

# Contemporary Studies

# **The Mediator Effect of Project Management Tools and Techniques on Project Success**

**Chinthaka Jayasundara <sup>a</sup> and Vishuddhi Jayawickrema <sup>b</sup>**

*<sup>a</sup> University of Colombo, Colombo, Sri Lanka  
chinthaka@econ.cmb.ac.lk*

*<sup>b</sup> Central Bank of Sri Lanka, Colombo, Sri Lanka  
vishuddhi@cbsl.lk*

## **INTRODUCTION AND RESEARCH PROBLEM**

Project management helps an organization to accelerate product development and time-to-market, to utilize limited resources, handle technological complexity, respond to stakeholder satisfaction and increase global market competition (Cleland, 1998). Moreover, several empirical studies support that the correct use of project management tools and techniques (PMTT) lead to project success. Conversely, inappropriate use of PMTT can lead to project delays, budget overruns and unsatisfied customers. In less developed countries the implementation of project management tools and techniques is still in the early phases of development. PMTT is itself a relatively modern practice that attempts to achieve planned objectives within specific time and cost limits through the optimum use of resources and using an integrated planning and control system (Abbasi and Al-Mharmah, 2000). Project management has led a number of organisations to be more effective and efficient in the delivery of their products and services, to have more accurate budgeting, scheduling and improved productivity. Therefore, the growth and acceptance of project management is continuing to increase as resources become scarce in less developed countries.

In less developed countries the implementation of project management tools and techniques is still in its early phases of

development. Abbasi and Al-Mharmah (2000) found out that the use of project management tools and techniques among the public sector companies was considerably low, but when practiced efficiently would result in tangible benefit in all aspects of planning, scheduling and monitoring the time, cost and specification of projects.

Post-conflict economic growth has resulted in a boom in the implementation of development activities across Sri Lanka. However, the Sri Lankan public sector also faces various issues and challenges that are common to developing countries which could ultimately affect its performance. In the above context, the purpose of this research is to investigate the usage of project management tools/techniques in the Sri Lankan public sector and to see whether they contribute to project success. Moreover, it attempts to investigate the mediator effect of project management tools and techniques in achieving project success. In addition, the study intends to understand the factors which influence the project success in the public sector of Sri Lanka.

## **METHODOLOGY**

Considering experts' ideas the researchers planned a mixed approach in conducting the survey to achieve its objectives. Accordingly, the study was carried out with 251 survey responses followed by 8 structured interviews. The research followed a broad-based approach covering various public sector institutions. Accordingly, the analysis includes the government ministries, departments, provincial councils as well as statutory boards and public corporations.

The following hypotheses were formulated based on the previous studies done on the topic.

H1 - Project manager's competency is positively related to the extent of PMTT usage

H2 - Perceived top management support is positively related to the extent of PMTT usage

H3 - Affective organizational commitment is positively related to the extent of PMTT usage

H4 - Project complexity is negatively related to the extent of PMTT usage

H5 - The extent of PMTT usage is positively related to project success

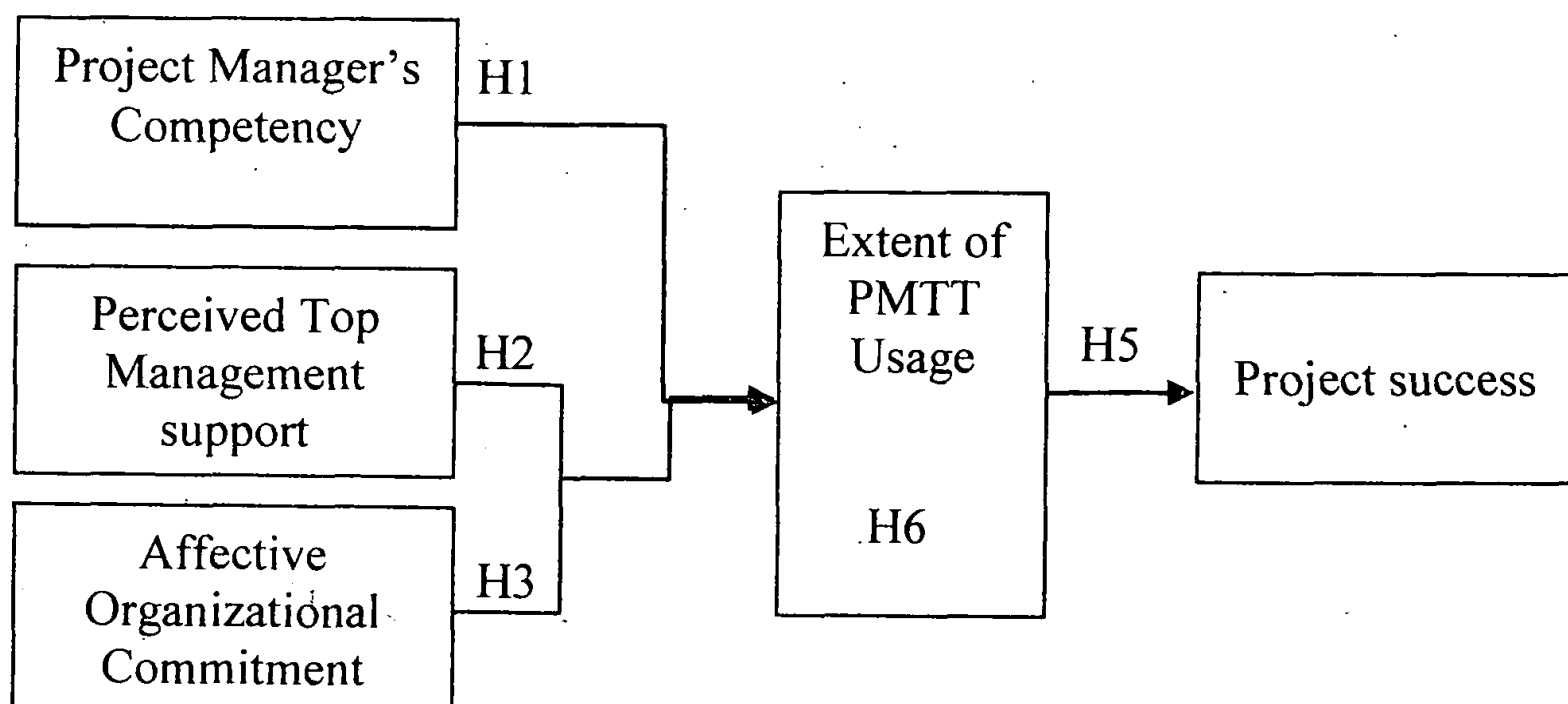
H6 - The extent of PMTT usage mediates the effect of project manager's competency, perceived top management support and affective organizational commitment and project complexity on project success

