

Relationship between total quality management (TQM) and continuous improvement of international project management (CIIPM)

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Abstract

The purpose of this study is to investigate the relationship between the total quality management (TQM) practice and the continuous improvement of international project management (CIIPM) practice. Based on a literature review and qualitative interviews with TQM and project management experts, four hypotheses are posed on how TQM elements affect CIIPM. A cross-sectional survey collected from over 100 mid to senior level international managers is used to validate these hypotheses. The study suggests that the relationship between ‘soft’ TQM elements and CIIPM is more significant than the relationship between ‘hard’ TQM elements and CIIPM.

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1. Introduction

In the midst of rapidly changing globalization, dynamic changes are taking place at the organization strategy level. Organizations are paying more attention towards optimizing their management practices. Not all organizations can choose and implement the same set of management practices that are successful elsewhere. The ability to identify what is changing in the environment and respond proactively through continuous improvement efforts has been viewed as a key element needed for organizational success (Brown and Eisenhardt, 2000; Hamel, 2000). One form of operations management practices is total quality management (TQM), which has received a growing amount of attention in the last two decades. Thus far, mixed results on outcomes of TQM implementations have been reported: the relationship of the TQM practice is positively associated with operational performance measures (Choi and Eboch, 1998); and the implementation of the TQM practices marginally affects actual improvement of organizational performance (Broetzmann et al., 1995).

Another type of management practice that has been receiving a burgeoning amount of usage and research in the

last decade is project management. An increasing number of organizations are selecting project management as a means to achieve their strategic objectives (Kerzner, 2003). Project management provides the ability to plan, execute and control activities in a systematic way (Meredith and Mantel, 2003). Generally accepted project management standards, such as the guide to the Project Management Body of Knowledge (PMBOK), encourages making continuous improvement to project management practices (PMI, 2000). There have been ranges of studies performed on the relationship between project management elements and project success; there also have been various studies performed on the relationship between TQM elements and firm’s success. However, there is a wide range of organizations that have implemented both kinds of management practices and the relationship between TQM elements and continuous improvement aspects of project management is an important area worthy of further investigation. The goal of this research is to investigate how different TQM elements are related to the continuous improvement aspect of international project management, collectively and individually.

This paper is organized as follows. Following this introduction, Section 2 presents a pertinent literature review on total quality management practices and continuous improvement of international project management. A research model and related hypotheses are offered based on the literature review and expert interviews. Section 3 describes the research methodology including the instrument, survey procedure, and validity and reliability tests of the constructs.

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Section 4 presents the analysis of results. Section 5 presents the implications of the results and the findings. Section 6 concludes this study with further research implications.

2. Theoretical background

2.1. Continuous improvement of international project management (CIIPM)

A growing number of organizations are adopting project management as part of their management practices. The typical goal of project management is to execute the project within a targeted budget, schedule and performance. Academicians and practitioners have studied how various management elements influence project management success. [Tatikonda and Rosenthal \(2000\)](#) studied how various degrees of flexibility and formal control methods exerted over project execution influence project success. [Pinto and Prescott \(1988\)](#) pointed out how personnel factors can be only marginal variables in project management success. The challenge of targeting only those factors that generate value to the business was studied by [Holland and Kumar \(1995\)](#). [Zammuto and O'Connor \(1992\)](#) described how organizational culture, in terms of flexibility versus control, can influence the overall effectiveness of project management. [Belout and Gauvreau's \(2004\)](#) study described how multiple factors such as organizational structure, life cycle stage of business scope, and top management support, all influence project management success as a total entity. As organizations gain more project management maturity, making continuous improvements to project management has to appear as a new avenue towards achieving improved results. Implementing continuous improvement in project management is essential for the success of international organizations ([Meredith and Mantel, 2003](#)).

2.2. Total quality management (TQM) practice

TQM can be defined as a holistic management philosophy which strives for continuous organizational improvement ([Kaynak, 2003](#)). One of the early research works of defining what elements constitute the TQM practice in measurement study was conducted by [Saraph et al. \(1989\)](#). Since then numerous versions of related studies were conducted by authors including [Flynn et al. \(1994\)](#); [Black and Porter \(1996\)](#); [Choi and Eboch \(1998\)](#), [Samson and Terziovski \(1999\)](#), and [Kaynak \(2003\)](#). Although different versions of previous studies included largely similar TQM elements as the input and various performance measures as the output, mixed results have been reported. The introduction of the Malcolm Baldrige National Quality Award (MBNQA) framework in 1995 has narrowed the number of disputes on what elements constitute TQM practices. Since then, numerous researchers have based their frameworks on the MBNQA framework: leadership, strategy and planning, customer focus, information and analysis, people management, and process management. [Samson and Terziovski](#) took a practical approach of determining which elements of TQM practices are more

strongly related to operational success (1999). This study adopts classifications similar to those of [Saraph et al. \(1989\)](#); [Black and Porter \(1996\)](#) as a starting point. Further, some elements of TQM practice were modified based on more recent literature reviews, qualitative pre-survey interviews with TQM practitioners, and a pilot test utilizing data collected from three corporations. The list of revised TQM elements is tabulated in Appendix A. The background of revised TQM elements is explained in the following sections.

2.2.1. Leadership

The well-known quality pioneers ([Deming, 1986](#); [Juran, 1986](#)) have pointed out how top management leadership, which can be considered as the most influential TQM element, affects other elements of the organization ([Anderson et al., 1995](#); [Flynn et al., 1995](#); cf. [Kaynak, 2003](#)). Top management's commitment to quality reflected in organization strategy is instrumental for changing organizational culture in order to implement TQM practices ([Hamlin et al., 1997](#); [Ho et al., 1999](#); cf. [Kaynak, 2003](#)). TQM can be part of the organization's strategy to reflect the organizational mission and keep future strategies in line with the objectively chosen goals ([Juran, 1989](#)). Consequently, we propose the following hypothesis:

H1: Leadership is positively and significantly related to CIIPM.

2.2.2. Employee relations

Employee relations, including empowerment in decision making, proper recognition and compensation, and teamwork, are asserted to impact the firm's performances ([Ho et al., 1999, 2001](#)). Empowering and involving all employees in making continuous improvement is essential; under such conditions, employees work harder and participate more in the change process ([Flynn et al., 1995](#); [Handfield et al., 1998](#); cf. [Kaynak, 2003](#)). As employee empowerment and involvement is encouraged, clear open communication of organizational strategy and quality-based incentive procedures can enhance the process ([Bonito, 1990](#); cf. [Kaynak, 2003](#)). Management must ensure that an organization-wide training program is available in order to equip employees with the proper skills ([Anderson et al., 1995](#); [Flynn et al., 1995](#); cf. [Kaynak, 2003](#)). In order to participate in quality management practice, employees must be adequately trained in total quality management techniques ([Ho et al., 1999](#); cf. [Kaynak, 2003](#)). Thus, we propose the following hypothesis:

H2: Employee relations are positively and significantly related to CIIPM.

2.2.3. Customer/supplier relations

Customer relationship management focuses on meeting and exceeding customers' expectations, resulting in customer satisfaction. Dissemination of customer-related information through the organization (e.g. customer complaint resolution) enables effective relationship management. Employee empowerment and involvement through increased access to

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