EXAMINING THE POWER OF FIRMS IN THE QATAR CONSTRUCTION INDUSTRY: A STRATEGIC MANAGEMENT STUDY

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ABSTRACT

The value chain of an industry represents, at first, the sequence of flow of inputs and outputs of materials and services among the different players to create the final product or service of the industry. The value chain may also be used to understand the relative power of industry players. Using the value chain concept, and primary and secondary data, we examine the relative power of firms in the construction industry of Qatar. We find that both objective and perceptual measures of relative power are positively and significantly correlated.

Keywords: value chain, power, construction industry, Qatar

INTRODUCTION

The construction industry is a fundamental sector of any economy. It makes a sizeable contribution to a country’s GDP (Crosthwaite, 2000). London and Kenley (2001) discuss the benefits of using concepts from Industrial Organization economics, including Porter’s (1980) value chain, to understand the structure of the construction industry, and firm conduct and performance. Squicciarini and Asikainen (2011) build on Pearce (2003) to suggest a wider definition of the construction industry that captures the breadth and depth of its contribution to the economy. They, too, use the concept of ‘value chain’ to look at construction as a system made of subsystems involving a wide range of actors and specialties and emphasize the importance of looking at the construction sector in its entirety while highlighting its main components. However, both London & Kenley (2001) and Squicciarini and Asikainen (2011) acknowledge the difficulty in carrying out such industry-wide studies due to the difficulty in collecting data.

In this paper, we present the results of a study of the construction industry of Qatar using Porter’s value chain concept using both primary and secondary data. The value chain is viewed as representing not just the sequence of activities carried out in the construction industry, but also as an indicator of the appropriation of value by different companies in the value chain based on their relative power. We examine the relative power of different parts of the value chain, using both objective and perceptual measures of power.
LITERATURE REVIEW

The field of strategic management emerged in the 1960s and focuses on how firms can develop competitive advantage in the market place (Rumelt et al., 1994). A core strategic management concept is Porter’s (1980) value chain. The term value chain refers to the notion that a firm is a chain of activities for transforming inputs into outputs valued by customers. One or more activities of the firm may be strategic because it/they can enable the firm to manage its costs and/or to differentiate it from its competitors. By trying to adopt a low-cost leadership and/or differentiation strategy, firms are able to achieve competitive advantage and earn above-normal profits (Jones & Hill, 2012). As Stabell & Fjeldstad (1998) point out, which activities are of value to a firm depends on the industry within which the firm operates. Beyond the firm, a value chain exists at the level of an industry. A few firms may carry out all activities of the industry value chain and are classified as fully vertically integrated. Some of the best known examples of vertical integration have been in the oil industry (The Economist, 2009) with oil majors extending from upstream activities of exploration to downstream activities of refining and distribution. Most firms choose to undertake some of the activities of the value chain by doing them in-house. Williamson’s (1985) discussion of transaction costs focuses on the decision by firms whether to carry out an activity in-house or to outsource it – referred to as ‘make’ vs. ‘buy’ decision. All the firms in an industry, involved in one or more parts of the value chain of the industry, together complete the value chain of the industry.

At the firm level, the value chain concept helps explain firm competitiveness, another strategic management concept (Porter, 1985). Flanagan et al. (2007) review ways of assessing competitiveness in the construction industry at different levels: country, industry, firm, and project levels. At the level of the firm, the value chain is a useful tool to examine sources of competitive advantage. At the industry-level, on the other hand, the value chain becomes a useful tool to understand not just value creation by different firms in the industry, but also industry structure and power. Cox (1999) argues that businesses strive to create profits. They do so not just by creating value, but by appropriating value. Value appropriation is possible when a firm has greater power relative to other firms in the industry value chain. Porter’s five forces model (1980) provides a tool for examining the relative power of firms in an industry value chain. The number of buyers versus sellers, the volume and value of purchase, the extent of switching costs, and the threat of backward/forward integration are factors that determine the relative power of firms that buy from, or sell to, one another.

