



An Empirical Investigation on End-Users' Acceptance of Enterprise Systems

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ABSTRACT

Despite the huge investments by organizations in ERP implementation, maintenance, and user training, ERP implementation failures and less-than-satisfactory productivity improvements are common. End-users' reluctance or unwillingness to adopt or use the newly implemented ERP system is often cited as one of the main reasons for ERP failures. To examine factors leading to the lack of end-user acceptance of ERP systems, we reviewed the literature on user adoption of IT in mandatory contexts, developed hypotheses to explain ERP user acceptance, and conducted a survey study to test the hypotheses. In particular, we examined end-users' attitudes toward system use and symbolic adoption, which refers to users' voluntary mental acceptance of a system, to understand user acceptance in the ERP context. Four cognitive constructs—perceived usefulness, perceived ease of use, perceived compatibility, and perceived fit—were hypothesized as the antecedents. The research model was tested through a survey of end-users' perceptions concerning adopting and using a newly implemented ERP system. The findings support most of our hypotheses. Specifically, perceived compatibility and perceived ease of use have both direct and indirect effects (mediated by attitude) on symbolic adoption, while perceived fit and perceived usefulness influence symbolic adoption by being fully mediated through attitude. The study provides managerial implications for organizations that are striving to engender user acceptance of newly adopted enterprise systems and applications.

Keywords: compatibility; enterprise system; ERP; fit; perceived ease of use; perceived usefulness; symbolic adoption; user acceptance.

INTRODUCTION

Organizations are facing constant challenges in sustaining and gaining competitive advantage through adopting new information technologies, such as Enterprise Resource Planning (ERP) software. ERP systems provide an integrated enterprise-wide business solution to organizations to help achieve their competitive goals. By 2000, the ERP revolution generated over

\$20 billion in annual revenues for ERP suppliers, and an additional \$20 billion for consulting firms (Willcocks & Sykes, 2000). Despite the huge investments by organizations, there are many cases of implementation failures and less-than-satisfactory productivity improvements (see Davenport, 1998). One of the commonly cited reasons for ERP failures is end-users' reluctance or unwillingness to adopt or use the newly implemented ERP system (Barker &

Frolick, 2003; Krasner, 2000; Scott & Vessey, 2002; Umble & Umble, 2002; Wah, 2000). The lack of user acceptance can lead to rote rather than sophisticated use of the system and disgruntled morale problems in the organization. Therefore, a good understanding of end-users' acceptance of ERP systems is vital to ERP implementation success. A literature review of past ERP studies indicates that few studies have investigated end-users' acceptance of ERP systems. As large software packages gain popularity in organizations, this problem may become more acute over time. By drawing on established theories and empirical findings in information technology (IT) adoption to study factors influencing end-users' attitudes and acceptance of ERP systems, we attempt to fill this void in the literature and enhance the cumulative knowledge on ERP success. Specifically, we are interested in examining how end-users' cognitive considerations of the characteristics of an ERP system affect their attitude and voluntary mental acceptance of the system.

Our paper is organized as follows. First, we discuss the two main research approaches used in ERP studies and justify the approach used in this study. Then, we review the dominant IT adoption theories and studies that have examined users' acceptance in both voluntary and mandatory contexts, and discuss how they apply in the ERP context. Based on the relevant literature and theoretical foundation, we develop the hypotheses for this research. Through a survey of end-users' perceptions concerning adopting and using a newly implemented ERP system, we test the research hypotheses and discuss the implications of the results. The paper concludes with a discussion of the limitations and future research directions.

LITERATURE REVIEW

Enterprise Resource Planning (ERP)

An ERP system can be viewed as an enterprise-wide information system that integrates all aspects of a business. At the core of an ERP system is "a single comprehensive database, which collects data from and feeds data into modular applications supporting virtually all of a company's business activities—across functions, across business units, across the world" (Davenport, 1998, p. 123). In other words, the information associated with individual modules of ERP software is stored in a central database so that transactions or changes taking place in one module will automatically "trigger" related changes in other modules, and multiple departments throughout the organization can access the same data. Bingi, Sharma, and Godla (1999) and Nadkarni and Nah (2003) identified the main reasons companies adopt and implement ERP systems: integration of far-flung outposts of a company, sharing of information in a standard format across departments, replacement for legacy systems, and need for business process redesign.

The concept of ERP has emerged since the 1980s when large corporations implemented enterprise systems to integrate their internal functions. Research exists on a wide variety of subjects related to ERP systems, from decisions to implement such systems to choosing the software package, and the management, organizational, and technical issues in actual implementation, post-implementation, and beyond (Nah, Faja, & Cata, 2001). Researchers have also analyzed an assortment of impacts of the implementation process. Some general areas of focus include financial impacts,

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