Can Organizational Structure Influence ERP Success?

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ABSTRACT

Implementing enterprise resource planning systems is a sophisticated, lengthy and costly process which tends to face serious failure. Though many contributing factors have been cited in the literature, the authors argue that the integrated nature of ERP systems, which generally requires an organization to adopt standardized business processes reflected in the software, is one of the key factors contributing to these failures. The integration and standardization imposed by most ERP systems may not be suitable for all types of organizational structures and it seems that some characteristics in organizational structures affect the likelihood of implementation success or failure. Based on the theory of organizational structure, this paper analyzes how the traditional variables which define a firm’s organizational structure such as formalization, complexity, and centralization along with two variables of size and CIO position in an organization influence ERP projects success. The paper tests five hypotheses using a sample of 203 Iranian cases. The results show that all of the research variables on organizational structure exert a positive influence on ERP success which confirms all the research hypotheses.

Keywords: Centralization, CIO Position, Complexity, ERP Success, Formalization, Organizational Size, Organizational Structure

INTRODUCTION

Enterprise Resource Planning (ERP) systems are defined as a configurable off-the-shelf software package, an integrated set of systems and information resources to coordinate a wide range of operational and management activities such as procurement and accounting (Davenport, 1998). ERPs are the foundation of most enterprise information infrastructures today which has greatly reduced the number of applications required to track and share information among cross functional business processes (Sherer, 2010). These systems have been increasingly adopted by organizations across various industries in both developed and developing countries. Organizations implement ERPs to enhance both operational efficiency

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and business efficacy (Gattiker & Goodhue, 2005; Ke & Wei, 2008; Wang & Chen, 2006). It improves operational efficiency by integrating business processes and providing better access to integrated data across the entire enterprise while a company that wishes to enhance its efficacy may redesign its business practices by using the best practices embedded in the ERP (Chou & Chang, 2008; Davenport, 1998).

Although ERP systems can bring benefits for organizations, the high failure rate is a major concern (Davenport, 1998). The failure rate of ERP implementations has been estimated at between 60% and 90% (Kwahk & Lee, 2008). These projects are, on average, 178% over budget, took 2.5 times longer than intended and delivered only 30% of the promised benefit (Zhang, Lee, Huang, Zhang, & Huang, 2005).

Other research findings indicate that organizations do not always achieve their desired level from their ERP investments (McDonald, 2009; Rouhani & Zare Ravasan, 2013). These statistics imply that ERP projects are one of the most difficult system development projects. They are quite complex projects and often require fundamental organizational changes. To avoid such costly failures and help organizations take more advantage of their system implementation, a great deal of effort has been done by researchers. Some researchers have provided valuable insights into the process of ERP implementation (e.g. Soja, 2008; Subramanianh & Hoffers, 2005; Wang, Shih, Jiang, & Klein, 2008) and others identified a variety of critical factors influencing the success or failure of the system (e.g. Nah & Delgado, 2006; Singh & Khamba, 2010; Zhang, et al., 2005). One of the main factors identified in the literature as an influencing factor on ERP success and failure is organizational structure (Amid, Moalagh, & Zare Ravasan, 2012; Ifinedo & Nahar, 2009; Morton & Hu, 2008). Organizational structure plays a key role in project implementation success, because it can facilitate the coordination of all the elements inside the organization so that the organization can fulfill its objectives (Mintzberg, 1979). Despite this importance, there isn’t much research on empirically studying such effect in ERP projects.

Ifinedo and Nahar (2009) in their work tried to examine the impact of some organizational information technology (IT) factors (i.e. IT assets, employees’ IT skills, IT resources, and satisfaction with legacy IT systems) and their interacting effects with two contingency factors (i.e. organization’s size and structure) on ERP system success. Their analysis supported that organization’s size and structure had moderation effect in some of the relationships. In another work, Morton and Hu (2008) developed a set of propositions about the relationships between the characteristics of ERP systems and the dimensions of organizational structure based on structural contingency theory and Mintzberg’s (1979) ideal structural types of organization. However, they did not empirically test the proposed relationships.

However, few researchers have empirically addressed the influence of organizational structure on ERP success. We argue that it is important for both researchers and practitioners to understand what structural dimensions and to which degree influence on ERP success. Meanwhile, the purpose of the study reported herein is to analyze how the variables defining the structure of an organization influence ERP projects success. In this study, authors focused on the centralization, complexity, and formalization aspects, which are believed to be adequate for assessing technology-structure relationships (Donaldson, 2001). In addition, the influences of organization size and CIO position in an organization have been studied here.

**ERP SUCCESS ASSESSMENT**

ERP has been stated as the new information systems (ISs) paradigm (Klaus, Rosemann, & Gable, 2000). ERP success models are drawn out from information systems success assessment frameworks. The most famous model that emerges from IS success research projects is Delone and McLean (1992) model (D&M model). Delone and McLean (1992) introduced
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