



The linkages between internationalization and environmental strategies of multinational construction firms



Po-Han Chen ^a, Chuan-Fang Ong ^a, Shu-Chien Hsu ^{b,*}

^a Department of Civil Engineering, National Taiwan University, Taiwan

^b Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University, Kowloon, Hong Kong

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ABSTRACT

Multinational construction firms have increasingly engaged in more environmental management activities, however the relationship between internationalization performance and environmental proactivity remains unaddressed. The purpose of this study is to explore the linkage between internationalization and environmental strategy. The study posits that firms deploying a higher tier of environmental strategy correlate with higher degrees of internationalization. The sample of construction firms were drawn from the Engineering News-Record Top International Contractor list. Environmental information of each sample member was extracted through content analysis. Based on previous resource-based view studies, a schema of three clusters of environmental strategies was constructed to depict reactive, preventive, and proactive postures in strategic environmental management. Degree of internationalization is measured as investment intensity, geographical extensity, and geographical concentration. The results indicate that construction firms that are proactive in strategic environmental management exhibit greater internationalization up to an extent, where additional proactivity then no longer correlates with further heightened internationalization. In addition, the results present some preliminary findings on how multinational construction firms deploy strategic environmental capabilities, shedding light on internationalization portfolios across developed and developing regions.

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1. Introduction

Following the emergence of sustainability discussions in the late 1980s (Brundtland, 1987), the construction industry has received much attention as a result of its major environmental and social impacts. In the U.S., approximately 43% of carbon dioxide emissions result from the energy services required by residential, commercial, and industrial buildings (Brown and Southworth, 2008), and the construction industry consumes about 40% of materials entering the global economy (Roodman et al., 1995). Owing to the construction industry's severe impacts on the environment, advocates of sustainable construction strive to devise sustainable development concepts to embed into conventional construction practices, and to spur the transformation of organizational management.

Organizational studies in the construction field have paid special focus on environmental management systems and the engineering process (Ahn et al., 2013; Qi et al., 2010; Turk, 2009). While some of these environmental studies discuss the drivers and implementation implications of sustainable construction, seldom did the studies prove that environmental management improves a firm's competitive advantages and performance. As the advantages of green practices remain unclear, practitioners are more likely to hesitate in changing their business environmental orientation, unless coerced by legislation.

On the other hand, the environmental impacts of internationalization have been debated for decades. Recent studies found that multinational enterprises (MNE), contrary to the expectation that they would turn third world countries into "pollution havens" because of a malignant "race to the bottom," they actually foster better environmental performance (Christmann and Taylor, 2001; Kennelly and Lewis, 2003).

For construction firms, one of the perceived main impetuses to develop an environmental management system is the synergy effect when entering the international construction market (Zeng

* Corresponding author. Tel.: +852 27666057.

E-mail addresses: pohanchen@ntu.edu.tw (P.-H. Chen), d00521033@ntu.edu.tw (C.-F. Ong), mark.hsu@polyu.edu.hk (S.-C. Hsu).

et al., 2003). A study on Korean contractors concluded that global contractors are more proactive in environmental strategies than their local counterparts (Park and Ahn, 2012). Zuo et al. (2012) also found a high commitment to environmental reporting among international contractors. However, recent environmental strategy studies in the construction industry (Fergusson and Langford, 2006; Park and Ahn, 2012; Tan et al., 2011), have not addressed the impacts of environmental proactivity on internationalization.

Furthermore, the growth of sustainability services in the construction sector has been characterized by a distinct global unevenness; relative economic prosperity in the developed world has afforded market and policy expansion whilst developing countries have been unable to prioritize sustainability in the same way (Preece et al., 2011). The distinctive impetus of internationalization thus may particularly draw multinational construction firms towards particular environmental strategic settings.

The construction industry has the highest rate of certified ISO 14000 companies among all industries (Marimon et al., 2011), yet construction firms are seldom sampled and studied for their business performance in the environmental management literature. The construction industry differs from manufacturing and service industries in many respects, including the products offered, the market segments served, technology, completion structure, capital and labor market variations, and the ecological impacts of the products (Zutshi and Creed, 2015). The construction industry's project-based business character is different from other business models due to the limited time frame and often one-off nature of its projects, involvement of adversarial relationships among actors, separation of design and production, competitive tendering, high degree of uncertainty, and standardization difficulty (Mokhlesian and Holmén, 2012). These distinguishing characteristics should be taken into account when considering how construction firms could benefit from pursuing proactive environmental management.

