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Competitiveness Factors of Thai Construction Industry within the AEC Context: A Qualitative Approach

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ABSTRACT

On December 31st, 2015, Thailand formally joined the ASEAN Economic Community (AEC). Considerable hardware and software infrastructure will need to be developed to survive and/or compete in the AEC context and to be involved in this activity the Thai construction industry must enhance its competitiveness. This paper aimed to determine the factors affecting the competitiveness of Thai construction industry within the AEC. The qualitative approach was employed as the vehicle to fulfill the research objective. In-depth interviews were conducted with 32 key informants selected through a purposive sampling method. The finding revealed that there were 21 factors affecting the competitiveness of the Thai construction industry which eventually were synthesized into 7 abstract categories: National Condition, Factor Condition, Demand Condition, Context for Firm Strategy and Rivalry, Firm Operation and Strategy, Government, and Industry Support Institutions. The top five factors were found to be: 1) companies resources and methods of operation, 2) companies strategic processes and marketing, 3) the characteristics of the workforce, 4) the policy of government towards Thai companies seeking to work internationally and 5) the political and legal settings within Thailand.

1. Introduction

It is widely accepted that the Construction Industry is one of the few industries that is of central importance to all countries aspiring to develop both economically and socially (Giang & Pheng, 2011; World Bank, 1984). However, many studies have revealed that the construction industry as a whole is under-achieving with low profitability, a lack of research and development, etc. (Fox &

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Skitmore, 2002; The Construction Task Force, 1998). Moreover, on December 31st, 2015, the Association of Southeast Asian Nations (ASEAN) member countries formally created a single market, namely ASEAN Economic Community (AEC); it contributed to the region's conversion into a complex and multi-faceted dynamic market with free movement of goods, services, investment, skilled labor, and freer flow of capital (Department of Trade Negotiations, 2008), that is likely to impact on the entire construction industry in terms of both opportunities and threats.

Competitiveness is the most frequently term raised in debates about the future of the construction industry and many authors have identified the competitiveness factors, the factors which can have an effect on the performance for overcoming the aforementioned problems and challenges (Flanagan, Jewell, Ericsson, & Henricsson, 2005; Orozco, Serpell, Molenaar, & Forcael, 2014). It is important to note that the construction industry is not homogeneous; it has many sectors and various key stakeholders such as owners, consultants or professional construction services, contractors, suppliers, etc. (Buildings Performance Institute Europe, 2016; Flanagan et al., 2005; Langford & Male, 2001). So, while one competitiveness factor may appear quite important from the perspective of one stakeholder, it may fail to be recognized in the viewpoints of others. Therefore, this research aimed to determine the competitiveness factors, the factors affecting the competitiveness, of Thai Construction Industry within the AEC context from the viewpoint integration of those key stakeholders.

2. Theoretical Concepts

2.1 Construction Industry Stakeholders

Key stakeholders of construction industry could be divided into two categories; the one is *the player* which is the one who compete in the market, and another is *the supporter* who supports the competition to those players (Buildings Performance Institute Europe, 2016). Flanagan et al. (2007) presented the construction industry's players in theirs' framework to analyze competitiveness research in the construction sector; those players are developers, general contractors and subcontractors, suppliers, and other companies. Additionally, professional construction services, such as architectural and engineering services, are stated by many author as the key players of construction industry (Buildings Performance Institute Europe, 2016; Cox & Ireland, 2002).

European Commission (2011) proposed two-major groups of general support and services or supporter of the construction industry. The first is knowledge organizations which include academic and research institution, and second is financing organizations which include banker. United Nations Industrial Development Organization (UNIDO) (2013) mentioned another industry support service, i.e. technical support and business advisory institutions which normally the councils and associations of both professional and business are at play in these roles. Public authorities or government agencies have also a key role to play to develop the legal framework and environment to build and maintain the competitiveness of industry (Buildings Performance Institute Europe,

2016). The authors, finally, developed their own structure of construction industry stakeholders as shown in Figure 1.