In order to examine the relative power of firms in an industry, we have to first map the industry value chain. This allows for diagramming the sequence of activities in the industry, identification of the players involved in each activity, the volume and value of purchases along the value chain, assessment of the switching costs, and if, and where, forward or backward integration is feasible. Many researchers have mapped the industry value chain to have a holistic understanding, some on an international level, some at a regional level, and still others at a national level. Humphrey & Memedovic (2003) map the global automotive industry value chain in a bid to understand its structure and characteristics. Peppard & Rylander (2006) studied the European mobile operators industry and Maitland et al. (2002) the European telecommunications industry to suggest ways that firms can adapt to the changing industry environment. At the country-level, Watson (1999)
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studied the UK direct-market publishing industry; Cheah & Chew (2005) looked at the Chinese construction industry to understand the industry dynamics. Of these industry value chain studies, only Watson (1999) has examined the concept of relative power among the players in the industry. In any industry, there are developers, suppliers, general contractors, sub-contractors, and other companies (Flanagan et al, 2007). At the very least, there are three types of firms in the construction industry – clients, designers or consultants, and contractors (Al-Muslieh, 2011). Erasti et al. (2011) provide more details of the main firms in the construction industry – the Clients, the Main contractor, the Design team, the Sub-contractors, and the Materials suppliers.

THE CONSTRUCTION INDUSTRY IN QATAR

The construction sector constituted about 10 percent of the 2011 real GDP of Qatar, which was QAR 324 billion, where QAR 3.65=USD 1 (Qatar Statistical Authority, 2012). The construction sector is expected to grow rapidly reaching a peak of USD 210 billion by 2020 (Comcap, 2012). Under the Qatar National Vision 2030, the country plans to diversify away from hydrocarbons with planned spending of USD 800 billion. In 2011, the construction budget was USD 225 billion (National Development Strategy, 2011). In the context of the importance of the construction industry for the country, a study to map the industry structure is relevant for both practitioners and academics.

We focus on the construction of mega projects (worth about USD 500 million for EPC (Engineering, Procurement, and Construction) contractors, and about USD 50 million for Building contractors) in Qatar. Examples of mega projects are Qatar Aluminum Plant, RasLafan projects, Barwa city, Lusail City, The Pearl, and the Messaid Power Plant. Usually the project idea and the feasibility study of the project are undertaken by the owners or real estate developers. The owners / real estate developers work with Designers to draw out the basic outline of the project. Once this phase is completed and the decision is made to go ahead, since the majority of the owners and developers do not have enough know-how and expertise related to construction, they hire a consultant or a client’s representative who has extensive expertise about managing such huge projects. These consultants or project managers are usually global EPC companies. EPC companies usually develop the execution drawings, devise the overall project execution plan, and work closely with the Designers who have worked with the real estate developers/owners. EPC companies use Building contractors for the works, and procure inputs from Material suppliers. EPC companies give approval for the work methods, monitor the progress, ensure the in-time delivery of the projects, ensure the meeting of the project specifications, and the proper implementation of the safety standards by contractors. EPC companies tend to be global, and come from a wide range of countries such as France, Germany, Japan, South Korea, UK, and the US.

Building contractors work with Specialized contractors and Material suppliers to complete the works. Building contractors have skilled labor, machinery, and management, and are able to execute the works according to the project specifications. Building Contractors are diverse in terms of their origin: some of them are local, some of them are from GCC countries, while others are from countries such as India, Pakistan, and Turkey. Sometimes, during project peak times when there is demand for extra manpower, they use the services of Labor contract suppliers on a short-term basis.

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RESEARCH METHOD

Data collection

Two types of data were collected in this research. Secondary data were collected from online sources about the firms involved in the value chain of the construction industry in Qatar. Primary data was collected through a survey distributed to industry experts from different companies involved in various parts of the industry value chain.

A list of companies in the construction industry was built from Qatar’s largest online Yellow pages directory, Qatcom (www.qatcom.qa). The website has over 24,000 detailed listings of companies and covers about 96% of businesses that operate in Qatar. Since each company may be listed under different categories of business, each category needed to be scrutinized to identify firms that were involved in the construction industry. For instance, categories related to Building Contractors could be under other categories such as Civil & marine contractors, Civil Engineers, Construction-Civil, Contractors Civil, and Engineers Contracting. A comprehensive list of each type of firm in the value chain was developed. To our knowledge, this is the first time that such lists have been compiled for the Qatar construction sector.