There have been no studies from the strategic environmental management perspective that articulate the interplay between a multinational contractor's internationalization characteristics and its environmental practices. Such a gap in identifying this causal relationship has left empirical and theoretical ambiguity. A firm's pursuit of a proactive environmental strategy implies both substantial investment and a long-term commitment to market development. Thus a relevant study should examine how firms perform on internationalization based on their environmental strategies.

However, unlike financial reporting, which has many standardized sources of data available, environmental data for construction firms suffers a lack of consensus on how information should be presented. In recent times, an increase in construction firms participating in voluntary environmental disclosure has provided access for scholars to explore corporate environmental practices and performances. Thus now a firm's proactivity in environmental management can be measured and extracted through the content analysis method.

The primary goal of this study is to explore the relationship between environmental strategy and degree of internationalization in multinational construction firms. This study attempts to accomplish a few tasks related to this goal. The study starts with delineating environmental strategies grounded in the environmental management literature of resource-based view (RBV) approach, and construction management. Content analysis has been adopted as the method to extract the environmental practices of multinational construction firms listed in the Engineering News-Record (ENR) publication. These practices are further clustered into environmental strategies to examine their relationship with degree of internationalization. To examine the effects of environmental strategy on different dimensions of internationalization, three

internationalization indicators are adopted in this study: investment intensity, geographical extensivity, and geographical concentration. Further, based on geographical extensivity and concentration, the study investigates whether there are different impacts on a firm's business distribution portfolio across developed and developing regions with similar environmental strategy. The study seeks to answer three questions pertaining to the linkage between environmental strategy and internationalization, the dimension of internationalization related, and how environmental strategy diversify a firm's business portfolio across developed and developing regions.

2. The resource-based view of competitive advantages

RBV underscores that every firm possesses a unique bundle of resources and capabilities that influences its strategic choices and ultimately its competitive advantage (Barney, 1991; Wernerfelt, 1984). Competitive advantage is seen as rooted in how a firm links its core competencies to resources in the firm's external environment while depending on organizational capabilities to leverage key resources. Based on the assumption of resource heterogeneity and imperfect mobility, a resource can generate sustained competitive advantage if it is valuable, rare, inimitable, and supported by tacit skills or socially complex organizational processes (Barney, 1991).

One prominent theoretical paradigm extending from the RBV strand is the natural resource-based view (NRBV) proposed by Hart (1995). NRBV contends that competitive advantages are rooted in a firm's capability to facilitate environmentally sustainable economic activity. According to this theoretical position, firms can gain the competitive advantages of lower costs, preempting the competition, and staking out more secure future positions through strategic environmental capabilities such as pollution prevention, product stewardship, and sustainable development.

In essence, studies on proactive environmental management often discussed competitive advantages in terms of cost reduction and differentiation. Cost reduction can be achieved by producing less waste and better utilizing inputs, resulting in lower costs for raw materials, waste disposal, and pollution activities (Hart, 1995). Empirical evidence shows that environmentally proactive firms, compared to reactive firms, can significantly save in production costs by preventing pollution (Christmann, 2000; Delmas et al., 2011). Yet, the degree to which environmentally proactive firms are able to leverage the competitive advantage of cost reduction depends upon the presence of complementary assets such as absorptive capacity, innovation capability, and commitment to pollution prevention (Christmann, 2000; Delmas et al., 2011).

Differentiation advantages typically arise from customer perceptions that the green product is more valuable than the conventional product. Thus, differentiation advantages usually depend on the compatibility between product characteristics and market needs, and on a company's ability to market the environmental features of its products and services (Galdeano-Gómez et al., 2008). Differentiation advantage involves producing a range of well-differentiated products that meet the specific needs of customer segments (Shrivastava, 1995). According to Delmas et al. (2007), differentiation of green products is most likely to appear where its point of uniqueness is valued by customers. Through competitive preemption, product stewardship can create a base from which to build reputation and differentiate products by establishing the firm as an early mover in new green product domains (Hart, 1995).

Other advantages of environmental proactivity include a heightened entry barrier for competitors (López-Gamero et al., 2008), the emergence of valuable organizational capabilities (Sharma and Vredenburg, 1998), and the development of new firm

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