

中国建筑企业 国际业务竞争力研究

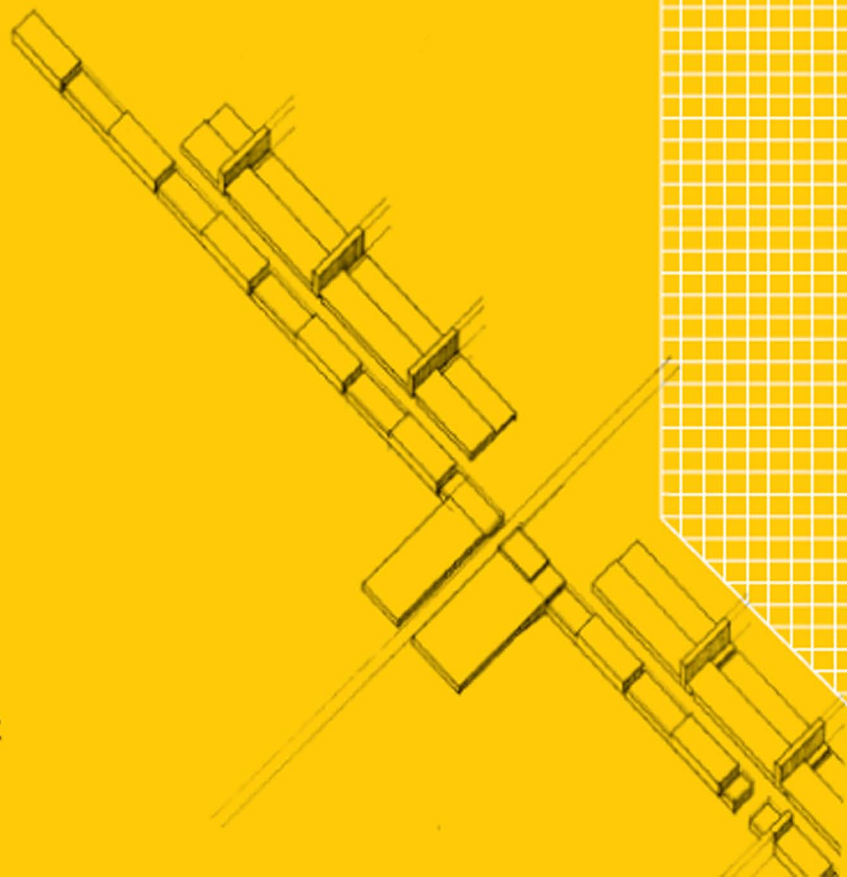
RESEARCH ON THE INTERNATIONAL
BUSINESS COMPETITIVENESS OF CHINESE
CONSTRUCTION ENTERPRISES

