

# The influence of individual differences on continuance intentions of enterprise resource planning (ERP)

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## Abstract

This study aims to investigate whether individual differences affect enterprise resource planning (ERP) users' continuance intention. In the initial stage ERP users usually lack the complete will to determine whether or not they use ERP, but their continuance intentions are not always mandatory. Thus, understanding the relationship between individual differences and continuance intention helps design an effective training program, which in turn improves the effectiveness of ERP usage. Grounded on expectation-confirmation theory (ECT), this study examined the influences of dynamic and stable individual differences on satisfaction and continuance, respectively. Dynamic individual differences include both general computer self-efficacy and computer anxiety, and personal innovativeness in information technology (IT) refers to a stable, situation-specific traits. In addition to individual differences, we also assessed the moderating effect of ERP experience. A cross-sectional survey method was used to collect data. A total of 305 useful responses were analyzed by using partial least squares (PLS). We found that all the individual differences affect continuance intention either directly or indirectly (through satisfaction). Individuals' prior experience of ERP moderates five of the relationships between individual differences and continuance intention. We also provide implications for both managers and researchers.

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## 1. Introduction

A growing number of studies are analyzing the influence of individual differences on the diffusion of information technology (IT) in the workplace. Individual differences refer to factors such as personality, situational, demographic variables that affect information system (IS) users' beliefs and behavior (Agarwal and Prasad, 1998). Evidence (Compeau and Higgins, 1995a; Thatcher and Perrewe, 2002) shows that stable situation-specific individual differences such as personal innovativeness in IT (PIIT) as well

as dynamic, situation-specific individual differences such as general computer self-efficacy (GCSE) and computer anxiety (CA) play a key role in individuals' beliefs about their use of IS. Dynamic individual differences refer to malleable dispositions that affect individuals' responses to stimuli. Stable, situation-specific traits predispose individuals to consistent response, but such traits are applicable only to narrow context or specific targets (such as using new or complex IT).

Although a large number of studies suggest that individual differences affect IS use (Compeau et al., 1999; Thatcher and Perrewe, 2002; Thatcher et al., 2007), relatively few of prior studies delineated the relationships between individual differences and enterprise resource planning (ERP) users' continuance intention. ERP users' reaction may be different from that of other types of IT users due to ERP's complexity. Using ERP systems entails

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familiarity with both ERP functions and application problem domain as ERP refers to commercial software systems that aim for providing best practices that can be integrated into the business processes (Hong and Kim, 2002; Liang et al., 2007). In addition, implementing ERP usually entails high cost, and successful ERP implementation (initial stage of ERP) does not necessarily lead to the success of ERP post-implementation (middle stage of ERP) (Rajagopal, 2002). This is so because ERP users lack complete will to determine whether they use ERP systems in the initial stage, while the decision on whether they continue using ERP and how they adapt to the distinctive features of ERP are not always mandatory. Since ERP plays a crucial role in firms' effectiveness and refers to important investment in IT, this study aims to better understand how individual differences affect ERP users' continuance intention, particularly in the post-implementation stage of ERP.

We developed a research model based on expectation-confirmation theory (ECT) (Oliver, 1980), which was used as an analytical lens to explain how individual differences affect satisfaction and intention of IS continuance. Theory suggests that situation-specific, stable traits such as PIIT affect dynamic individual differences such as CA and GCSE, which in turn lead to individuals' beliefs and behaviors (Bandura, 1997; Harrison and Rainer, 1992; Thatcher and Perrewe, 2002). Specifically, understanding how PIIT, CA, and GCSE affect ERP users' continuance intention would be of value for developing more effective ERP training programs. In addition, this study also investigates whether individuals' prior experience with ERP has a moderating effect on the relationships among individual differences and ERP continuance, because long-term usage intention such as continuance is likely to be affected by prior experience of IT usage (Bhattacharjee and Premkumar, 2004).

Survey method and partial least squares (PLS) were used for data collection and assessment of hypotheses,

respectively. The study deepens understanding of how complementary variables (dynamic versus stable individual differences) affect intention of ERP continuance. Further, we also provide insight into the relationships among dynamic, IT-specific individual differences (i.e., CA and GCSE) and stable, situation-specific traits (i.e., PIIT) in the context of ERP usage. Finally, this study helps us realize how the residual effects of ERP experience influence the relationships between individuals' differences and ERP continuance.

## 2. Theory and literature review

The theoretical model underpinning this study is presented in Fig. 1, suggesting that satisfaction and continuance intention are a function of dynamic individual differences (i.e., CA and GCSE), and stable individual differences (i.e., PIIT). The following sections elaborate on the constructs in the model and the proposed relationships among them.

### 2.1. Satisfaction and ERP users' continuance intention

Expectation-confirmation theory is widely used in the consumer behavior literature to study consumer satisfaction, post-purchase behavior (e.g., repurchase, complaining), and service marketing in general (Bhattacharjee, 2001; Oliver, 1980). According to them, the process by which consumers reach repurchase intentions in an ECT framework is as follows. First, consumers form an initial expectation of a specific product or service prior to purchase. Second, users form perceptions of a product's performance following a period of initial consumption. Third, they assess the difference between its perceived performance and their original expectations, and determine the extent of the confirmation. Fourth, users then form a satisfaction based on their confirmation level and

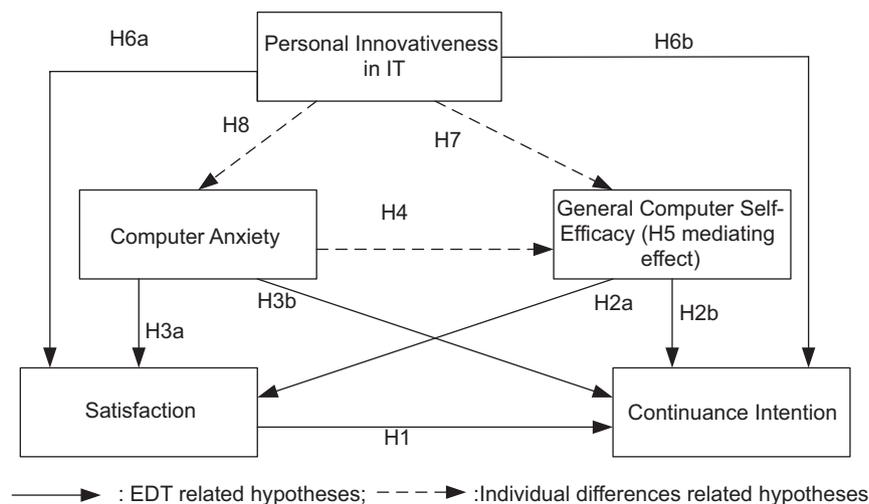


Fig. 1. Research model of continuance intention of ERP usage.

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