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A Framework to Analyze International Competitiveness: The Case of Construction Firms of China

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Abstract: With the rapid development of the Chinese construction industry, increasing support from the government, and China's internationalization, Chinese construction firms have gained great opportunities in venturing abroad. Though Chinese construction firms played an important role in the international market, Chinese contractors' share of the international market is still smaller in comparison with their competitors. As an important participant in the international market, Chinese construction firms are confronted with the tasks of keeping themselves competitive. The paper stated the development stages of Chinese construction firms, analyzed the current situation and challenges of Chinese construction firms in the international construction market. Drawing on the resource-based view and industry organization approach, this research builds a conceptual model to investigate the relationship among core capability, competitive strategy and market entry mode strategy within Chinese construction firms, and focuses on strategic analysis in affecting Chinese construction firms' international performance. The conceptual model presented herein was a generic framework that allowed industry practitioners and academic researchers to understand, sustain and extend the international competitiveness of Chinese construction firms. To help construction firms maintain and improve their competitiveness, the conceptual model implied that Chinese construction firms' international competitiveness depends upon the identification of appropriate strategy and industry structure as well as developing and creating core capability in order to exploit opportunities and neutralize the threats presented by competition.

Keywords: Core Capability, Competitive Strategy, Market Entry, China, International Competitiveness

1. Introduction

With the rapid development of the Chinese construction industry, increasing support from the government, and China's internationalization, Chinese construction firms (CCFs) have gained great opportunities in venturing abroad, acquiring wide-ranging experience, and enhancing their knowledge and skills. Some CCFs have made significant achievements in the global construction market. The number of CCFs that have emerged in the Engineering News Record (ENR) Top 250 International Contractors list has increased from a mere 4 in 1992 to 76 in 2018 [1].

The rapid emergence of CCFs in international markets has generated much interest in their competitors around the globe as well as in researchers [2-4]. Although CCFs have had great achievements in recent years, their international market share is still relatively small compared to the more established contractors from advanced industrialized countries. Chinese contractors' share of the international market is still smaller in comparison with their competitors. The international revenue generated by the top 54 European construction firms accounted for 43.2% of all total international revenue received in 2018. International competitiveness must be improved significantly if they want to make a bigger foray into international markets. The purpose of this study is to understand the determinants of CCFs. Drawing on the resource-based view and industry organization approach, the study focuses on strategic analysis in affecting CCFs' international performance.

2. Literature Review

The resource-based view focuses on the firm's resources and capabilities to understand business strategy and to provide direction to strategy formulation. Resources include financial resources, tangible resources and intangible resources [5]. Through the internationalization process, firms gradually expand their business activities beyond their national authority and launch operations in other countries [6]. Resources and core capabilities are important for the internationalization of any firm. The presence of resources and capabilities could provide a firm the discretion or motivation (strategic choices) to pursue a strategy of internationalization thereby increasing its size and profitability. Moreover, a firm can develop new capabilities as they expand internationally. These new capabilities help the firm compete in the international market [7].

Industrial organization approach examines the impact of environment on firm's competitive behavior and performance at the industry level. Porter [8] adapted this paradigm to strategic management and examined existing firm's strategic decision to enter a new business. In the international context, CCFs have made significant progress in building up their competitiveness in recent years and become competitors to other overseas contractors in international construction markets Chinese contractors adopted competitive strategies especially in changing environment in order to achieve sustainable growth and profitability [9]. Zhao et al. [4] analyzed the prevailing process of internationalization of top Chinese contractors and provided a strategic direction for their international construction market selection. Parsa et al. [10] stated that Chinese construction firms continued to improve their international competitiveness by adopt competitive strategies in the international construction markets.

Through the internationalization process, firms gradually expand their business activities beyond their national authority and launch operations in other countries [6]. To expand its activities to the international market, a firm must adapt an appropriate form of entry that determines the firm's performance and survival in foreign markets [11]. The selection of an appropriate entry mode is crucial and affects the overall success of an investment. For different market entry modes, the resource commitment should be different, and the firms will possess different control power, but they have to face different level of risks. Generally, the greater the resource commitment, the higher the risk, but also the more control the firm has over its international operation.

3. Stages of CCFs at the International Market

Before 1980s, only a few CCFs were involved in international projects under the Chinese government's foreign aid to the third world countries. However, after China adopted the open-door economic policy in 1979, CCFs' international business has witnessed a progressive development. In retrospect, such a development can be classified in four distinct stages, briefly as follows:

3.1. Preliminary Stage (1979-1982)

Four large CCFs were the first to be approved by the Chinese government to undertake international construction in 1979. They started their work in the Middle East. By the end of 1982, the government had approved 29 firms for international construction. By then, 755 contracts had been secured, with a total value of US$1.25 billion. Projects completed were worth US$560 million, covering markets in 45 countries and regions. Major markets were West Asia and North Africa, with major projects in building and road construction. Most of the projects were sub-contracts and small in scale.