李璞颖 著

LI PUYING

湖南大学出版社

Hunan University Press

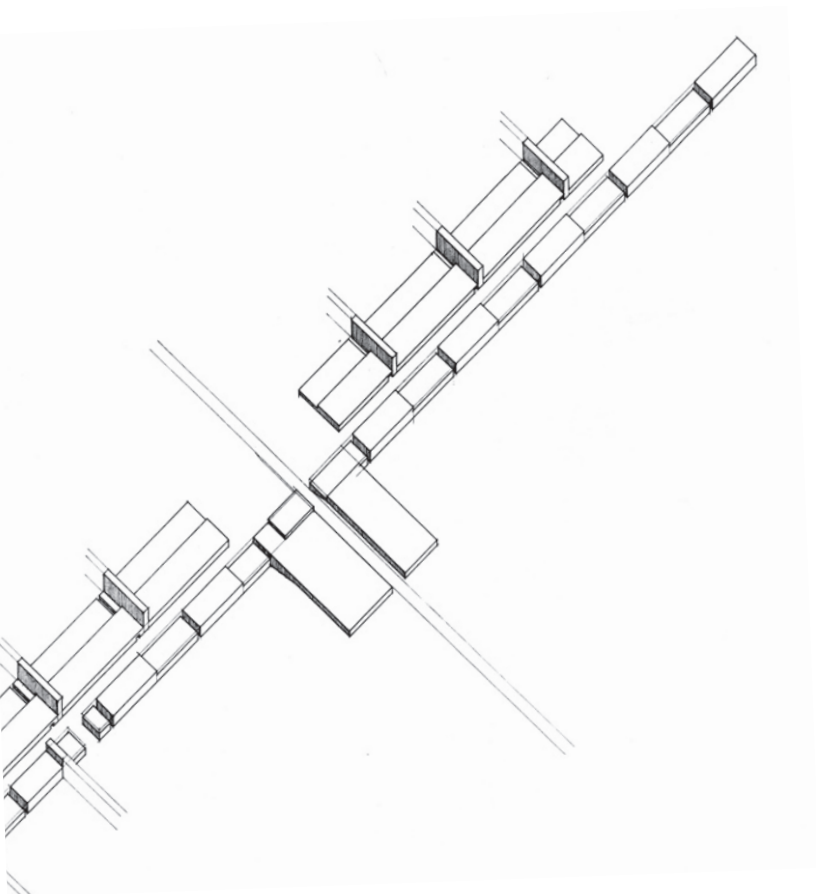


中国建筑企业 国际业务竞争力研究

RESEARCH ON THE INTERNATIONAL
BUSINESS COMPETITIVENESS OF CHINESE
CONSTRUCTION ENTERPRISES

李璞颖 著

LI PUYING



湖南大学出版社

Hunan University Press

内 容 简 介

本书从文献摘要入手,运用修正式德尔非法采访行业专家,提出了影响中国建筑企业竞争力的因素,通过权重分析和归纳法,建立了中国建筑企业的国际竞争力模型,并把模型运用到实例中以验证模型的可操控性和可行性。最后,本书强调了国家政策在支持中国建筑企业的国际业务方面发挥的重要作用,没有中国政府“一带一路”的政策措施,中国企业就无法扩大他们的全球市场占有率。因此,深入了解和应用中国政府政策有助于中国建筑企业充分发挥其竞争优势。本书为读者在研究国际竞争力时理解国家政策和公司之间的联系提供了思路。

图书在版编目(CIP)数据

中国建筑企业国际业务竞争力研究:英文/李璞颖著. —长沙:
湖南大学出版社, 2019. 8

ISBN 978-7-5667-1062-8

I. ①中… II. ①李… III. ①建筑企业—国际市场—市场竞争—研究—中国—英文 IV. ①F426. 9

中国版本图书馆CIP数据核字(2019)第140281号

中国建筑企业国际业务竞争力研究

ZHONGGUO JIANZHU QIYE GUOJI YEWU JINGZHENGLI YANJIU

著 者: 李璞颖

责任编辑: 张佳佳

印 装: 北京虎彩文化传播有限公司

开 本: 787×1092 16开 印张: 13.25 字数: 315千

版 次: 2019年8月第1版 印次: 2019年8月第1次印刷

书 号: ISBN 978-7-5667-1062-8

定 价: 59.00元

出 版 人: 雷 鸣

出版发行: 湖南大学出版社

社 址: 湖南·长沙·岳麓山 邮 编: 410082

电 话: 0731-88822559(发行部), 88820006(编辑室), 88821006(出版部)

传 真: 0731-88649312(发行部), 88822264(总编室)

网 址: <http://www.hnupress.com>

电子邮箱: 371771872@qq.com

版权所有, 盗版必究

湖南大学出版社凡有印装差错, 请与发行部联系

Preface

Many Chinese construction firms have strategically started to develop their overseas construction markets in line with the development of the integration of global economies, following China's accession to the World Trade Organisation in 2001, and the Chinese government's 2013 proposal for the One Belt One Road (B & R) , which was an opportunity for Chinese construction firms to expand their global business. However, in the current dynamic global construction market, factors that affect Chinese construction firms' global expansion may exist. Moreover, present competitiveness theories, such as Porter's Competition theory, the Resources-Based Approach, and the Strategic Management Approach, are limited in the applications with respect to Chinese construction firms, because of the unique characteristics of China's construction industry, which is a socialist market economy and is moving towards integration into the global market. Researches on the indicators contributing to their international operations is of vital importance to Chinese construction firms. Therefore, it is necessary to establish an original framework to assess and improve Chinese construction firms' international competitiveness.

