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# An empirical model of IT usage in the Malaysian public sector

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## Abstract

Whilst there have been many studies to determine the factors that influence the use of information technology (IT) in organisations, few have considered how these factors change with the level of IT use. This paper presents the results of such a study involving the use of IT to support Total Quality Management (TQM). The population studied consisted of those organisations in the Malaysian public sector that had applied for the Malaysian Prime Minister's Quality Award during the period 1992–1997.

Three sets of factors were investigated for their impact on the use of IT to support TQM in this setting: external, organisational, and technological factors. Overall, the organisational and technological factors had more influence on IT usage than did the external factors. However, as organisations became more experienced in their use of IT, the major contextual influences on IT usage levels changed. At low levels of IT usage the major contextual influences were organisational. At medium levels of IT usage a combination of technological and organisational factors became important, whilst at high IT usage levels, the dominant factors were technological. © 2001 Elsevier Science B.V. All rights reserved.

*Keywords:* IT-usage; Public sector; External factors; Organisational factors; Technological factors

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## 1. Introduction

There have been many studies to determine the multiple sets of factors that influence the use of information technology (IT) in disparate settings. For example, Cahill et al. (1990), Kraemer et al. (1993) and Stevens et al. (1994) have examined the influencing factors in

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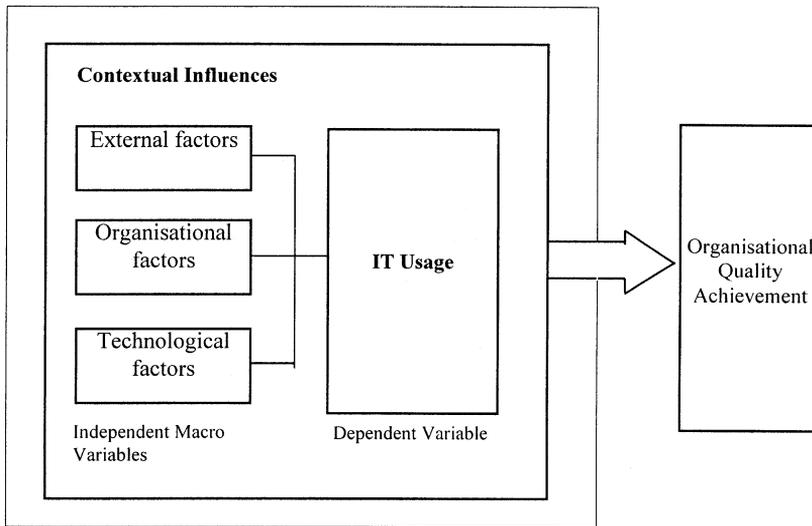


Fig. 1. Schematic diagram of the theoretical framework.

public sector organisations; Raymond (1985), Yap et al. (1992) and Foong (1999) have explored these in small and medium enterprises (SMEs); Bergeron et al. (1995), Hasan and Lampitsi (1995) and Babcock et al. (1995) have investigated factors affecting the executive use of IT. Kasimin (1987) has presented a case study examining the role of information systems in regional development planning in Malaysia, the geographical area of direct interest to the study reported here, and Han and Walsham (1989) have applied their methodology to IT developments in Malaysia. This latter study also describes the development of the Malaysian national IT infrastructure in the period that preceded that in which the present study took place.

Although a large number of factors that facilitate or inhibit the use of IT have been identified, the associated studies generally regarded their samples as homogeneous in terms of IT usage level. Since past studies (e.g. King and Teo, 1994; Foong, 1999) have indicated that organisations with different IT usage levels have different perceptions toward facilitating and inhibiting factors, this study aims to determine those influencing factors, particularly in public sector organisations with different IT usage levels.

The overall purpose of the study described in this paper is to determine if public sector organisations with different levels of IT usage have different factors that facilitate/inhibit their IT use. The Section 2 of this paper briefly discusses the research model, presenting the dependent and independent variables compiled from the respective Total Quality Management (TQM) and IT literatures. Section 3 covers the development of the questionnaire, the targeted respondents of the mail survey and the validation of the instrument. The research analysis and results are presented in Section 4 and finally, conclusions and recommendations are put forward in Section 5.

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