Chapter XIII

Evaluating the Factors Affecting DSS Usage by Senior Managers in Local Authorities in Egypt

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ABSTRACT

The study of factors influencing the adoption and use of information systems in less-developed countries is an important area to address since differences in culture, social structure, and business approaches may have significant effects on the benefits derived from importing Western-influenced IT technology, concepts, and management approaches. This study examines the usage of a decision support system (DSS) in Egyptian local authorities using an adapted Technology Acceptance Model (TAM). The centrally-developed DSS had been rolled out to 27 governorates in Egypt for use by chief executive officers. The results demonstrated that TAM could be applied to a specific system within a developing country. Both perceived ease of use (PEU) and perceived usefulness (PU) had a significant direct effect on DSS usage. PEU dominated over PU whose effect on DSS usage was negative.

CHAPTER COVERAGE

TAM was extended by defining nine external variables: Task Characteristics, Cultural Characteristics, Environmental Characteristics, DSS Characteristics, Internal Support, External Support, Top Management Support, Organizational Characteristics and Decision Maker Characteristics. Top Management Support and Organizational Characteristics exerted the greatest effect, while Environmental Characteristics and Task Characteristics had a negative effect on DSS usage.

The successful use of a DSS requires that the user has a significant amount of independence and autonomy in the decision-making process. However, the organizational structure of Egyptian government is hierarchical with long chains of command and only the top level able to make decisions. In conjunction with interviews, the quantitative results suggest that the perceived usefulness of the DSS is reduced in an environment where there is a lack of autonomy, a command and control culture, and little requirement for decision making in implementing centrally-made decisions.

This study indicates the importance of taking into account external factors when examining IT technology adoption globally. In particular, many aspects of culture, including the background and characteristics of the decision maker, will strongly influence the perception of management support systems.

INTRODUCTION

The usage and non-usage of IT within the developed and non-developed world poses challenging problems for IS researchers and practitioners. While IT usage in the developed world has been well studied (Alavi & Joachimsthaler, 1992; Al-Gahtani & King, 1999; Boynton, Zmud, & Jacobs, 1994), the study of strategic usage of IT in the developing world is a relatively new field in which research is only just being established (Kamel, 1995; Rose & Straub, 1998).

In some countries, poverty, trade barriers, and lack of infrastructure constitute massive constraints to IT usage (Goodman & Green, 1992; Krovi, 1993; Lu, Hsieh, & Pan, 1989). However, the usage of IT is not always constrained by resources alone. Where resources are available, whether local or imported, non-usage of IT is still prevalent (Ibrahim, 1985; Nidumolu & Goodman, 1993; Shibanda & Musisi-Edebe, 2000). Local usage of global systems may be affected by local politics and culture. For example, local usage of Geographical Information Systems in India is affected by cultural attitudes to maps and cartography. Using maps is not seen as important in a country where it is usually easier to ask someone for directions (Walsham, 2001). In China, a reliance on intuition and informal approaches to managerial decision making debilitates the effective use of management information systems (Hempel & Kwong, 2001). In Malaysia, the cultural view of computer systems as symbols of power limits their use to senior figures in authority (Walsham, 1993).

Since effective usage of IT is important for economic advancement in developing countries and the delivery of benefits from IT deployment in organizations, and IT usage is clearly affected by local cultural conditions, it is important to develop an understanding of the factors that drive local usage in order to benefit from global information systems. Quantitative and qualitative models are needed which are transferable between

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