In this book, a competitiveness framework was established through the application of mixed methods relating to a sequential explanatory strategy, with strong quantitative and qualitative considerations. Firstly, the key players in the competitive global construction market were identified through analysis of secondary quantitative data. Secondly, a total of 21 key competitiveness indicators were identified through analysis of secondary qualitative data, after which a draft conceptual competitiveness framework was proposed. Thirdly, Modified Delphi

interviews were conducted, in order to refine and tighten the draft conceptual competitiveness framework, a total of 49 key competitiveness indicators were identified and a competitiveness framework was established. Finally, a case study was conducted through an analysis of both secondary data and structured interview results, which validated that the competitiveness framework was a strategy and a practical tool for assessing and improving Chinese construction firms' international competitiveness. In addition, a mathematical method named weighted summation was employed in this book for calculating competitiveness. Chinese construction firms' international competitiveness could then be calculated. Moreover, this book provided conceptual, methodological, policy, and practical contributions to the system of knowledge of competitiveness theory. This book found that the meaning of competitiveness could not be precisely defined, but the indicators, which contributed to Chinese construction firms' international business competitiveness could be identified. This book provided a useful learning tool to assess and improve construction firms' international business competitiveness.

Having finally completed this book, I would like to offer my appreciation to all the people who have made a contribution to the work. First and foremost, I would like to offer my thanks to my beloved parents Jianzheng Li and Xuelian Lu, who gave me their unconditional love and support during the whole period of my education and have always given me the courage to overcome life's difficulties. I would like to express my gratitude to my Ph. D. supervisors Professor Ali Parsa, Dr. Simon Huston, and Dr. Anil Kashyap who gave me such a good support concerning the direction of my research, thanks for their helping, guiding and inspiring me. Another important person I want to show my gratitude and profound respect to is Dr. Ted Carter, who has given me great help in correcting the grammar of this book and has improved my English skills considerably. I would like to take this opportunity to thank all the participants in my research study; for their generosity in giving of their time to kindly meet with me for interviews. Without their cooperation, I will not be able to finish the interview section successfully. Last but not least, I would like to give my thanks to my friends, Dr. Carol Zhang, Yaqub Murray, Yue Du, Xiao Liang and Qiulu Liang, who kept encouraging me to go through the tough time. This helped me to complete this book successfully.

Dr. Puying Li

Contents

1 Introduction / 1

1.1 Proposal / 1

1.2 Scope of Research / 3

1.3 Research Logic / 4

1.4 Aim and Objectives / 5

1.5 Research Methodology and Data Collection / 6

2 A Critical Review of the Concept of Competitiveness / 8

2.1 Review of the Concept of a Firm's Competitiveness / 8

2.2 Firm's Competitiveness in the Construction Business / 11

2.3 Summary / 14

3 The Global Construction Market, China's Construction Industry and Chinese Construction Firms / 16

3.1 Overview of the Development Trends in the Global Construction Market

/ 16

3.2 China's Construction Industry / 27

3.3 Chinese Construction Firms / 34

3.4 Key Competitiveness Indicators (KCIs) of Construction Firms / 53

3.5 Summary / 57

4 Analysis of the Key Competitiveness Indicators of Chinese Construction Firms through Modified Delphi Interviews / 60

4.1 Analysis of Respondents' Interview Data / 60

4.2 Summary / 77

5 Tightening Competitiveness Conceptual Framework through Qualitative Data Analysis / 78

5.1 Competitiveness Framework Analysis / 78

5.2 Summary / 136

6 Calculating Chinese Construction Firms' Competitiveness / 139

6.1 Weights of the Clusters, Factors and Key Competitiveness Indicators / 139

6.2 Weight Summation of the Clusters, Factors, and Key Competitiveness Indicators / 150

6.3 Summary / 152

7 The International Competitiveness of the China General Nuclear Power Group: Hinkley Point C: A Case Study / 154

7.1 Background of the China General Nuclear Power Corporation / 155

7.2 Background of Hinkley Point C / 156

7.3 Key Competitiveness Indicators of CGN / 159

7.4 The Competitiveness Scores of CGN / 178

7.5 Summary / 182

8 Conclusions and Recommendations / 184

8.1 Conclusion of Main Findings / 184

8.2 Contributions to the Book / 187

8.3 Limitations of the Book / 188

8.4 Recommendations for Future Research / 189

8.5 Epilogue / 190

Bibliography / 191

Appendix I : List of Respondents / 200

Appendix II : The Top International Contractors Who Operate in the UK / 203

Appendix III : The Chinese Contractors Who Rank in Top 100 International Contractors from 2004 to 2014 / 204

