necessary that make firms' green production more efficient and employees' work safer (Cook & Seith, 1991). Thirdly, human capital deployment means allocating human capital associated with organizational efficiency (Lopez-Cabrales et al., 2006). As human capital is known as human capital leveraging (Sherer, 1995), firms need to considerate making employee's skill match with job, and human resources should be well-disposed in order to make task-specific human capital (Hatch & Dyer, 2004). Lastly, as employees with firm-specific human capital work for another firm, what they have learned and developed from original company would be difficult to applied in a new environment (Becker, 1975).

Hence we propose that firm’s green skills, knowledge or green vision would be tacit through employee’s involvement and green teams’ interaction (Fernandez et al., 2003), it would be difficult for other competitors to imitate in the market.

The Relationship between Green Leadership and Green Human Capital

As manager’s diverse leading style make influence on employees’ behavior, Ramus (2001) shows that managers who are honest to employees and respect to employees’ criticism will acquire more environmental performance. Therefore, managers who build environmental vision, rewarding ideas for environmental improvement, and openness to employee’s ideas would facilitate employees' environmental behavior. (Fernandez et al., 2003). Furthermore, Fernandez et al., (2003) suggest that manager should aspire employees’ participation, make employee’s involve more in environmental improvement to acquire more performance. We propose top managers who have greater green leadership would actively facilitate employees' knowledge learning, skills development, and utilized employees' capability in order to bring firm's environmental performance.

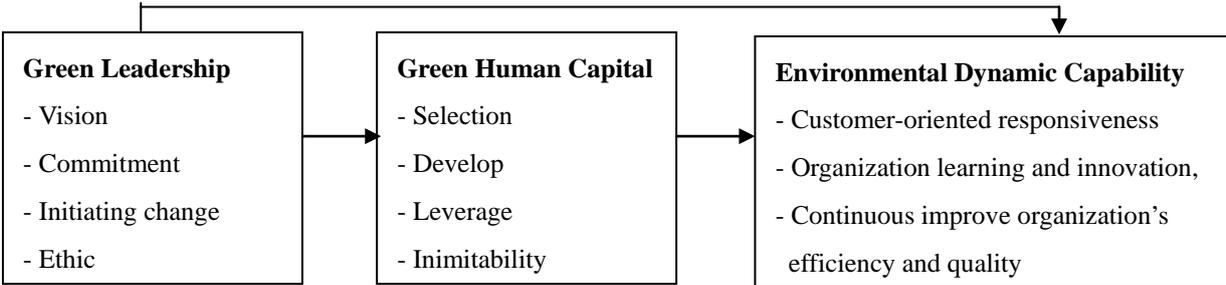
The Relationship between Green Human Capital and Environmental Dynamic Capabilities

Firms which pay attention to availability, experience, and knowledge of firm’s managerial HR capabilities would be successful in the market. Teece (2007) further suggest whether firms can sense new opportunities successfully in the dynamic environment depend on individual’s capabilities, knowledge, the ability to understand customer’s decision making (Nonaka & Toyama, 2007). In addition, the process of employees’ knowledge sharing, knowledge integrating is critical to firm’s dynamic capabilities. Therefore in order to generate firm’s environmental dynamic capabilities under the dynamic context, we propose organization should develop employees’ knowledge, skills, capabilities, experience, attitude, wisdom, creativities, and commitments with environmental issues which can create more competitive advantages.

Method

Research Framework

Figure 1. Research Conceptual Framework



Sample

This research adopts qualitative approach, both interview and secondary data were used as the data collection techniques. We choose five companies as our sample which are located in different industries including food production, electronics, furniture manufacturing, and manufacturing industry in Taiwan. We interviewed each company's CEOs, HR manager, marketing manager, R&D manager, engineering department manager between April and May, 2011.

Interview Question

1. When engaging in green management, what personal traits and leadership would your company's manager have to possess to fulfill green activities?
2. How can you manage and facilitate company green human capital?
3. What capability and advantage has been improved/acquired after developing green human capital and green leadership?

Result and Discussion

The Influence of Green Leadership and Environmental Dynamic Capability

Environmental initiative would be implemented by those leaders who are able to propose a new vision, initiating change, mobilizing resources (Anderson & Bateman, 2000; Branzei et al., 2004), posing environmental commitment, environmental values and ethics that are in consistency with societal expectation (Boiral, Cayer & Baron, 2009; Bansal, 2003; Bansal & Roth, 2000; Sharma, 2000). Hence we propose that if manager's green leadership is embedded in the organization, the firm's environmental dynamic capabilities would be developed quickly. As the evidences were shown in table 1 and table 2, five companies' top manager has not only vision to protect the environment and concerning environment sustainability, but also they have commitment and initiative to continuous improve their product, facilities and minimize waste to enhance manufacturing efficiency. Managers in company U, O and Y further regard customers' health, employees' safety and society development as the most important tasks in their business. We propose that:

Proposition 1: Manager's who has greater green leadership to propose a green vision, commitment to engage in green activities, initiating change to improve manufacturing process, and be ethical to caring customers' needs and employees' safety would bring firm greater environmental dynamic capability.