The analysis was carried out as a predominantly quantitative study where confirmatory factor analysis coupled with structural equation modelling (SEM) was employed as the primary statistical analysis technique.

## **RESULTS AND FINDINGS**

In terms of participants' educational qualifications, a majority of project workers in the public sector possessed at least a bachelor's degree. However, they lack reputed project management qualifications. Among the various types of project management tools and techniques, only the basic tools/techniques are found to be widely used in the public sector.

Hypothesis testing using structural equation modelling revealed that there is a significant association between project manager's competency and PMTT usage. Therefore, hypothesis 1, which states that the project manager's competency is positively related to the extent of PMTT usage, can be accepted. In addition, a significant association can also be noted between top management support and PMTT usage supporting hypothesis 2. Even though the level of significance in the relationship between organisational commitment and PMTT usage is not as large as the previous two relationships, there is a reasonable association between the variables, accepting the third hypothesis. However, no significant association was witnessed between project complexity and PMTT usage, failing to accept the fourth hypothesis. Meanwhile, PMTT usage and project success exhibited a considerable association supporting the fifth hypothesis. Finally, a mediator analysis in terms of a Chi-Square difference test comparing the full model (with mediator) and the direct path model revealed that the extent of PMTT usage mediates the effect of project manager's competency, top management support and organisational commitment on project success. With the empirical evidence attained from the public sector projects it was modified the suggested framework of derived the model in the following figure.



## **CONCLUSIONS, IMPLICATIONS AND SIGNIFICANCE**

This study empirically confirmed the significant association between project manager's competency and project success discovered by previous researchers. In addition, testing for the previously unproven mediator effect of extent of PMTT usage for project success is one of the key contributions to empirical literature. Accordingly, a mediating effect on the relationship between independent variables and project success was evident in the usage of project management tools/techniques once project complexity was exempted.

In addition, several findings were made through the descriptive data analysis. Even though the majority of project managers in the public sector possess a master's degree, they lack reputed project management qualifications such as PMP, CAPM, PRINCE 2 etc. In line with this, it was also revealed that project management tools employed by the public sector are still at a very basic level, where only a few participants indicated that they are making use of some of the advanced project management techniques.

The research findings reveal that the Sri Lankan public sector needs to focus more on enhancing the competency levels of project management staff, improving the level of support and cooperation extended by the higher level authorities, as well as to take measures to improve project workers' emotional attachment to the organisation.

## **REFERENCES**

- Abbasi, G. Y. & Al-Mharmah, H. (2000). Project management practice by the public sector in a developing country. *International Journal of Project Management*, 18, 105-109.

- Baccarini, D. (1999). The Logical Framework Method for Defining Project Success. *Project Management Journal*, 30(4), 25–32.
- Belassi, W. & Tukel, O.I. (1996). A new framework for determining critical success/failure factors in projects. *International Journal of Project Management*, 14(3), 141-151.
- Cleland, D. (1998), 'Strategic project management', In: Pinto, J. K., *Project Management Handbook*, San Francisco, CA: Jossey-Bass Publishers, pp. 27–54.
- Patanakul, P., Iewwongcharoen, B. & Milosevic, D. (2010). An empirical study on the use of project management tools and techniques and their impact on project success. *Journal of General Management*, 35(3).
- Westerveld, E. (2003), The Project Excellence Model: linking success criteria and critical success factors. *International Journal of Project Management*, 21, 411–418.