Next, the companies on the list were classified based on the classification of the Central Tender Committee of Qatar (www.ctc.gov.qa). The Classification Contractors Committee issues classification certificates for contracting companies for various categories after reviewing the contractor’s documents about technical and administrative staff, equipment, capital and prior experience. Building Contractors are categorized as A, B, C, D, E, and F, where A is the best classification and F is the lowest. There are 687 Building Contractors in Qatar. Of these 531 are not classified. We include the 156 firms that are classified from A to F in our study.

We used the same method as described above for Building Contractors, to identify the other firms in the supply chain. Design firms which were in the online Yellow Pages Directory categories ranging from Architects, to Civil engineering consultants to Engineers – Design were 231 in number. There were 802 Material Suppliers including Batching Plants (consisting of Concrete Ready Mix, Ready-Mix Concrete and Curb stones among others), Aluminum Windows, Ceramic suppliers, and Paint suppliers. Specialist Subcontractors were involved in activities such as Concrete shot-creting, Geotechnical services, and Firefighting Contractors, and numbered 526.

The majority of the real estate property developers are national companies. There are three major players that are semi-governmental organizations, and two big private property developers. Other property developers are smaller and not involved in mega projects. Therefore, the total number of property developers for the purpose of our study is five (5).

It is not possible to limit the number of the EPC contractors in Qatar, as the barriers to entry are not high, and contracts are sometimes dependent on the foreign policy of the country. EPC companies compete globally. We counted the number of Global EPC contractors who were involved in Qatar during the period of the study; there were about 35 such companies.
We also gathered data on the perceptions of the power of firms in different parts of the Qatar construction value chain from a survey of industry experts, on a 5-point anchored scale. A convenience sample of 54 experts completed the survey. These experts worked in firms in different parts of the value chain of the construction industry.

**Data Analysis**

Using Porter’s (1980, 1985) arguments for measuring the power of firms along the value chain, we calculated the ratio of number of firms in contiguous parts of the value chain, taking into account whether the relationships were one-way or two-way. For instance, there are 156 Building contractors who order inputs from 802 Material suppliers. We measured the power of Building contractors relative to Material suppliers as the ratio of the number of each type of firm. When there is a two-way relationship between firms in the value chain, then we calculated the average relative power.

Of the 54 industry experts who completed the survey, 51 were relatively senior in their organizational hierarchy. All of them worked in the construction industry. The industry experts were asked to evaluate each part of the construction industry value chain, in terms of “ability to negotiate contract terms in their favor” and “ability to negotiate prices in their favor”. Except for Materials suppliers, for all other parts of the value chain, both perceptual measures of power (to negotiate contract terms and to negotiate contract prices) are positively and significantly correlated.

**FINDINGS**

From the unique list of firms in each part of the industry value chain as well as the relationship between the segments of the value chain with each other, we calculated objective measures of power along the value chain. The value chain consists of six main players - Real estate developers/owners, Global EPC companies, Designers, Building contractors, Material Suppliers, and Specialized contractors. During peak times, Building contractors use Labor contract suppliers for a short-term basis. In this value chain, there is mainly a linear relationship among firms, each part of the value chain providing inputs to the next part of the chain. The only exception is the relationship between Designers and Global EPC contractors who are mutually dependent on each other and work together to meet the demands of the Real estate developers/owners. From the columns under “Objective power” in Table 1, it may be seen that Real estate developers/owners have the most power over Designers. This is followed by the relative power of Global EPC contractors over Material suppliers. The third highest relative power is of Real estate developers/owners over Global EPC contractors. Building contractors have some power over Material suppliers, but less than the relative power that Global EPC contractors have over Material suppliers. Due to the mutual dependence of Global EPC contractors and Designers, their power over each other is quite low. If we look at the value chain overall, Global EPC contractors with quite high relative power over Material suppliers, and some power relative to Designers and Building contractors, are an important link in the value chain. Real estate developers/owners have the most relative power, while Material suppliers appear to have the lowest power since Global EPC contractors have substantial power over them, and
Building contractors, too, have some power (more than that over Specialized contractors) over them.