1 Introduction

Competitiveness, which economists, politicians and researchers frequently discuss is a disputed topic, and it is widely recognized as the core of the success or failure of firms. However, although there is widespread acceptance of its importance, competitiveness remains a concept that is neither well understood nor easy to communicate (Lu 2006). For example, Porter (1985) proposed that if a company attempted to provide customers with greater value and satisfaction than their competitors, the company must consider cost differences, markets differences, regulation differences, and resource differences. But Prahalad and Hamel (1990) considered that firms should develop unique resources in order to achieve a core competence to sustain growth, and establish a relationship between resources, capability, and core competencies. Nevertheless, D'Cruz and Rugman (1992) suggested that competitiveness could be defined as the ability of a firm to design, produce or market products superior to those offered by competitors with respect to price and non-price qualities. It can be seen that many scholars have different views on firms' competitiveness, and they have provided rich concepts of competitiveness as theoretical tools. However, they did not have clear outcomes of competitiveness as a strategic tool for a firm's actual operation. As a result, they did not directly indicate which drivers facilitated a company to improve its competitiveness in the changing international market, and in the current dynamic global market, nonetheless, several indicators which may affect those firms aiming to expand their global businesses exist. Therefore, it is important to develop a new framework relating to competitiveness indicators in actual operation to facilitate the analysis of competitiveness.

1.1 Proposal

Construction is the process of constructing a building or infrastructure and takes place on location for a known client. The segments of construction market include building, infrastructure, transportation, nuclear power, water supply, and telecom etc. Construction is a major industry throughout the world accounting for a sizeable proportion of most countries' economic output. For instance, the construction industry contributed £103 billion in the UK, amounting to 6.5 per cent of the total economic output in 2014. China's construction industry produced RMB ¥447.896 billion, accounting for 7.03 per cent of the total gross domestic

product in 2014 (CSYB 2015). Globalization provides new possibilities, and new opportunities for some construction companies to invest in international projects, which has become a major preoccupation for global construction companies. However, some indicators could be adjusted in a dynamic global construction market, which could affect global firms' expansion overseas. For example, tendering, project types, regulations and emerging markets could be adapted differently. Therefore, global construction firms are required to improve their competitiveness in order to respond to a changing global market, and to survive and grow in the global market.

In line with the development of the integration of global economies, and China's acceptance into the World Trade Organisation (WTO), the Chinese government has been encouraging and supporting Chinese construction firms to compete for contracts in global markets. Encouragement has been given in order to strengthen bilateral and multilateral trade with other countries, to promote peaceful cooperation and common development around the world. The Belt and Road policy was initiated by Chinese president Xi Jinping in 2013, and was published in 2015. This policy provided more opportunities for Chinese Construction Firms (CCFs) to enter the countries which are located in the B&R areas. In the first quarter of 2016, Chinese companies invested \$ 3.59 billion dollars in the Silk Road Economic Belt, including countries, such as, Singapore, India, and Malaysia. Moreover, Chinese construction firms signed 758 contracts with 60 Silk Road Economic Belt countries, thereby, achieving \$ 25.59 billion dollars new contractual value, and \$ 13.75 billion dollars turnover value. These figures illustrated the potential for Chinese construction firms to expand their overseas business within the remits of the Silk Road Economic Belt.

The Asian Infrastructure Investment Bank (AIIB) was another initiative, which was introduced in 2013. It is a new multilateral financial institution established to bring countries together to address the daunting infrastructure needs across Asia. According to the Articles of Agreement of the AIIB, the bank will "provide or facilitate financing to any member, or any agency, instrumentality or political subdivision thereof, or any entity or enterprise operating in the territory of a member, as well as to international or regional agencies or entities concerned with economic development of the Asia region". By May 2017, the bank had approved a total of 77 countries to become members of the AIIB. This bank enabled CCFs undertake international projects with sufficient funds. These global initiatives of China illustrated the issues concerning competitiveness, and infrastructure finance attracted the attention of the global market.