Table 1. Environmental Dynamic Capability

Construct	Dimension	Case Company				
		U company	N company	O company	E company	Y company
Environmental Dynamic Capability	Organization innovation & learning	1. Developing employee's mindset to stimulate green innovation	1. Focus on organizational system and facilities innovation	1. Key know-how to make MDI polyurethane foam 2. Innovation in manufacturing medical furniture	1. Product innovation 2. Take advantage of it technology to develop CPV solar cell	1. Substitute energy and materials for making paper-straws
	Customer-oriented responsiveness	1. Taking care of customer's needs 2. Customer is the boss 3. Friendly to our society.	1. Disclosure of our information 2. Taking care of customers and employees' health and safety	1. Customer's health and safety are our priority concerning 2. MDI material is used to protect customer's health	1. High quality with competitive price 2. Demand for its product exceed supply	1. Profit derives from energy saving initiatives
	Continuous improve organization's efficiency and quality	1. Buying new machine to examine their product strictly 2. Set up product examining center	1. New wire bonding technology	1. Combining high-tech technology to make their green product	1. Continuously improving LED light with electricity saving. 2. More light, less electricity wasting	1. new straw technology to produce paper without chemical materials.

Table 2. Green Leadership

Construct	Dimension	Case Company				
		U company	N company	O company	E company	Y company
Green Leadership	Vision	1. Environmental protection and sustainability management	1.Environmental protection 2.Raising the bar 3.Working together	1.The vision of product safety, health protection	1. Environmental protection and sustainability management	1. Environmental protection and sustainability management
	Ethical	1. Customers' health is our priority task. 2. Contribution and give feedback to our society	1.Customer-oriented development 2.Emphasizing safety and people's health	1.Customers' health and safety is our mission. 2.Contribution to society	1. Honesty is the best policy in our company.	1. Contribution to society 2. One of the member in FSC organization.
	Initiating change	1. The investment in new product / technology 2. Diversification strategy	1.Taking initiative 2.Improving our manufacturing process and service to create more business value.	1.Investment in new technology in order to improve their product	1. Continuously merge & acquisition other company 2. Diversification strategy	1. Combining high-tech technology to create E-paper product. 2. Diversification strategy
	Environment commitment	1. Altruistic management 2. Exemplary management	1.Continuously reduce waste (water, electricity) 2.Compliance with EICC-GeSI Audit	1.Safety, Health are our company's vision. 2.Being a green company		1. Commit to employees' career development

The Influence of Green Human Capital and Environmental Dynamic Capability

Based on Harch & Dyer (2004) classification, the result reveals that five companies regard green human capital as the important assets (see table 3). Company N, E and Y would cooperate with local university for seeking potential talents. In addition, Company N, O, E, Y, and U would give their employees appropriate training to develop necessary skill and new knowledge to continuously improve product quality, minimize the waste and make their manufacturing process more efficiency. As the result, companies which can recruit potential talents, be able to provide necessary training and allocate employee's capacity would bring their firm's innovation and product improvement and customer responsiveness.

We propose that: *Proposition2: The greater green human capital is developed (HR selection, HR development, HR deployment, HR inimitability), the greater firm's environmental dynamic capability*

Table 3. Green Human Capital

Construct	Dimension	Case Company				
		U company	N company	O company	E company	Y company
Green Human Capital	Selection	1. Specialized and professional capability	1. Cooperation with university 2. Compliance with law of EICC	1. Work attitude 2. applicant's mindset	1. Specialized capability 2. Cooperation with university	1. Cooperation with university 2. Cooperation with government
	Development	1. Training and promotion on environmental protection	1. Job rotation training	1. Training and promotion on environmental protection	1. Training on division of labor	1. Training and promotion on environmental protection
	Deployment	1. Establishing research center for leveraging employees' green HC	1. Encouraging employees to share green management knowledge	1. Cooperation with governmental research institute in order to leverage employees' green skills, knowledge	1. Team-oriented operation for manufacturing product	1. Establishing research center for leveraging employees' green HC 2. Encouraging green management knowledge sharing
	Inimitability	1. Provide international training to develop specific talents.	1. Regarding employees as the most valuable asset.	1. Employee's should develop strongly green mindset		1. Employees are rotated to share knowledge across different departments.

The Influence of Green Leadership and Green Human Capital

When company's manager posses green leadership (vision, ethical, initiating change, and commitment), it would be easier to develop firm's green human capital. For instance, CEO from company U often promote energy saving and sustainable development to their employees through daily meetings. Employees from company U not only learn how to reduce waste in the manufacturing process, but also they understand to choose the healthy material to protect their customers' body. As the result, managers who have greater green leadership would facilitate their employees to utilize their knowledge, skills, and deploy different employees' capabilities appropriately. We propose that: *Proposition3: Manager's who has greater green leadership to propose a green vision, commitment to engage in green*

activities, initiating change to improve manufacturing process, and be ethical to caring customers' needs and employees' safety would facilitate firms green human capital development.

Conclusion

As the result, we conclude that firm's manager should not only possess appropriate green leadership, but also be responsible for developing firms' green human capital in order to satisfy customer's needs, stimulating green R&D innovation and make their manufacture process more efficient. Based on natural resource-based view and SHRM theory, our study contributes to SHRM literature in green management, emphasizing manager's green leadership such as green vision, green commitment, initiating change and ethical leadership would facilitate organization to develop employees' green skill, knowledge for continuously improving firm's manufacturing efficiency and product quality. We suggest firm should build green dynamic capability by developing firm-specific green HR practice in the future.

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