3.2. Stable Development Stage (1983-1989)

This stage coincided with the recession of the world economy, during which construction demands in the Middle East and North Africa suddenly declined. CCFs had to expand into other regional markets. By 1989, 88 CCFs had obtained international business licenses. During this period, the total transacted value of international construction and labor services was US$7.22 billion. Business has been expanded to more than 130 countries, with Asia as the biggest market, accounting for 60 percent of the business. Besides buildings, road and bridge projects, a number of power stations and industrial plants were built.

3.3. Fast Development Stage (1990- 2003)

In 1990, CCFs had to give up the Middle East market after the Gulf War. With government support, CCFs were involved in many construction projects in Russia, Eastern Europe, Asia, Africa and Latin America. During this period, SOEs have been progressively restructured and become more adaptable to the international market. From 1997, many large SOEs were severed from respective government ministries, and put under the supervision of a new committee. As a result, CCFs grew at an annual rate of 20 percent internationally. More than 2000 contractors had been licensed for international business. CCFs have since played an increasingly significant role in international construction. Currently they are re-entering the Middle East market and expanding their business in AICs as well.

3.4. New Development Stage (2004-to the Present)

The Chinese government has achieved initial success in executing its industrial policy to motivate local Chinese firms to invest abroad and participate in international capital markets. The private Chinese enterprises weren't officially allowed to invest abroad until 2003. While participation in FDI by private firms is growing, much of the outward investment from China is still driven by large SOEs. Since 2003, with a lot of successful infrastructure projects, China's technology, equipment, standards gradually obtained

international high-end market recognition. Chinese construction enterprises began to participate in the global high-end market competition, and China's transportation infrastructure standards began to go abroad.

4. Development and Challenges of CCFs at the Global Construction Market

ENR defined the international construction market as the specified volume open to foreign construction firms in the global market. The Global construction 2020 report forecasts that construction in emerging markets would double in size over the next decade, growing by an estimated 110% to become a market worth $7 trillion, representing a massive 17.2% of global GDP in 2020 [10].

4.1. The Market Share of CCFs at the Global Construction Market

In 2018, the total revenue of Top 76 Chinese contractors reached US$118.97 billion, accounting for 24.4% of the revenue of Top 250 contractors [1]. The Asia market contributed to US$51.99 billion and accounted for 43.7% of their international revenues for the Top 76 Chinese contractors. The revenue for Top 76 Chinese contractors at Africa reached US$37.57 billion, accounting for 30.7% of their international revenues. The revenue for Top 76 Chinese contractors at Middle East and Latin America reached US$17.14 billion and US$7.23 billion respectively, accounting for 14.4% and 6.1% of their international revenues. Table 1 shows the international market share by regions of the 76 CCFs in ENR Top 250 in 2018.

Table 1. *International Market Share by Regions of the 76 CCFs in ENR Top 250 in 2018.*

Regions	International revenue (US billion)	Market share at the region (%)
Asia Pacific	51.99	40.8
Africa	36.57	60.9
Middle East	17.14	21.2
Europe	4.24	3.90
North America	1.80	2.26
Latin America	7.23	24.3

Chinese contractors' share of the international market is still smaller in comparison with their competitors. The international revenue generated by the Top 45 European construction firms reached US$ 234.21billion, accounting for 48.1% of all total international revenue received in 2018. The main markets of operation for European contractors can be observed as the United States, Europe and Latin America. In comparison, the top 76 Chinese contractors achieved 24.4% of total international revenue. This comparison indicates that Chinese contractors should enhance their international competitiveness to achieve wider markets, when compared to their Western counterparts.

4.2. Types of Works Undertaken by CCFs

The types of international construction projects undertaken by CCFs can be categorized as follows: general building, transportation, power, petrochemical, manufacturing, sewage treatment, water supply, telecommunication projects, etc.

In 2018, the top three types of works involving CCFs are general building, transportation and petrochemical projects. There is a trend from 2013 to 2018 towards more diversification in CCFs' construction business. General building works remain the biggest share. More projects involving high technology and financial requirements have been undertaken, including large industrial manufacturing, power, water supply and telecommunication works.