In line with competitiveness theories, global construction market changes, and Chinese construction firms' global expansion perceptions were altered. Consequently, it has been

considered necessary to fill gaps in competitiveness knowledge, understanding with respect to how Chinese construction firms' competitiveness might be applied to the global market. Hence, the purpose of this book is to investigate the international competitiveness of CCFs:

(1) Examine the competitiveness of CCFs in the global market.

(2) Outline a practicable competitiveness framework for CCFs to compete in the global construction market.

There are initial aspects of operational competitiveness, which are used in this book: corporate strategies, organisational capability, and financial capability, as all, potentially, could affect international contractors' competitiveness when exploring overseas markets. This book has examined the indicators related to these three issues.

1.2 Scope of Research

It is necessary to limit the scope of research because competitiveness is comprised of different levels of analysis. A clear statement relating to the scope of the study facilitates not only the focus on research efforts, but also increasing the understanding of the competitiveness concept. Competitiveness is analysed on four different levels: the national level, the industry level, the firm level, and the project level.

Typical studies of competitiveness at the national level include Porter's Diamond Framework for achieving a nation's competitive advantage (Porter 1990), and the World Competitiveness Yearbook (IMD 2004) published annually to report on the competitiveness of nations. Construction competitiveness at the industrial level, such as "measuring construction competitiveness in selected countries" was published by Flanagan *et al.* (2004), aiming to benchmark the competitiveness of the UK's, Sweden's, and Finland's construction industry against selected countries, and to identify strengths and weakness in domestic construction sectors that influence sustainable competitiveness. In comparison with the analysis of competitiveness at national or industrial levels, researching competitiveness at the firm's level limits its scope to within the boundary of a company, for example: Porter's competitiveness theory (Porter 1980; 1985), the Resource-based and Core Competence school (Draft 1983; Prahalad and Hamel 1990), and the Strategical Management school (Wheelen and Hunger 2002; Buckley *et al.* 1988). A particular research area in construction is to examine competitiveness at the project level, mainly to focus the research on construction companies that win contracts by competitive bidding, and with reference to quality performance issues in the project (Belohlav 1993; Shen *et al.* 2004).

After discussing the different levels of analysis of competitiveness, the scope of this book can be described. This book has been confined by the following set of boundaries:

(1) Level of analysis — at a firm’s level. This study has focused on the competitiveness of a firm but found out the competitiveness relationship between the firm, national policy, and projects. A project is a major source of competitiveness for construction firms’ production (Gao *et al.* 2013). Policy is the macro condition of an organisation’s development, especially, since China carried out a series of policies concerning infrastructure development in order to increase its national economic and national bilateral relationships.

(2) Domain of firms — focusing on China’s large construction firms, which have the capacity to undertake global projects.

(3) Market sector considerations — the general global construction market outside China.

1.3 Research Logic

The logic of the research is shown in Figure 1.1. Three questions must be asked: First, a question: why conduct such a study about CCFs’ competitiveness? Secondly, how to research in to CCFs’ international competitiveness? Thirdly, can competitiveness be calculated, and can a framework be applied to CCFs when this competitiveness is given?

