

# Chapter 1

## Extending the Technology Acceptance Model to Investigate the Utilization of ERP Systems

**Samar Mouakket**  
*University of Sharjah, UAE*

### ABSTRACT

*The implementation of Enterprise Resource Planning (ERP) systems has grown rapidly, but limited research has been conducted to investigate the utilization of ERP systems. By extending the Technology Acceptance Model, this paper provides a research model for examining the impact of computer self-efficacy and ERP systems design features on the utilization of ERP systems. To test the proposed research model, data are collected through a questionnaire survey distributed among employees in different organizations that have implemented an ERP system in the United Arab Emirates. Structural equation modeling techniques are used in this study to verify the causal relationships between the variables. The results strongly support the extended TAM in understanding employees' utilization of ERP systems. The implications of this study and further research opportunities are also discussed.*

### INTRODUCTION

The implementation of Enterprise Resource Planning (ERP) systems by organizations has grown rapidly world-wide in recent years in the aim of achieving better business performance and sustaining competitive advantages (Mabert et al.,

2000; Van Everdingen et al., 2000; Olhager & Selldin, 2003; Lin et al., 2006). An ERP system is an integrated set of software packages that help organizations integrate their information flow and business processes by using a single database that collects and stores data with a standardized user interface (Gable, 1998; Aladwani, 2001; Abdinnour-Helm et al., 2003; Shih, 2006; Osei-Bryson et al., 2008). ERP systems can benefit organizations in

DOI: 10.4018/978-1-4666-1761-2.ch001

different ways such as enabling faster information transactions, increasing productivity, maintaining tightened supply chain links, reducing inventory costs, improving business processes, and increasing customer responsiveness (Li, 1999; Davenport, 2000; Abdinnour-Helm et al., 2003; Umble et al., 2003; Calisir & Calisir, 2004).

Despite the growth in ERP system implementation, research shows a growing dissatisfaction with ERP systems arguing that they have failed to deliver the anticipated benefits (Holland, et al., 1998; Gable, et al., 1998, Bingi et al., 1999). ERP systems are found to be difficult to learn and use, very costly, and time consuming to implement (Davenport, 1998; Mabert et al, 2000; Bagchi et al., 2003). These findings show that research in the different factors that enable a successful adoption of this type of information systems is very essential.

Researchers have developed different models to study users' perception of information systems (IS). One of the most frequently employed models is the Technology Acceptance Model (TAM) (Davis, 1989), which is an adaptation of the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) but with more focus on user acceptance of information systems (IS). Because a considerable body of work on IS acceptance and adoption has been conducted as a result of TAM, it has become an important model when investigating user acceptance of a new information technology (Adams et al., 1992; Taylor & Todd, 1995; Yi & Hwang, 2003; Bueno & Salmeron, 2008; Hernandez et al., 2008; Hamner & Qazi, 2009).

TAM posits that perceived ease of use of a technology (PEOU) and perceived usefulness (PU) determine a person's behavior towards the technology. But PEOU and PU are also influenced by exogenous variables, which vary according to the context. Thus, Davis (1989) and later Davis (1993) have suggested adding exogenous variables to TAM as a way of improving the original model. Accordingly, the main objective of this research is

to investigate the influence of exogenous variables on TAM and IS acceptance.

In this paper, we are extending TAM to investigate employees' utilization of ERP systems in the United Arab Emirates (UAE). In our proposed model, computer self-efficacy (CSE) and ERP systems design features affect perceived usefulness and perceived ease of use, which in turn affect ERP system utilization. The goal of this paper is to explore these relationships to determine whether the addition of CSE and ERP systems design features to the TAM increases its predictive or explanatory power.

Although the rate of ERP implementation failure has been rather high (Amaoko-Gyampah & Salam, 2004; Chang et al., 2008; Bueno & Salmeron, 2008; Youngberg et al., 2009), IS researchers have paid little attention to this technology. Thus, we feel that research into employees' utilization of ERP systems should be investigated and studied further. In addition, most published research conducted on ERP systems has been undertaken in America and western countries with limited knowledge of ERP system utilization in the Gulf region, particularly in the UAE. In fact, we believe that our research is the only one attempting to investigate the utilization of ERP systems in the UAE, and we hope the findings will contribute to the body of knowledge in that specific area.

The remainder of the paper is organized as follows: The second section summarizes previous research on ERP systems. The third section proposes the research model and presents the hypotheses. The fourth section introduces the research methodology to be used in this work, the analysis of the data collected and the results reached. The data has been analyzed using structural equation modeling (SEM) to evaluate the strength of the hypothesized relationship. The conclusion and practical implications of the research are presented in the fifth section. The article concludes with presenting the limitations and directions for further research.

16 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/extending-technology-acceptance-model-investigate/66566](http://www.igi-global.com/chapter/extending-technology-acceptance-model-investigate/66566)

## Related Content

---

### **Making Sense of e-HRM: Transformation, Technology and Power Relations**

Steve Foster (2011). *Enterprise Information Systems: Concepts, Methodologies, Tools and Applications* (pp. 250-266).

[www.irma-international.org/chapter/making-sense-hrm/48547](http://www.irma-international.org/chapter/making-sense-hrm/48547)

### **Mechanism Analysis and Empirical Test of Digital Economy Empowering High-Quality Agricultural Development**

Lidong Wang, Han Wang and Xin Zhang (2026). *International Journal of Enterprise Information Systems* (pp. 1-30).

[www.irma-international.org/article/mechanism-analysis-and-empirical-test-of-digital-economy-empowering-high-quality-agricultural-development/400910](http://www.irma-international.org/article/mechanism-analysis-and-empirical-test-of-digital-economy-empowering-high-quality-agricultural-development/400910)

### **Time, Attitude, and User Participation: How Prior Events Determine User Attitudes in ERP Implementation**

(2010). *Organizational Advancements through Enterprise Information Systems: Emerging Applications and Developments* (pp. 80-98).

[www.irma-international.org/chapter/time-attitude-user-participation/41821](http://www.irma-international.org/chapter/time-attitude-user-participation/41821)

### **A Decision Support System for Selecting Secure Web Services**

Khaled M. Khan (2011). *Enterprise Information Systems: Concepts, Methodologies, Tools and Applications* (pp. 1113-1120).

[www.irma-international.org/chapter/decision-support-system-selecting-secure/48601](http://www.irma-international.org/chapter/decision-support-system-selecting-secure/48601)

### **Consequences and Strategic Implications of Networked Enterprise and Human Resources**

Ana Isabel Jiménez-Zarco, María Pilar Martínez-Ruiz and Óscar González-Benito (2011). *Enterprise Information Systems: Concepts, Methodologies, Tools and Applications* (pp. 1730-1737).

[www.irma-international.org/chapter/consequences-strategic-implications-networked-enterprise/48640](http://www.irma-international.org/chapter/consequences-strategic-implications-networked-enterprise/48640)