Chapter 5.5

# Factors Influencing the Use of Decision Support Tools of Enterprise Resource Planning Systems

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## ABSTRACT

Over the past few years, the marketplace and the trade press have recognized the value derived from using enterprise resource planning (ERP) systems for decision making support. However, research studies have tended to concentrate primarily on the use of ERP systems on their transactional and record-keeping aspects. This study used the technology acceptance model (TAM) to evaluate the impact of a set of individual differences (demographics, computer self efficacy, and knowledge of the system), system characteristics (relevance, terminology and screen design), and perceived benefits of the system, on the intentions to use ERP systems for decision support. A field study was used to collect data from managers working in Bahraini enterprises that use ERP systems. The results in-dicate that individual differences concerning age, gender, level of education, and even computer self efficacy did not influence intentions of using the decision tools of ERP systems. The only individual difference that showed significant influence is the degree of knowledge of the system. In addition, both perceived shared benefits and system characteristics had significant influence on the intention to use the system for decision support tasks, through perceived ease of use and perceived usefulness. The chapt4er discusses the implications of these findings and ends with possible extensions of the study.

## INTRODUCTION

Over the past decade, organizations around the world have spent billions of dollars implementing enterprise resource planning (ERP) systems. Motives of adopters of ERP systems have focused pri-

marily on revolutionalizing transactions handling by improving business processes and integrating operations and data. The current generation of ERP packages holds the promise of improving online analytical capabilities to enhance the organization's business intelligence as well.

ERP systems could be defined as comprehensive software packages that seek to integrate the complete range of business processes and functions in order to present a holistic view of the business from a single information and information technology architecture (Gable, 1998). Implementing an ERP system is a costly and risky project. The cost of a full implementation in a large international organization can easily exceed $100 million. A recent survey of 63 companies – with annual revenues ranging from $12 million to $63 billion –indicated that ERP projects cost $10.6 millions and take 23 months in average to complete (Umble & Umble, 2002). Moreover, their implementation environments are often very complicated. They usually require large scale business process reengineering (BPR) undertakings, complex technical arrangements for integrating the core ERP technology with any existing or future software, as well as careful management of the contributions of several participants in the projects such as: functional departments, consultants, business partners, and vendors. All these requirements and more, magnify project management challenges for such projects, making them prone to implementation failure.

Despite these challenges, investments in these systems are increasing, making the ERP software one of the fastest growing markets in the software business. In the nineties some statistics projected its eventual market size to be around $1 trillion by the year 2010 (Bingi et al., 1999). Moreover, expectations for keeping these interests in ERP investments are even bigger in the 2000s. This is because, though they were originally developed and implemented for transactional aspects, a growing need to use these systems for decision support

has recently become clear Lately, these software packages are incorporating decision support tools in order to take advantage of data storage, access, scrubbing, and integration capabilities facilitated by ERP systems (Turban et al., 2005). On the other hand, the confluence of ERP and decision support technology has begun to draw the attention of the academia as well (Shafiei and Sundaram, 2004). Obviously ERP vendors, implementers, and researchers need to understand the factors that affect their usability. Based on this need, this paper's main objective is to identify the main contextual variables that influence the acceptance of decision support tools of ERP systems. Three groups of variables were introduced in our theoretical model: individual differences, perceived shared beliefs of the decision support benefits of these systems, and system characteristics.

Section 2 of this paper reviews prior literature on ERP and decision support. In addition, it provides a brief of TAM as the guiding basis for the theoretical framework of this research. Section 3 introduces the research model along with a discussion of the model variables. Section 4 describes the study's methodology. Section 5 reports findings on the factors that are found to be influencing the use of these systems. Section 6 concludes the study with a discussion of the main findings and suggestions for future investigations.

## LITERATURE REVIEW

### ERP and Decision Support

Very few studies have addressed issues related to incorporating ERP systems and decision support tools. This is mainly because ERP and decision support systems have independently evolved and adopted in the marketplace as well as in academia. Consequently, each subject has its own separate studies. On the other side, plenty of research efforts have been introduced for technology/information

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