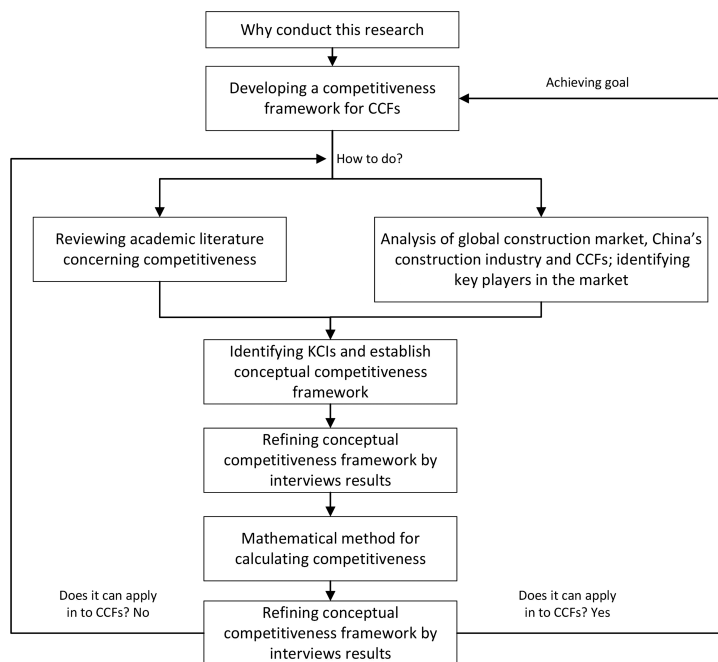


Figure 1.1: Logic of the Research

Source: Author (2014).

The reason for the first question is that establishing a framework for improving CCFs' competitiveness is essential for them to survive and then compete in the global construction market. This book has focused on CCFs to better understand their competitiveness. For the second question, this study has adopted a three-step strategy: the first step was a significant review of the relevant literature concerning competitiveness theories and models, the global construction market, China's construction industry, and the CCFs' development; identifying key players in the global construction market. The second step involved identifying the Key Competitiveness Indicators (KCIs) based on the literature review in order to establish a draft conceptual competitiveness framework. The third step considered conducting interviews in order to refine the draft conceptual competitiveness framework. For the third question, this book considered a mathematical method for calculating competitiveness based on the framework, and to conduct a case study for validating the framework. Ultimately, it was felt that the goal of establishing a competitiveness framework for CCFs could be achieved.

1.4 Aim and Objectives

In line with the research logic, the research aim, objectives, and questions could be addressed. The aim of this book was to investigate key indicators influencing the competitiveness of Chinese construction firms (CCFs) in the global market, in order to establish a competitiveness framework to facilitate CCFs' improving their international competitiveness.

The following objectives were identified:

Objective 1: Systematically to review theories and concepts of competitiveness.

Objective 2: To posit a draft conceptual competitiveness framework based on identifying the key competitiveness indicators (KCIs) from secondary data.

Objective 3: To refine the draft conceptual competitiveness framework.

Objective 4: To apply a mathematical method to calculate a construction firm's competitiveness.

Objective 5: To validate and reflect on the implication of the competitiveness framework.

The following research questions have been investigated:

Question 1: What is the concept of competitiveness and how is it employed in the construction industry?

Question 2: What are the KCIs in the global construction market?

Question 3: Can an operational framework for construction firms' competitiveness be con-

structured?

Question 4: Can a firm's competitiveness be calculated?

Question 5: How competitive are Chinese construction firms?

Concerning the objectives and questions cited above, an appropriate methodology was needed to seek answers to those questions. Both qualitative and quantitative methods have been used to assist the investigation, and an analysis of the aim and objectives of these questions has been conducted.

1.5 Research Methodology and Data Collection

The purpose of the methodology was to show the appropriateness of the techniques used to gather data and the methodological approach employed in the research. Previous studies from the literature are often employed to explore an understanding of data collection approaches, and methodological implications in order to justify their use over alternative techniques.

This book followed four phases, namely: conceptual, exploratory, operational, and reflexive phases. Both deductive and inductive approaches should be employed in such a comprehensive topic as this. A deductive approach is revealed in the literature review in the conceptual phase to understand the theory of competitiveness and to identify the KCIs for assessing construction firms within the changing global market; thus, a conceptual competitiveness framework could be established. An inductive approach in the last three phases has helped the researcher when investigating those KCIs, which have contributed to CCFs' international competitiveness in the global market.

A sequential explanatory strategy has been applied to the collection and analysis of both quantitative and qualitative data. For this sequential study, the researcher organised the research of procedures as the first step of this sequential study involving the collection and analysis of quantitative data via secondary resources in order to identify key global construction firms in the competitive global construction market, and to demonstrate how such firms responded to changing global market conditions.

The quantitative results informed the types of participants to be purposefully selected for the qualitative phase and types of questions, which would be asked of participants. Following that, the collection and analysis of primary quantitative and qualitative data by interview by employing the Modified Delphi method, and structured interviews in the case study have been undertaken. The interviews have been transliterated back-to-back to ensure functional equivalence of its items in the two languages.

