

An Assessment Framework for Project Success in Healthcare Projects

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Abstract

Completed on time, within budget, and with specified quality standard have been widely recognised as the predominant targets of a successful construction project. As time goes by, the criteria of project success are becoming more demanding. A project can be considered successful only when it achieves all its functionality and purposes, environmental friendliness, being completed with low accident rates, and free from any claims and litigation. High level of profitability and satisfaction of various contracting parties are also important indicators for project success. This paper aims to identify the success criteria for healthcare projects in Hong Kong. A general framework for measuring project success was established after a comprehensive literature review. A series of detailed structured interviews were conducted with a group of practitioners who had hands-on experience in hospital projects. Their views on the success criteria were collected and a set of Key Performance Indicators (KPIs) for healthcare projects were developed. Findings from this study could help to develop a benchmark model for evaluating the performance of a healthcare project. Further detailed case studies should be launched to assess the usefulness and advantages of such benchmark model to the construction industry.

Keywords

Success Criteria, Key Performance Indicators (KPIs), Healthcare Projects, Hong Kong

1. Introduction

Most of the research in project management field has focused on the factors leading to the success of a construction project over the last ten years (Sanvido et al., 1992; Belassi and Tukel, 1996; Chua et al., 1999; Walker and Vines, 2000). These critical success factors, however, vary with each model and they are either very general or very specific. It seems that the construction professionals are still ambiguous in the conception of these factors. Each building project is unique in nature and faces different problems because of different participants and processes in a constantly changing environment (Sanvido et al., 1992). To ensure project success and avoid any failures, a clear definition and concept of project success is essential. It helps to set criteria and standards by which project managers can complete projects with

the most favourable outcomes. Once the criteria have been identified, project managers are capable to manage and allocate resources effectively.

A number of researchers have investigated the concept of project success. However, no general agreement has been achieved. The definition of project success varies from one to another. Time, cost and quality are the three fundamental targets that nearly all project teams desire to achieve. As time goes by, the criteria of project success are changing or expanding. Besides these three predominant objectives, a successful project must be also completed with its functionality, environmental friendliness, low accident rates, etc. However, the definition of success changes from project to project and from individual to individual.

This paper aims to identify the success criteria for healthcare projects in Hong Kong. The methodology will be firstly presented. Then, a proposed framework for measuring project success, which is based on Chan and Chan (2003) and Chan et al. (2003), will be explained. It is followed by the discussion on the preliminary results which were consolidated from twenty structured interviews with practitioners involved in healthcare projects. Finally, a conclusion will be drawn for further investigation.

2. Methodology

The present research was conducted by literature review and structured interviews. To identify the success criteria for running a construction project, a critical review on the relevant articles of the last ten years of some major construction management journals was conducted. Then a proposed model was developed for the interviewees to rank their choices.

Twenty structured interviews were conducted, including the contractors, consultants and client representatives. Table 1 shows the background information of these interviewees. Content analysis which is about organising the substantive content of the interviews, was used for this research. Through the analysis, the key and substantive points of the interviewees' opinions were identified and grouped into several appropriate categories.

Table 1: Background information of interviewees

Nature of company	Number of interviewees	Position
Hospital Authority	2	Project managers
Consultants	5	Project managers, engineers
Contractors	6	Project managers, project coordinators, site agents
Government Departments (mainly from Architectural Services Department)	7	Architects, engineers, quantity surveyors, technical secretary

3. General Framework for Measuring Project Success

Project success means different things to different people (Beale and Freeman, 1991; Freeman and Beale, 1992). For a construction project, the perception of success is varied for each stakeholders, such as architects emphasize on the aesthetic qualities; quantity surveyors emphasize on the budget; contractors and clients emphasize on profitability and end-users focus on the living and building qualities. Chan et al. (2003) defines the criteria of project success as the set of standards which can be completed within a set specification and are conducive to the favourable outcomes. Hence, definitions on project success are

dependent on project characteristics, project size, experience of project participants, etc. Previous research has shown a number of criteria of project success being identified over the last decade (Chan and Chan, 2003; Chan et al., 2003).

Navarre and Schaan (1990) report that project success is measured by the project duration, project cost and project performance. Nearly all research mentions time, cost and quality as the predominant criteria for project success (Walker, 1995, 1996; Belassi and Tukel, 1996; Chan and Kumaraswamy, 2002). Therefore, time, cost and quality are named as the 'Iron Triangle' by Atkinson (1999).