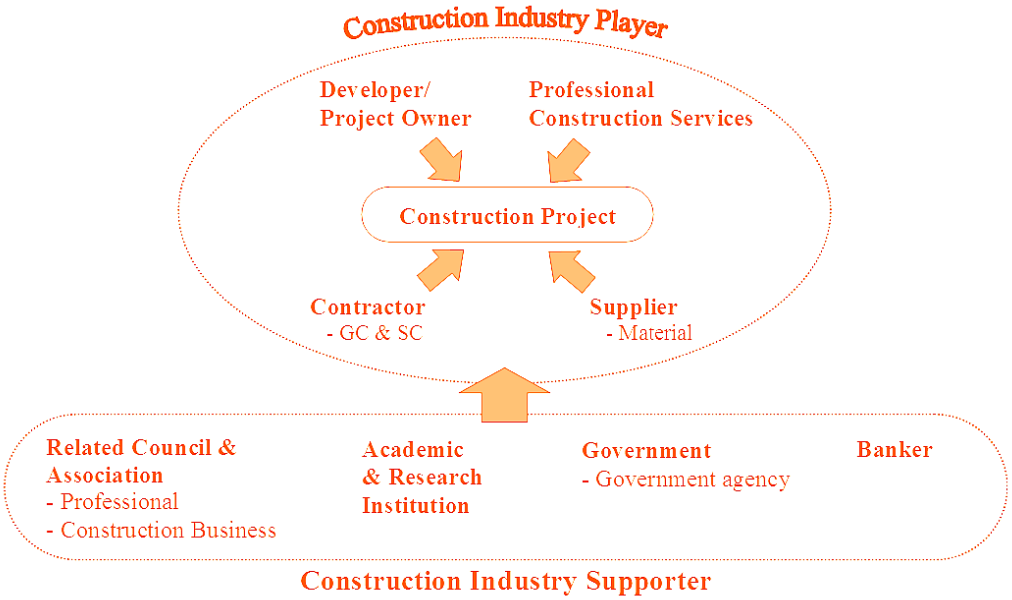

Figure 1: Construction Industry Stakeholders

2.2 Competitiveness Theories and Concepts

Competitiveness is a concept that the economists, policy makers, and business executives often point to, discuss and concern over (European Commission, 2011; Momaya, 1998; Porter, 1990). It comprises different levels of analysis; investigations can be proceeded for the perspective of nation, industry or enterprise (Flanagan et al., 2007). Porter (1990) argued that seeking to clarify competitiveness at the nation level is answer the wrong question. Specific industries or industry segments, instead, should be focused on for the competitiveness investigation. UNIDO (2013) provided the fitting definition of industrial competitiveness, that is, "the capacity of countries to increase their presence in international and domestic markets whilst developing industrial sectors and activities with higher value added and technological content".

Porter et al. (2008) mentioned that competitiveness arises from macroeconomic and microeconomic factors. Macroeconomic competitiveness delineates the environment at the national level in which firms operate and create the potential for high productivity. Although these factors do not directly affect the productivity of firms, they are critical in providing support for firm efforts to raise productivity. These factors include quality of social infrastructure, political institutions and macroeconomic policy. Microeconomic competitiveness comprises business environment, the environment in which firms compete, and operating practices and strategies of firms. All these factors have a direct impact on productivity (Wong, Shankar, & Toh, 2011). Porter (2004) introduced the diamond model to explain the success of business environment; it comprises four categories, i.e., factor condition, demand condition, context for firm strategy and rivalry, and related and supporting industries. Flanagan et al. (2005) employed the Porter's diamond model as a key

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concept to develop the framework that organizes the factors influencing the competitiveness of nation's construction industry, namely the domestic construction competitiveness hexagon. This framework consists of six determinants: factor conditions, demand conditions, human resources, firm strategy and management, industry characteristics, and government.

Finally, Deewong and Luengbootnak (2013) argued that the industrial competitiveness involves the three determinants of factors, i.e. macro environment, business environment, and firm operation and strategy:

1) Macro environment

Macro environment factors are the critical factors in the national level which comprise of: natural endowment, macro-economic policy, political instructions and social infrastructure (Porter et al., 2008).

2) Business environment

Business environment factors are those factors in the level of business or industry which comprises of: factor condition, demand condition, context for firm strategy and rivalry, and related and supporting industries (Porter, 2004). Factor conditions covers the business inputs, such as human resource or infrastructure, necessary to compete in the industry. Demand conditions describes the size and sophistication of the local market demand for the industry's products and services. Context for firm strategy and rivalry includes the rules, incentives and nature of competition within the local market. Related and supporting industries reflects the existence of firms in related and supporting industries as well as other supporting intuitions.

3) Firm operation and strategy

Firm operation and strategy are the factors related to the company asset and capabilities. According to Wethyavivorn, Charoenngam, and Teerajetgul (2009), it consists of: marketing capability, procurement capability, construction capability, financial capability, business management capability, and learning and innovation capability.

