The Impact Mechanisms of Psychological Learning Climate on Employees’ Innovative Use of Information Systems

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ABSTRACT

The aim of this study is to explore the impact mechanisms of psychological learning climate on employees’ innovative use of information systems (IS). Using structural equation modeling, this study develops a theoretical model to investigate how the psychological learning climate affects innovative IS use by introducing individual motivational factors as mediators. The model is tested through a survey of 163 employees using enterprise resource planning (ERP) systems in China. The results suggest that psychological learning climate is positively related to innovative IS use both directly and indirectly. The indirect effect works through motivating employees’ intrinsic motivation and creative self-efficiency. This study adds to the literature on IS use by identifying and examining the role of psychological learning climate as a driver of innovative IS use. The findings could provide managers with an understanding of how management can inspire employees’ potential in IS innovation.

KEYWORDS

Creative Self-efficiency, Information Systems, Innovative Use, Intrinsic Motivation, Perceived Usefulness, Psychological Learning Climate

INTRODUCTION

Firms have made huge investments in information systems (IS), as they expect IS to bring great economic benefits. However, research suggests that over 60% of IS implementations result in continuous underutilization, thereby failing to meet expected investment returns (Veiga et al., 2013). The main reason for this is that, in most cases, employees operate at low levels of feature use and lack an innovative feature use (Wang et al., 2014; Li et al., 2013). To address the issue of underutilization, employees are expected to use IS in novel ways to perform new tasks or existing tasks in a different way, i.e., to conduct innovative IS use (Li et al., 2013).

The functional complexity of enterprise information systems, such as enterprise resource planning (ERP), supply chain management (SCM), business intelligence (BI), and other IS, provide users with the potential to apply IS at different levels of sophistication (Wang et al., 2008). Employee users can apply a complex IS in a simple and superficial way, sticking to work procedures and requirements as prescribed by managers; alternatively, they can use the complex IS at a higher level by utilizing the technology in creative ways that go beyond routine use (Li et al., 2013). As technology and work become increasingly inseparable in modern organizations (Orlikowski and Scott, 2008), innovative
IS use has critical implications because they help improve employee productivity, generate high value-adding products and services, and ultimately enhance organizations’ competencies (Burton-Jones and Straub Jr, 2006; Hsieh et al., 2011). Innovative IS use is such a high-level usage behavior that can extract the IS value potential to support employees’ performance (Ahuja & Thatcher, 2005). Toward this end, it is urgent to explore critical antecedents of employees’ innovative IS use or the underlying mechanisms that drive the innovation process.

Although practitioners and scholars have realized that innovative IS use is important for realizing its potential benefits (Thatcher et al., 2011; Hsieh et al., 2011; Veiga et al., 2013), how to promote users’ innovative IS use is still unknown. A few IS studies have suggested that individual characteristics are key determinants of innovative use, such as personality (Schmitz et al., 2016), absorptive capacity (Wang et al., 2014), and personal innovativeness (Li et al., 2013; Wang et al., 2013; Schmitz et al., 2016). Others have argued that motivational factors have tremendous impacts on users’ innovative behaviors, such as intrinsic motivation (Li et al., 2013), self-efficiency (Wang et al., 2013; Peng et al., 2018), and perceived usefulness (Peng et al., 2018; Rezvani et al., 2017). Although academics have identified these motivational factors influencing innovative IS use, managers have had a difficult time identifying potential levers that raise users’ motivation and thus promote their innovative IS use.

Although a few IS studies have contributed useful insights into the determinants of innovative IS use (Li et al., 2013; Wang et al., 2013), it is limited by the research focusing on individual factors. The attention paid to the influence of work environmental factors on IS innovation is limited. Recent studies have begun focusing on contextual factors, examining how team climate and psychological climate (user-perceived organizational environment) influence users’ IS exploration behavior, which is a construct similar to IS innovation (Maruping & Magni, 2012; Liang et al., 2015). Climate has been identified as a critical environmental factor influencing work-related innovation in organizational contexts and thus constitute a useful perspective for understanding how climate factors can affect users’ innovation and exploration in the context of IS (Maruping & Magni, 2012). Social influence theory suggests that individuals’ immediate social environment is the most important information source that they employ to interpret and construct reality (Liang et al., 2010). Thus, this study argues that climate will inevitably influence users’ IS usage behavior. Given that innovative use is innovative in nature, psychological learning climate is defined as individual employees’ perceptions and evaluations of the work environment that values and emphasizes innovation, experimentation, and risk-taking (Edmondson, 1999; Carless, 2004; Maruping & Magni, 2012), which is one of the most relevant environmental factors that can nurture and facilitate IS exploration and innovation (Worren et al., 2002; Scott & Bruce, 1994; Liang et al., 2015). Yet, no attempt has been made to understand the impact mechanisms of psychological learning climate on IS innovation.

The objective of this study is to investigate how psychological learning climate influences innovative IS use through individual motivational factors. Drawing upon proactive motivation theory, this study develops a theoretical model to examine the impact mechanisms of psychological learning climate on innovative IS use. By pursuing the objective, our study contributes to the literature in two ways. First, this study contributes to the literature on IS use (Huang et al., 2017; Li et al., 2013; Ke et al., 2012; Wang et al., 2013; Schmitz et al., 2016; Peng et al., 2018) by identifying psychological learning climate as a critical antecedent of innovative use. This is important because until recently research on innovative use has primarily focused on individual factors (Li et al., 2013; Peng et al., 2018), but the attention paid to climate factors, especially facet-specific climates, has been limited. Second, this study adds to the limited research (Maruping & Magni, 2012; Liang et al., 2015) that has responded to calls for more research examining the environmental factors on IS innovation by unpacking the impact mechanisms of psychological learning climate on innovative IS use. Although a few scholars have highlighted the importance of climate factors on IS innovation and exploration (Liang et al., 2015; Maruping & Magni, 2012), the impact mechanisms of psychological climate on innovative use has not been answered. Our findings provide new insights into previous studies (Maruping & Magni, 2012; Liang et al., 2015) by examining the mediating roles of intrinsic motivation and creative self-efficiency on the relationship between psychological learning climate and innovative IS use.
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