

# Conceptual determinants of construction project management competence: A Chinese perspective

Ping Chen <sup>a,\*</sup>, David Partington <sup>b</sup>, Jia Ning Wang <sup>a</sup>

<sup>a</sup> State Key Laboratory of Hydrosience and Engineering, Tsinghua University, Beijing 100084, China

<sup>b</sup> Cranfield School of Management, Cranfield, Bedford MK43 0AL, UK

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## Abstract

In recent years Western project management theories and practices have become increasingly recognized and dispersed in China, particularly in construction-related work. The assessment and development of project management competence in China are driven by attempts to follow the Western standards-based competence certification programmes. Yet little is known about whether and how the predefined set of knowledge embodied in the Western standards are used by Chinese project managers in their workplace. In this paper we report an empirical exploration of Chinese construction project managers' ways of conceiving and accomplishing their work. We replicate in the Chinese context the previous UK-based phenomenographic study of construction project management competence, which revealed three different conceptions arranged in a hierarchy of performance. The results of this China-based study confirm the conceptual determinants of construction project management competence first revealed in the UK, and provide practical implications for effective training and professional certification of project management competence in China. Meanwhile, the replication of the phenomenographic approach to understanding project management competence in China enhances the cross-cultural validity of the approach and highlights its potential for explorative management research.

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## 1. Introduction

Modern forms of project management originated in the Western aerospace and defence sectors in the late 1950s and 1960s, and became more dispersed in the 1970s most notably in construction-related work. Since then the discipline has grown in refinement and recognition, to the extent that most large Western organizations now regard project management as an important organizational capability. There are now a number of well-established project management standards that define the scope of the disci-

pline and describe its theories, processes, tools, and techniques. These standards are now widely used as the basis for assessing, developing and certifying project management competence [1].

Although China started to import the concepts and skills of project management from the West in the 1960s, these were narrowly confined to major national defence research projects such as the strategic missile system [2]. However, since the Chinese economic reforms of the 1980s, project management theories and practices have become increasingly recognized in China, particularly in construction-related work. Now, the assessment and development of project management competence in China are driven by attempts to follow the widespread Western standards-based professional competence certification programmes. Prominent recent examples of this trend

\* Corresponding author. Tel./fax: +86 10 62782027.  
E-mail address: [pchen@tsinghua.edu.cn](mailto:pchen@tsinghua.edu.cn) (P. Chen).

include the launch of PMI's PMP examination and certification programme in 2000, and the IPMA's programme in 2001 [3].

The use of project management standards for professional competence assessment and development in the West and their transposition into the Chinese context are based on the assumption that management practices are context-independent and universal. This premise may be questioned, since the pre-defined context-free knowledge and principles embodied in the standards specify only what competent project managers should know and do rather than whether and how project managers use these knowledge and principles in accomplishing their work. There is a clear opportunity and need to understand Chinese practicing project managers' ways of conceiving and experiencing Western originated project management work within the Chinese context.

In a previous study, Chen and Partington [4] took an interpretive approach based on the principles of phenomenography [5,6] to explore project managers' ways of experiencing and accomplishing their work, thereby understanding the determinants of their performance in the workplace. From their interviews with 30 project managers in UK construction firms, Chen and Partington [4] identified three different basic conceptions of project management work, reflecting a hierarchy of three forms of construction project management competence in the UK.

This paper reports a replication of Chen and Partington's [4] UK-based phenomenographic study through a matched sample of project managers from Chinese construction firms. In the next section, we first discuss the determinants of project management competence and give a brief summary of Chen and Partington's [4] previous study. We then review the conception-based approach to understanding competence, known as phenomenography, and describe the methods and results of this study in China. We conclude with a discussion of the implications of our findings for practice and future research.

## 2. The determinants of project management competence

Taylor [7] was one of the first to address the question of what constitutes competence at work, and his well-known 'time and motion studies' were based on scientific principles. Although later authors [8,9] used 'job analysis' instead of 'time and motion studies' to identify competence at work, the dominant approach follows essentially the same scientific attribute-based tradition. Two principal traditional approaches to competence at work can be distinguished: worker-oriented and work-oriented. The former emphasizes workers' attributes, such as knowledge, skills and abilities, and personal traits [10], whilst the latter treats work as existing independently of the worker, definable in terms of the technical requirements of work tasks [11]. Nevertheless, both traditions view competence as an attribute-based phenomenon, constituted by a specific set of generic and context-independent attributes, which do not

determine practical competence in experiencing and accomplishing work [4].

There have been many studies of project management competence aiming at identifying determinant factors and/or criteria for a successful project or a competent project manager [12–15]. Most of these studies accord with attribute-based approaches, focusing on either the project work activities (work-oriented) or the personal characteristics of project managers (worker-oriented). Project management competence is described as a specific set of attributes, either 'hard' components of a standard or 'soft' characteristics hidden in personal qualities [4]. Such lists of attributes described in project management standards and the predefined sets of generic performance criteria are necessary for defining the scope of the discipline and providing foundations to further develop the profession. However, being independent of the context of project management work and independent of individual project managers, they cannot capture project management competence in the workplace.

In order to overcome the criticisms of the current attribute-based studies of project management competence, Chen and Partington [4] followed the phenomenographic approach focusing on the relation between the work and the worker, namely, worker's conceptions of work, to understand project management competence from a conception-based perspective. From their workplace interviews with 30 construction project managers in the UK, those authors identified three different basic conceptions of construction project management work, namely project management as: (1) planning and controlling; (2) organizing and coordinating; and (3) predicting and managing potential problems. Each conception includes a different main focus and key attributes that appeared when project managers experienced and accomplished their work. Differences in conception reflect a hierarchy of three forms of conception-based construction project management competence in the UK [4, p. 420]. By taking project management work and project managers as a unified entity, their study revealed the conceptual determinants of construction project management competence in the UK.

## 3. The conception-based approach to competence – phenomenography

Originally developed by an educational research group at the University of Göteborg in Sweden in the 1970s, phenomenography is a research approach 'for mapping the qualitatively different ways in which people experience, conceptualize, perceive, and understand various aspects of, and phenomena in, the world around them' [16, p. 31]. Being different from the traditional attribute-based approaches, the main feature of the phenomenographic approach is its basis on phenomenology, which assumes that 'person and world are inextricably related through people's lived experiences of the world' [6, p. 11]. In phenomenography, knowledge is neither subjective nor objec-

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