3. Methodology

ASEAN Economic Community (AEC) is not the emerging of new phenomena for ASEAN region, but it is the result of day by day evolution, from ASEAN Free Trade Area (AFTA) towards the AEC today. The AEC establishment will increase the opportunities to firms and investors to do the oversea businesses in both intra-ASEAN and beyond easier than the past. However, the person who has intensive knowledge about AEC and/or experience in oversea business is not so many; applying of quantitative approach or questionnaire survey for this research may be not proper. Not only proper for the small size of population, but qualitative approach can deliver the comprehensive meaning and understanding about the research matters which are the limitation of quantitative approach (Patton, 2002). Therefore, qualitative approach is chosen for this study.

3.1 Target Population and Sampling

The unit of analysis in this study is a company or organization and the individuals who participated in the interviews representatives of those companies or organizations. To ensure that all stakeholders were involved in the interview process, the target population was divided into two major categories, one for players and the other for supporters. The construction industry players comprise four categories: developer/project owner, professional construction services, contractor which includes main contractor and subcontractor, and supplier. The construction industry supporters also comprise: related councils and association, academic and research institution, government agency and banker.

"Qualitative inquiry typically focuses in depth on relatively small samples, even single cases, selected purposefully" (Patton, 2002). The samples for this study were also selected through a process of purposive sampling. The sample units were chosen because they had particular features or characteristics which enabled their detailed exploration to lead to an understanding of the central themes of the study (Ritchie & Lewis, 2003). The key criterion for choosing the samples or key informants (KI) was their workplace role; they were people in decision making positions or in other significant positions in the case of the supporter categories.

In the beginning, it was decided to choose 40 key informants as the target size of samples; however, the final sample size was reduced to 32 key informants. The sample consisted of 17 construction industry players (i.e. 3 developers/project owners, 5 professional services, 4 contractors, and 5 suppliers) and 15 construction industry supporters (i.e. 5 related council and association, 5 academic and research institutions, 3 government agencies, and 2 banker). As many scholars have mentioned, the size of the samples should be large enough that information represented by the data that has been collected reaches saturation (Gibbs et al., 2007; Mason, 2010; Patton, 2002; Ritchie & Lewis, 2003). It became clear as the interview process progressed that there was nothing new to learn and so a sample size of 32 was considered satisfactory.

3.2 Instrumentation

In-depth interviews were the primary research instrument for collecting data and the intention was to gather precise data from all the key informants. When preparing for an interview, Kvale (2007) suggests that it may be useful to develop a guide for the interview topics which ensured that the interviews were well linked to the research questions and objectives. The five major interview question topics conducted with the key informants were: what are his/her perceptions towards the AEC, what have been the impacts of the AEC in the past and at the current time, what activities are his/her organization executing or planning for the purpose of surviving and/or competing in the AEC, what are the problems/obstacles and solutions related to conducting business in the AEC, and what his/her suggestions can be made to enhance the competitiveness of the Thai construction industry.

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3.3 Data Collection and Analysis

Firstly, a list of the names of companies or organizations was established and the names of potential interviewees were also specified if that was possible. The number of overall target samples, 40, was spread equally across each of the factors of the target population. There are 8 sub-categories and so there were 5 samples in each sub-category. Reference letters were issued by the Faculty of Engineering at Khon Kaen University and submitted, together with the list of in-depth interview question topics, to all the target samples as requests for permission to conduct interviews with them. The criterion for choosing the key informants was stated clearly in the reference letters. Following this process it transpired that 21 organizations had given the researcher permission to collect data from them. To reach the target sample size the researcher applied the snowball technique by asking interviewees to introduce him to more people who conformed to the key criterion, however despite these efforts the final sample size was 32.

At the beginning of the interview process, the researcher introduced the research topic, explained the purpose of the research clearly, reaffirmed the confidentiality of their responses and sought permission to record the interview (Ritchie & Lewis, 2003). Following this introduction the questions which have already been explained, were asked. The interviews lasted for a period of between 30 and 180 minutes for each interviewee, giving them ample time to answer all questions. The setting for the interview was in a quiet room where all interruptions to the interview process, which may have obstructed the flow of information and the accuracy of recall, could be avoided. During the interviews, the interviewer played a crucial role in obtaining the relevant information needed to address the research objectives and five major interview question topics, by pushing the interviewees to explain their answers or validate their statements. At the end of each interview the researcher thanked the participant and briefly explained how their contribution would help the program of research. It was also during this time the researcher applied the snowball technique to try to get more samples, by asking the interviewee to introduce him to other people who conformed to the key criterion.