The perceptual measures of power also provide similar results. Industry experts perceived real estate developers to have the most power in terms of negotiating both contract terms and contract prices. The correlation between the two perceptual evaluations of power is 0.90. The Spearman rank correlation between the perceptual evaluation of power regarding contract terms and the objective measure of power is 1.00, while the Spearman rank correlation between the perceptual evaluation of power regarding contract prices and the objective measure of power is 0.88. Table 1 presents these results.

**Table 1: Spearman’s Rank correlations between perceived and objective power different parts of the value chain of the construction industry in Qatar**

<table>
<thead>
<tr>
<th>Value chain</th>
<th>Perceived Power to negotiate contract terms</th>
<th>Perceived Power to negotiate prices</th>
<th>Objective power</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>s.d.</td>
</tr>
<tr>
<td>Real estate developer / owner</td>
<td>52</td>
<td>4.25</td>
<td>.93</td>
</tr>
<tr>
<td>Global EPC contractor</td>
<td>53</td>
<td>4.22</td>
<td>.73</td>
</tr>
<tr>
<td>Designers</td>
<td>54</td>
<td>3.15</td>
<td>.79</td>
</tr>
<tr>
<td>Building Contractors</td>
<td>48</td>
<td>3.50</td>
<td>.82</td>
</tr>
<tr>
<td>Materials Suppliers</td>
<td>52</td>
<td>2.92</td>
<td>.97</td>
</tr>
</tbody>
</table>

Correlation between perceptual measures of power **0.90**

Spearman Correlation with objective measure of power **0.88**

In the following section of the paper, we discuss our findings, the limitations of this paper and the implications of our work for future research.

**DISCUSSION, LIMITATIONS, AND IMPLICATIONS FOR FUTURE RESEARCH**

We have attempted to respond to London and Kenley’s (2001) call for studying the construction industry as a whole. It is the first such study of the industry in the Middle East. For the first time, a comprehensive list of firms in different parts of the value chain of the Qatar construction industry has been developed and mapped. An objective measure of power was calculated using the number of firms in each part of the value chain and the relationship between the value chain
segments. Primary data were collected from industry experts to obtain two perceptual measures of power of value chain segments, in terms of the negotiations about contract terms and about contract prices. We found the two perceptual measures of relative power to be positively and significantly correlated. The correlation with the objective measure of power was also highly positive.

Our main findings are that of all the value chain segments in the construction industry, Real estate developers/owners and Global EPC companies wield the most power. Material suppliers have the least relative power. These findings are neither intuitive nor obvious. Data needs to be first collected about a whole industry before such conclusions can be reached. A priori, it is not feasible to say which of the segments of the value chain has the most relative power. The particular details of each industry determine this aspect.

The value chain is not just about value creation, but also about value appropriation. Segments of the value chain with greater relative power are likely to appropriate more of the profits. In the Qatar construction industry, real-estate developers / owners are local companies – either government-linked or private, can appropriate significant value created by this industry. Given the USD 225 billion outlay planned for construction from 2011-2016, the value creation by this industry is likely to be high. A significant part of this value will accrue to the power local real estate developers/owners. At the same time, it must be noted that the second most powerful segment of this value chain comprises Global EPC companies. Therefore, some value appropriation is likely to go beyond the local economy. A more nuanced study value appropriation will help shed light on this issue.

Our paper has a number of limitations. One, it uses simple measures of relative power – the number of firms in each segment of the value chain is used to calculate an objective measure of relative power, and a convenience sample of 54 industry experts provided two perceptual measures of power (contract terms and contract prices) on a 5-point anchored scale. Ideally, objective measures of power should look at not just the number of firms in contiguous parts of the value chain, but the volume and value of purchases, the extent of switching costs, and the threat of backward/forward integration. Such multiple objective measures may not be available in an industry-wide study, but could be obtained in studies that focus on some parts of the industry value chain. Multiple items for perceptual measures would be useful to assess reliability. A second limitation of our study is the use of convenience sampling instead of random sampling. We chose to use only respondents who knew the industry well, and were quite senior in the organization hierarchy. This limited the number of people we could approach to complete our survey.

The findings in this paper should be useful for both academics and practitioners. Academics can build on our paper to delve further into the construction industry value chain, as well as augment the measures of relative power that we have used. Practitioners can have a better idea of the relative power of segments in the value chain, and formulate company strategy to exploit the differences in value appropriation possible along the value chain.
Key References