Pinto and Pinto (1991) suggest that project psychosocial outcomes should be included as one of the criteria. This 'soft' measure refers to the subjective measure of satisfaction of project team members.

In addition to these criteria, Pocock et al. (1996) suggest including the absence of legal claims and accidents as the indicators of project success. It is understandable that when accidents occur, the clients and contractors are subject to legal claims.

Kumaraswamy and Thorpe (1996) consider meeting budget, schedule, quality of workmanship, client and project manager's satisfaction, transfer of technology, friendliness of environment, health and safety as the criteria that should be included in project evaluation.

As time goes by, researchers have derived several more detailed definitions of project success. Lim and Mohamed (1999) proposed that the project success should be viewed from both the Macro and Micro levels. Micro viewpoint includes time, cost, quality, performance and safety; while macro viewpoint includes time, satisfaction, utility and operation. Shenhar et al. (1997) and Atkinson (1999) further advocate that the measure of project success should be time-dependent. Figure 1 provides a consolidated framework for measuring project success.

Figure 1. A consolidated framework for measuring project success

From the structured interviews, all interviewees agreed that nearly all of the proposed criteria in Figure 1 are the success criteria of healthcare projects, except the commercial profitability or value. Although the criteria of the contractors and consultants proposed are nearly the same, the reasons behind their choices and their rankings of the criteria are slightly different.

The client representatives and consultants consider functionality as the highest ranking criterion. Healthcare buildings are functional buildings and provide services for the public. The building is essential to complete with its stated objectives as it is related to the life and health of the public. Besides, the ultimate users of the healthcare buildings are heterogeneous, including doctors, nurses, patients, professional technicians, administrative staff, etc., and thus the satisfaction of the end-users is very important. Their satisfaction reflects the level of functionality of the project. A project completed on time and within budget are still the basic criteria. However, their priorities are not as high as the functionality and satisfaction level. The client representatives and consultants accept a minimal cost and time overrun if it is necessary. To enhance the curative process of the sick people, the surrounding environment should be pleasant and safe. If the environment is not free from water, noise and air pollutions during construction and maintenance periods, the patients will suffer.

From the contractors' point of view, completed on time, within budget, with required quality standard, with low accident rate and environmental friendliness are the main targets that every contractor wants to achieve. Construction projects are the major income of their companies, therefore, profitability is also an important criterion. Moreover, project time and budget overruns may bring about litigation which has

financial implications for the contractors, so completed on time and within budget are two closely linked factors to the profit.

4. Key Performance Indicators (KPIs) for Healthcare Projects

Key performance indicators (KPIs) are identified for measuring the project and organizational performance for a project or for an industry. KPIs are general performance indicators that are limited in manageable number which focus on critical aspects of outputs or outcomes (KPI Working Group, 2000 and Collin, 2002). After the structured interviews, a set of KPIs including objective and subjective indicators are developed to measure the performance of a healthcare project (Figure 2).

Figure 2. KPIs for project success in a healthcare project (Chan and Chan., 2003)

5. Conclusions

The ageing population in Hong Kong has already increased the local demand on the healthcare facilities. After the outbreak of the Severe Acute Respiratory Syndrome (SARS), the community expectation of healthcare services is much higher. The SARS event also highlights the insufficient facilities of hospitals toward the combat of infectious diseases in Hong Kong. In order to prevent other outbreaks of infectious diseases, extensive alteration, addition and construction of hospital projects are expected. Therefore, it is worthwhile to study how to enhance the success of healthcare projects. This paper aims to develop a benchmark model to assess the success of healthcare projects. It provides a comprehensive literature review on the success criteria for running healthcare projects. From the structured interviews, it is found that functionality and satisfaction of the end-users and clients are the most important criteria for the success of the healthcare projects. Although time, cost and quality are still the 'iron triangle' of the construction projects, they are in lower priorities than functionality and end-users' satisfaction. Safety and environmental friendliness are now the public concerns and therefore become the indispensable criteria. Commercial profitability is not applicable to healthcare projects, as the healthcare buildings are functional in nature which do not aim at generating income. Once the framework is developed, the factors contributing to the success of healthcare projects can be determined. To further investigate this research topic, a detailed questionnaire survey has been launched in Hong Kong for more in-depth study and the survey findings will be reported in subsequent publications.

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