The tapes were transcribed and stored in electronic form using word processing software. A thematic analysis using Atlas.ti software was used to analyze and synthesize the data. Firstly, those interview transcripts were read thoroughly and then the concepts or codes were assigned for the words, phrases or sentences, which from now called Quotation, appropriately. The names of codes were developed mostly from the literature; however, the empirical grounded concepts were not neglect. Then those assigned codes were aggregated to on more abstract, factors and categories. Finally, the significant of such factors were ranked base on the number of quotations referring to a factor and the number of KIs who endorsed a factor, subsequently.

4. Results and Discussion

Approximately, 1,367 quotations were mentioned by KIs regarding the factors affecting the competitiveness within the Thai construction industry, both generally and particularly to the AEC

context, were conceptualized into 78 themes. Those themes were then grouped on more abstract levels into 21 factors and 7 categories of factors. Figure 2 shows the model, is composed of 7 factor categories that explain the competitiveness within the Thai construction industry within the AEC context, namely Heptagon of Thai Construction Industry Competitiveness Model.

1) National Environment or Condition

The first category of factors is national environment which related to the factors in national level or macro level. Developments in national economies or environment have a very strong influence on companies' competitiveness (Chikán, 2008). This category comprises 3 main factors, that is: 1) political and legal, 2) socio-cultural, and 3) economic.

2) Factor Condition

Another category of factors is factor condition which related to the resources or input factors of production. It covers aspects such as: availability, cost, quality and sophistication factors (Flanagan et al., 2005). There are 4 major factors in this category, that is: 1) workforce, 2) education and human resource development, 3) financial, and 4) physical infrastructure.

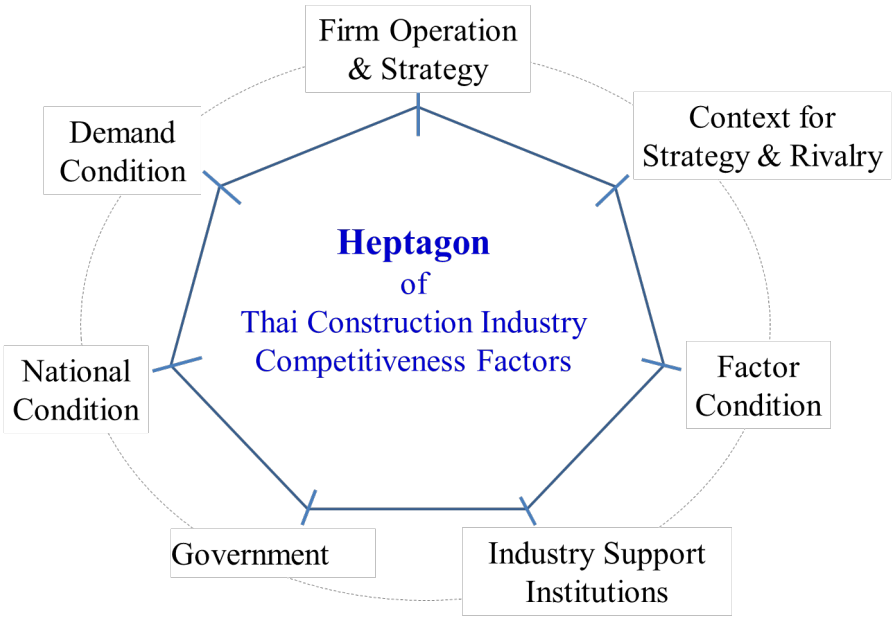

Figure 2: Heptagon of Thai Construction Industry Competitiveness Model

3) Demand Condition

Another category of factors is demand condition which related to the nature of home demand for construction industry. The characteristics of home demand or market size proves far less significant than any other factor such as in sophisticated and advanced customer needs (Porter, 1990). Two main factors under this category are: 1) size of market, and 2) sophistication of demand.

4) Context for Firm Strategy and Rivalry

The context for firm strategy and rivalry, the condition in the nation governing how players in the construction industry are created, organized, and managed, as well as the nature of domestic rivalry (Porter, 1990), is another category of factors affecting to the construction industry. It

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comprises 2 main factors: that is, 1) fairness and sophistication of competition, and 2) openness and intensity of competition.

5) Firm Operation and Strategy

Another category of factors is related to the firm operation and strategy. There is no competitive national economy without competitive firms (Chikán, 2008). Two major factors under this category are: 1) firm strategy and marketing, and 2) firm resource and operation.

