The Moderating Effect of Employee Computer Self-Efficacy on the Relationship between ERP Competence Constructs and ERP Effectiveness

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ABSTRACT

The present study examines the role that employee self-efficacy fulfills in ERP effectiveness. For this examination, the study uses data from 116 key users from different companies with ERP-implementation experience in Taiwan. Results suggest that ERP training and learning significantly improved ERP Effectiveness. However, regarding improved business performance, respondents with 'high' ERP-training competence had higher employee computer self-efficacy scores than respondents with 'low' ERP-training competence. Regarding improved integrated business resources, respondents with 'high' strategic IT-planning competence had higher employee computer self-efficacy scores than respondents with 'low' strategic IT-planning competence. The study identifies implications of employee computer self-efficacy for ERP implementation. Researchers should explore this topic to improve the future success of ERP systems in organizations. The main result (the moderating role of computer self-efficacy) is a potentially valuable contribution to theory and practice. [Article copies are available for purchase from InfoSci-on-Demand.com]

Keywords: Competence; Computer Self-Efficacy; Enterprise Resource Planning (ERP)

INTRODUCTION

Enterprise resource planning (ERP) systems constitute one of the enterprise information systems employed by an organization to integrate its operation processes across multiple functions and to produce reliable processing of information (Kumar & Van...
Hillegersberg, 2000, p. 22; O’Leary, 2000). Since the 1990s, the popular press has been reporting not only how corporations have experienced both success and failure in ERP implementations but also the benefits, complexities, and risks of ERP systems (Tsai, Chien, Hsu, & Leu, 2005; Wright & Wright, 2002). Among the many elements that may affect ERP outcomes, three major IS implementation components have been identified as having a substantive impact on ERP implementation: the project organization, the information system, and the system’s supporters (Pan, et al., 2008). In recent years, there has been a growing consensus that good IS-implementation components do not necessarily lead to ERP success. Many practitioners and scholars have reached a conclusion that technical factors are not the only factors that contribute to ERP success (Benders, Hoeken, Batenburg, & Schouteten, 2006; Dery, Grant, Harley, & Wright, 2006; Grant, Harley, & Wright, 2006; Tsai et al., 2005). In fact, many IS studies indicate that failure of ERP implementation is due largely to organizational and social, rather than technical, factors (Fitzgerald & Russo, 2005). Furthermore, Chang et al. (2008) indicate that social factors are the most significant determinant affecting ERP-system use. Unlike engineering projects, ERP-implementation projects can be perceived as a type of organizational development, and an ERP-implementation project’s success may rely not only on technical aspects but on human resources, as well. In fact, there is an increasing awareness among ERP researchers and professionals that social contexts of the company and workers’ attributes are also essential factors in ERP success (Benders et al., 2006; Dery, Grant, et al., 2006; Dery, Hall, & Wailes, 2006; Grant, Harley, et al., 2006; Light & Wagner, 2006). Therefore, regarding such aspects of information-system development as acquiring or implementing ERP systems, an information system that is technically sound and whose specifications meet the requirements does not always lead to successful implementation. This is especially the case when users resist the new system or when project management is ineffective. Hence, some researchers believe that user factors rather than technical or economic factors are critical to the success of ERP projects, belief that characterizes more and more research effort in this area (Nah, et al., 2001; Alvarez & Urla, 2002).

Because ERP projects usually involve change in the work process as well as the application of a new information system, sophisticated system skills are required in these settings and the complexities of these systems usually represent a challenge to users’ knowledge structures. Therefore, the extent to which an organization implementing the ERP system has the required knowledge and skills to use the ERP system will significantly influence ERP success (Chien & Tsaur, 2007). In fact, Brynjolfsson, Hitt, and Yang (2002) found that certain organizational practices such as the increased use of skilled workers and decentralized and team-based organizational structures increased both the value of IT investments and critical role of end-users in ERP success. As ERP systems usually require that the corresponding organization motivate its employees to use the new technology system in their job, it is clear that successful ERP implementation requires expertise and extensive training of future users of the systems (Torode, 1998; Dowlatshahi, 2005). In response to this increased demand, MIS executives and academics seek to identify possible factors promoting the positive relationship between ERP implementation