

8th Nordic Conference on Construction Economics and Organization

## Critical review of procurement method research in construction journals

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### Abstract

One of the features of the construction industry over the last three decades or so, has been the use of various procurement methods for projects such as management contracting, project management and design and build. With the growth in the use of these methods, a number of researchers have investigated the criteria for their selection and their performance in terms of time, cost and quality. However, there is a lack of reporting on the association between procurement methods and the advanced related issues such as innovation and technology, supply chain, lean construction, buildability, sustainability and value management. Through selected papers from well-known academic journals in construction management, detailed coverage of these issues is systematically reviewed with the aim to investigate the state of the art and trends in procurement research. The outcome of this paper may provide a platform for both researchers and industrial practitioners to appreciate the latest developments and trends in procurement method research.

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Selection and/ peer-review under responsibility of Tampere University of Technology, Department of Civil Engineering

*Keywords:* critical review; procurement method; research in construction

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### 1. Introduction

It is axiomatic of construction management that a project may be regarded as successful if the building is completed as scheduled, within budget and quality standards as well as achieving a high level of client satisfaction. Increasingly, the fulfillment of these criteria has been associated with the problem of procurement method for construction. In short, the selection of the appropriate method can shape the success of the project.

Broadly speaking, the problems that are facing the building process are considered in relation to: (1) Separation of design from construction; (2) lack of integration; (3) lack of effective communication; (4) uncertainty; (5) changing environment, (6) changing clients' priorities and expectations, and (7) increasing

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project complexity. These, together with economic changes (e.g. inflation and recession), have led construction professionals and the industry to offer alternative methods of building procurement such as design and build, management contracting and construction project management.

There are other mechanisms in procuring a project such as partnering, PFI, PPP, etc., which may also be considered to fall under the term procurement method. However, they might be more accurately labeled as an approach to procurement. Naoum (2003) described it as a philosophy and a contract of trust. For example, most partnering arrangements are an over-arching agreement, which encompass one or several contracts let under one of the three key methods. The large amount of research has given rise to a similarly large number of definitions of procurement method. Two of the many definitions are:

- “a procurement system is an organizational system that assigns specific responsibilities and authorities to people and organizations, and defines the relationships of the various elements in the construction of a project.” Love et al (1998, p 221).
- “a mechanism for linking and coordinating members of the building team throughout the building process in a unique systematic structure, both functionally and contractually. Functionally via roles, authority and power, contractually via responsibilities and risks. The main aim is to deliver a project that meets its objectives and fulfill the client criteria and expectations.” Naoum (2011a, p 2).

With the increase in use of alternative procurement methods, a number of researchers have developed decision making charts in order to investigate the criteria for their selection and their rate of success in terms of time, cost and quality. However, over the years the selection process has become increasingly complex, mainly as a result of the continuing proliferation of different methods of procuring building projects, the projects’ ever-increasing technical complexity and the client’s need for a more value for money projects. It is therefore, imperative to say that the classic criteria of time, cost and quality alone are now too simplistic in the context of today’s complex construction project environment and the decision charts need updating.

The aim of this paper is to present a comprehensive literature review that seeks to address modern factors that are associated with the selection of current procurement. In order to achieve this aim, the authors have conducted a systematic literature review from 1980 to 2014, focusing on those modern issues with the aim of developing an up-to-date decision making chart for selecting the appropriate procurement method for the project.

## 2. Research methodology

A two-stage methodology was conducted to achieve the research aim, these are:

### 2.1 Stage 1 – Identifying the relevant literature material

The literature review process started by looking into primary and secondary sources. The primary literature sources included refereed journals, refereed conferences, dissertations/theses, occasional papers and government reports. Secondary sources included text books, trade journals, newspapers and magazines. The five top journals that were reviewed in the search are: i) American Society of Civil Engineers (ASCE); ii) Construction Management and Economics; iii) Engineering, Construction and Architectural Management; iv) International Journal of Project Management; v) International Journal of Procurement. These top five journals were selected as they frequently publish scholarly papers in the field of procurement methods and they have been ranked highly by several research activists in construction management such as the list that was published by Chau (1997). Apart from these, five other peer-reviewed journals that have published frequently cited construction papers were also added to the selected journal list, namely, i) Construction Innovation, ii) Facilities; iii) An International Journal; iv) International Journal of Managing Projects in Business; v); Industrial Marketing Management vi) International Journal of Quality and Reliability Management. Altogether, 10 top-tier journals were selected for this exercise.

The main international conference proceedings that were reviewed are the CIB (W65, W92, W90) and (ARCOM). Technical reports and occasional papers were also covered as they are comprehensive and often publish up-to-date information. These are the (CIOB), (RICS), (RIBA), (BRE) and (CIRIA). These

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