4.3. Main Challenges of CCFs at the International Construction Market

The potential threats to CCFs can be attributed to four aspects. First, China's the open development strategy will lead to a more intense competition between CCFs and their rivals from AICs in the Chinese construction market. A number of top international contractors and design firms from AICs are now involved in the design and construction of sophisticated mega projects in China. CCFs would have no alternatives but to become their partners or subcontractors. Furthermore, Sino-foreign JVs between foreign contractors and privately-owned CCFs will pose greater threats to state-owned CCFs, as these JVs combine foreign partners' financing and technology advantage with flexible management of non-state-owned Chinese partners.

Second, market entry barriers of some AICs still persist despite being lowered after China's open development strategy. Such entry barriers deter CCFs from the geographical expansion into these markets. Third, even in NICs and LDCs, the trend of international construction is towards greater emphasis on financing, technology and sophisticated project management. International contractors from AICs are naturally favored over CCFs as the former possess such advantages.

Fourth, while painstakingly competing with their international rivals, CCFs are also competing among themselves in foreign markets with increasing internationalization. CCFs have yet to establish a cluster approach to compete internationally. The coordination from Chinese government agencies is found to be lacking. The outcome is that CCFs' international rivals will benefit from their internal competition.

5. A theoretical Model to Analyze International Competitiveness CFFs

The concept of international competitiveness has received much academic attention and has become well established in the literature [2-4], [9-10]. Regardless of which theoretical perspective is represented, there is a general agreement that the purpose of strategic competitive activity in the firm is to

achieve a sustainable competitive advantage, and thereby enhance a business' performance.

5.1. Core Capability and International Competitiveness

With the globalization of the world economy, construction markets in most countries are gradually opening to foreign contractors. International contractors from different countries tend to adopt different strategies to compete internationally. To achieve success in the international construction market, CCFs need to upgrade their organizational capabilities through operations in new countries and markets. Cheah et al. [12] identified seven strategic fields and two internal mechanisms of organization for large global engineering and construction firms. These issues exist at the corporate level and are embedded in the very lifeblood of the organization, and hence reflect the corresponding firm-specific resources and capabilities. Chen & Orr [2] analyzed the mechanisms of Chinese contractors' entry into Africa and stated Chinese contractors' performance in Africa in terms of business revenue actually hinges upon availability of financing sources and availability of natural resources. Gaur et al. [7] identified three critical resource/capability variables, namely international experience, marketing and technological capabilities to study the competitive advantage of Chinese firms in the international market. Thus, it expects CCFs with a wide variety of capabilities to have a broader range of possible actions and enhance CCFs' international performance.

5.2. Competitive Strategy and International Competitiveness

The business environment within international construction market is very volatile. Competition from new entrants, social reforms, technological advancement and globalization pose major challenges of growth of this industry. Carpano et al. [13] studied generic competitive strategies in the international context from two major dimensions: segment differentiation and geographical scope. They also highlighted the importance of cost leadership and differentiation strategies. Pheng et al. [14] suggested that the relatively low cost of construction machinery, material and equipment from China facilitates the reduction of the bidding price for CCFs. Kaila [9] focused on the competitive strategies adopted by Chinese contractors in Kenya and stated that the most practiced competitive strategies by Chinese adopted were cost leadership and differentiation strategy. Prasa et al. [10] found that the international competitiveness of CCFs continued to improve due to relatively low costs and resulting competitive bidding prices. Thus, it expects CCFs to have a broader range of possible actions and rely heavily on developing competitive strategy in order to be sustainable in the international construction market.

5.3. Market Entry Mode and International Competitiveness

It is an ambitious task to link market entry strategies with their influence on subsequent performance. Gunhan [15] stated that some entry modes provided better performance than other modes. Market entry strategy could have important implications for firm's performance. Specifically, it was found that the comparative performance of the three entry modes – wholly-owned subsidiary, JV and M&A was contingent on the industry of entry and the associated demands for local content.

Chen & Hu [16] revealed that wholly-owned subsidiaries are more likely to be chosen than EJVs when MNEs expand into markets with high regional and industrial growth; and they are also more likely to be chosen than CJVs when the investments involve proprietary products or where the cultural distance is large between the home and host country markets. CCFs adopting JVs benefit from savings in production costs, risk sharing with local partners, acquiring knowledge of host markets, and securing future growth opportunities. As sophisticated contracting has become one of the significant trends of international construction. The sophistication level of contracting modes directly influences the rivalry intensity among international construction participants [17].

6. Conclusions

The conceptual model presented herein was a generic framework that allowed industry practitioners and academic researchers to understand, sustain and extend the international competitiveness of CCFs. The conceptual model implied that CCFs' international competitiveness depends upon the identification of appropriate strategy and industry structure as well as developing and creating core capability in order to exploit opportunities and neutralize the threats presented by competition. Based on the conceptual model, future research will put forward hypotheses to test patterns of core capability, competitive strategy and market entry mode on international performance of Chinese CCFs.

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