The Modified Delphi method was applied in the interviews since Delphi's objective was to obtain the most reliable consensus of opinion from a group of experts. This facilitated the researcher's investigation into:

- (1) The international competitiveness issues of CCFs.
- (2) The KCIs drive CCFs' international competition in the global market.

As such, the Modified Delphi method necessitated interviews with experts in the construction industry. According to the annual ranking of the *Top 250 International Contractors* by Engineering News Records, a total of 27 Chinese construction firms (CCFs) were ranked in the top 100 from 2004 to 2014. In order to investigate the KCIs, which contributed to CCFs' successful global operation, 14 experts were selected from those 27 CCFs in the top 100 international contractors for interview. Additionally, 18 interviewees were selected outside the CCFs' top 100 firms. These interviewees included 28 experts from construction companies, two scholars from British universities and two scholars from Chinese universities. The experts' knowledge and experience within the field of this study should be considered valid. Those experts had at least five years' work experience in overseas marketing; they held a management position and possessed a relevant bachelor's degree. Moreover, an academic scholar who researched a related topic was selected for interview too. In this context, thirty Chinese experts and two UK scholars have been selected (Appendix I). The interview questions have been designed to relate to the research objectives, questions, and the draft conceptual competitiveness framework. Thus, in this book, three open-ended questions, and the KCIs' to be rated on a 5-point Likert scale have been designed.

The structured interviews were applied in the case study, which analysed of China General Nuclear Power Corporation (CGN)'s investment in Hinkley Point C power station (HPC) in the UK. The competitiveness framework was required to validate challenging sectors in the construction market; in addition, nuclear power construction was one of CCFs' international businesses. Thus, analysis of CGN's international competitiveness based on its investment in HPC could provide an interesting case study to validate competitiveness framework's practicability. However, this case study required experts understanding of the case's issues, thus, two experts from the nuclear power construction industry were selected. This helped the researcher's investigation into:

- (1) The current issues of the UK and China's nuclear power construction development.
- (2) How CCFs engage in nuclear power construction in the UK.
- (3) What is CCFs' competitiveness in the UK's nuclear power construction industry?
- (4) Can the competitiveness framework be applied to CCF?

2 A Critical Review of the Concept of Competitiveness

Both deductive and inductive approaches were adopted including a sequential explanatory strategy. A deductive approach was applied in the literature review in the conceptual phase to understand the theory of competitiveness and to identify the Key Competitiveness Indicators (KCIs) for assessing construction firms within the changing global market, thus, a draft conceptual competitiveness framework was proposed. Here, in this chapter, the literature concerning competitiveness theory has been analysed. According to the methodology design, this chapter has applied a deductive approach to analyse the concept of competitiveness through a secondary literature review.

Buckley *et al.* (1988) claimed that competitiveness could be examined from three different levels: that of the country, the industry, and the firm. Shen *et al.* (2004), however, considered that competitiveness could be analysed from four different levels: that of the country, the industry, the firm, and the project. This book investigated Chinese construction firms' international competitiveness at the level of the firm. Consequently, this chapter has conducted a literature review of a firm's competitiveness theory, in order to achieve the following aims:

- (1) Review the concept of competitiveness at the level of the firm.
- (2) Understand competitiveness in the construction business.

2.1 Review of the Concept of a Firm's Competitiveness

“What is competitiveness?” is a straight question while debating the approaches for measuring competitiveness. In reality, almost every paper relevant to this topic has struggled with a definition. Lu (2006) noted that how competitiveness was measured depended on how it was defined, and how to improve competitiveness depended on the understanding gained into the concept.

Competitiveness is one of the influential and popular concepts in both economic and management areas. It has long been discussed by classical and modern economists, including Adam Smith (1776), David Ricardo (1817), Joseph Schumpeter (1942), and Nicholas

Negroponte (1995). The IMD World Competitiveness Centre publishes competitiveness reports annually to estimate the competitiveness of nations and industries. It has been attested by Porter (1980) that competition played an important role for firms' success or failure in the market. Although researchers have been very productive in proposing their own competitiveness definitions, and have received extensive approval for its importance, but researchers have failed to reach a consensus on its definition. Since the 1960's, the achievement of competitiveness at a firm's level has received considerable attention, and has resulted in a fruitful body of literature (Flanagan *et al.* 2007).