Table 1: Summarized categories of factors and factors influencing the competitiveness of Thai construction industry within the AEC

No.	Categories of Factors / Factors	No of Quotations	No of Key Informants	Rank
	1. National Environment			
1	Political and legal	98	22	5*
2	Socio-cultural	57	17	9
3	Economic	19	6	16
	2. Factor Condition			
4	Workforce	174	26	3*
5	Education and human resource development	71	20	7
6	Financial	44	14	11
7	Physical Infrastructure	12	7	17
	3. Demand Condition			
8	Size of market	8	7	19
9	Sophistication of demand	30	8	14
	4. Context for Firm Strategy and Rivalry			
10	Fairness and sophistication of competition	34	11	12
11	Openness and intensity of competition	8	5	20
	5. Firm Operation and Strategy			
12	Firm strategy and marketing	202	27	2*
13	Firm resource and operation	229	27	1*
	6. Government			
14	Role of government	70	23	8
15	Supports for industry support structure	75	20	6
16	Supports for R&D and innovation	25	9	15
17	Role of state-owned financial institution	12	7	17
18	Supports for Thai oversea business	113	23	4*
	7. Industry Support Institutions			
19	Role of professional/business associations	31	12	13
20	Role of academic and research institution	11	7	18
21	Supports for human resource and firm competency development	44	18	10

Note: * = the top five of factors

6) Government

Another category of is related to the role of government and policy support. Government

activity is of key significance to the construction industry, not only in shaping the business environment and setting market regulations, but also as a main client or market intervener for construction (2005). There are 5 major factors in this category, that is: 1) role of government 2) supports for industry support structure, 3) supports for R&D and innovation, 4) role of state-owned financial institution, and 5) supports for Thai oversea business.

7) Industry Support Institutions

The last category of factors is related to the industry support institutions, such as academic and relevant councils and association. Strengthening the capacity of support institutions will able to assist industrial enterprise in their adaptation and upgrading efforts (United Nations Industrial Development Organization (UNIDO), 2003). This category comprises 3 main factors, that is: 1) role of professional/business associations, 2) role of academic and research institution and 3) support for human resource and firm competency development.

According to Table 1, the top five factors that constitute high impact on the competitiveness within the Thai construction industry and within the AEC, respectively, are: 1) Firm Resource and Operation, 2) Firm Strategy and Marketing, 3) Workforce, 4) Supports for Thai Oversea Business, and 5) Political and Legal.

It is not surprising that the first two factor, *Firm Resource and Operation* and *Firm Strategy and Marketing*, are the most frequently mentioned by most KIs. This is supported by the argument of Flanagan et al. (2007), that it is not the industries, but the companies constituting the industry that compete in the international market. Even no AEC formation, operation capability, such as project control and contract management, is a common key to success for the companies to perform business in the construction as a project-based industry. Company assets; likewise-knowledge, technology and innovation, financial capability, and human resources, are crucial components for any company to survive and/or compete within Thailand's construction industry in the AEC era. *Firm Strategy and Marketing* involve the different level of strategy: corporate level, business level and functional level, as well as market capability. Corporate-level strategy, that is, corporative strategy is the most frequently mentioned by many KIs as a vehicle for sharing risks and seeking a market within the AEC environment. One KIs mentioned that "…for any contractor, it is of high risk to go outside the country and do business. So, the majority of contractors choose to remain inactive in such ventures. Thusly, their preparation is focused in enhancing the firm's capabilities and functions to seek for a good partnership and/or subcontractor to help share the risk…". Another KI member, reported that their firm will attend to establish a partnership with local companies in some countries and invest jointly with their new foreign partner in the market.

The last three factors: *Workforce Characteristics*, *Supports for Thai Oversea Business*, and *Political and Legal*, are environmental based and considered uncontrollable for the companies. *Workforce characteristics* involve the abilities or characteristics required for the workforce, at all levels, within Thailand's construction industry. For example, international language, cross-cultural

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awareness and a clear understanding of AEC as well as globalization. *Supports for Thai oversea business* is related primarily to government policies and assistances to related institutions that supports Thai construction business in international markets. *Political and Legal* involve Thailand's public policies such as public trust, corruption, transparency legal regulations and political issues.

5. Conclusion

The factors influencing the competitiveness of the Thai construction industry could be synthesized into 21 factors which could be further grouped into 7 abstract categories. The Heptagon of Thai Construction Industry Competitiveness Model, it involves 7 categories of factors, was proposed to explain the competitiveness of Thai construction industry within the AEC context. Those were national condition, factor condition, demand condition, context for strategy and rivalry, firm operation and strategy, government, and industry support institutions. Within this scheme the top five factors in terms of the number of reference quotations that were made were: 1) companies resources and methods of operation, 2) companies strategic processes and marketing, 3) the characteristics of the workforce, 4) the policy of government towards Thai companies seeking to work internationally and 5) the political and legal settings within Thailand.

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