Ricardo (1817) said that comparative advantage is an economic theory about the work gained from trade for individuals, firms, or nations that arose from differences in their factor endowments or technological processes. In an economic model, agents have a comparative advantage over others in producing a particular good if they could produce that good at a lower relative opportunity cost or autarky price. Schumpeter (1942) noted that the role of the entrepreneur as a factor of competitiveness, underlining that progress was the result of disequilibria, which favoured innovation and technological improvement. Sloan (1963) described that the concept of management as a key input factor for competitiveness. Weihrich (1982) presented a typical list of attributes affecting enterprise businesses, being classified as economic, social and political factors, management and finance abilities, markets and competition. But the relationship between a company and its customers was ignored. A report on the select committee of overseas trade by Low (1985) claimed that a firm was competitive if it could supply products and services of superior quality, and at a lower cost than its domestic and international competitors; therefore, competitiveness was created by a firm's long-run profit performance and its ability to reward its employees and to provide superior returns to its owners. It suggested that a firm's competitiveness should focus on financial capability related to costs, prices, and profitability. But this definition had limitations, because it overlooked the fact that business management processes, including human resources, strategic management, and operation management could all affect a firm's competitiveness. Porter (1985) pointed out that at the firm's level, profitability, costs, productivity, and market share were all indicators of competitiveness. Buckley P.J. *et al.* (1988) noted that firm's competitiveness includes reaching goals at the lowest possible cost and having the right goals. The choice of industrial goals was crucial. D'Cruz (1992) suggested that competitiveness could be defined as the ability of a firm to design, produce or market products superior to those offered by competitors, including price and non-price qualities. Johnson (1992), and Hammer and Champy (1993) considered the competitive process enhanced the ability of an organisation to compete more effectively. For

providing customers with greater value and satisfaction than their competitors, firms must be operationally efficient, cost effective and quality conscious. These scholars paid more attention to an enterprise's ability to achieve greater value or profit. Feurer and Chaharbaghi (1994) said that competitiveness was comparative and not absolute. It depended on shareholders' perceptions, customer values and financial strength, which determined the ability to act and react within the competitive environment and the potential of people and technology in implementing the necessary strategic changes; competitiveness could only be sustained if an appropriate balance was maintained between these factors which could be of a conflicting nature. Feurer *et al.* (1994) described competitiveness as a valuable relationship between organisations, customers, and shareholders. They suggested that an organisation make a profit in order to satisfy its shareholders and achieve continuous profit growth, which would improve its market position, as well as maximizing its potential for making greater profits to attract the necessary funds provided by its shareholders. It would be competitive in the views of customers if it were able to deliver better value when compared with its competitors. Negroponte (1995) pointed out that the concept of knowledge has been determined recently as the most important factor in competitiveness. Inancevich *et al.* (1997) explained that a firm could produce goods and services that met the test of international markets under free and fair market conditions, while maintaining or expanding the real incomes for its employees and owners.

It would be a daunting task to compile a comprehensive list of the definitions of firms' competitiveness, which have been detailed in the literature. In view of the fact that competitiveness had many diverse definitions. Porter (1998) stated that there was no strict definition of competitiveness. Lu (2006) stressed that the debate about competitiveness still persisted today. A universal and exact definition of competitiveness did not exist. Therefore, it was important to define competitiveness issues, because both the methods of understanding the concepts of competitiveness and the nature of the factors influencing it were essential in identifying any competitiveness problems (Scott and Lodge 1985). The author agreed with their views that an explanation of competitiveness was necessary for exploring construction firms' competitiveness. Consequently, the above scholars' definitions of a firm's competitiveness would not be sufficiently flexible enough to apply at present. Nonetheless, these scholars provided valuable insights into competitiveness, but they considered industry in general, while the construction sector was characterized as being heterogeneous (Flanagan *et al.* 2007). Three dominant schools of competitiveness theory could provide a deep notion of competitiveness at a firm's level.