THE IMPACT OF READINESS FOR CHANGE ON ERP USAGE INTENTION IN SMES: EMPIRICAL EVIDENCE FROM VIETNAM

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ABSTRACT

Enterprise resource planning (ERP) implementation nowadays plays a pivotal role in the enterprises' competitiveness since it enables organization to improve the quality of decision-making systems and performance. This paper integrates organizational commitment, trust in management, communication, personal competency, individual readiness for change, and ERP usage intention into the TAM in order to explore how individual readiness for change impacts on ERP adopting intention.

Data were collected by conveniently approaching managers and staff from 10 Vietnamese SMEs which are following the Japanese style in doing business and management and currently implementing ERP adoption. The research gets back 150 valid and usable online responses out of 198 received ones. Results show that individual readiness for change takes the mediating role for the ERP usage intention for the case of Vietnamese SMEs. The study also demonstrates that communication has a positive impact on potential users' readiness while organizational commitment, trust in management, and perceived personal competence have negligible effects.

The current paper contributes by providing a comprehensive insight of the ERP implementation in Vietnam, representing emerging countries of which are in the early stages of the ERP adoption and have common characteristics of emerging and developing countries. It also offers implications for practitioners and decision-makers since it provides empirical study about the ERP implementation.

Keywords: Readiness for Change; ERP; ERP Implementation; Usage Intention; Innovation; Smes; Vietnamese Smes; TAM Model.

INTRODUCTION

Globalization with accelerated customer expectations and complex supply chains exert pressure on organizations to continuously enhance effectiveness and efficiency. The study of Tajpour et al. (2020) shows that the efforts to modernize, improve and apply various aspects of innovation will be reflected on the success of an organization. There is a high probability for any organization pioneering in innovation by adopting technology-oriented solutions to be awarded

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from globalization, regardless of its scale of business or country of origin (Radovic-Markovic et al., 2019). As in-house information sharing creates prerequisites for achieving these objectives, the enterprise resources planning system (ERP) is considered as the pivotal innovative countermeasure that enables organization to integrate business processes based on a shared database, making ERP become an important management tool.

Gattiker & Goodhue (2005) classified the benefits of ERP into intermediate and overall effects. In terms of the former, ERP enhances the linkages among business functions by allowing an approach to common information resources in a convenient and real-time manner (Marnewick & Labuschagne, 2005; Shih, 2006). In the long run, ERP improves business efficiency and innovation by assisting better decision-making in response to both internal and external changes (Al-Mashari & Al-Mudimigh, 2003). Recently, ERP system is increasingly popular in the SMEs sector as ERP vendors introduce SME-friendly solutions. In the context of industrial revolution, Cloud ERP is considered as an alternative to the conventional ERP. Alsharari et al. (2020) find that Cloud ERP plays a critical part contributing to the success of organizations and the quality of their decision-making process.

Despite the promising benefits of an innovative management system, ERP projects experience a high failure rate (Davenport, 1998) that leads to disruption as well as an enormous waste of financial and human resources (Gargeya & Brady, 2005). Discussions on the inability to maximize ERP benefits have indicated that the major challenge to ERP adoption comes from users' resistance to change rather than technology (Haddara & Moen, 2017). Similar to other information systems, the benefits from a technically successful ERP installation can hardly be obtained if users lack the willingness and skills to utilize it. In other words, understanding the individual readiness for change positively assists the successful ERP adoption (Kwahk & Lee, 2008).

Many previous studies analyzed user acceptance upon ERP introduction (Brown et al., 2002; Nah et al., 2004). However, they mainly focused on large enterprises while SMEs contexts were not specifically concerned (Haddara & Zach, 2011). Findings of ERP implementation based on large company conditions are hardly applicable to SMEs because of distinctions between the two environments (Mabert et al., 2003). This unfulfilled academic gap is an obstacle against the increasing popularity of ERP system among SMEs, a dominating part of any economy that accounts for approximately 99% and 96% of all businesses in the EU and Asia (European Commission, 2017).

This study is meaningful since Vietnam, as the pilot country in this research, has common characteristics of emerging countries fundamentally supporting the industry innovation and revolution of domestic enterprises towards sustained competitiveness and global integration. Therefore, result findings and its implications contribute to the literature of technology innovation for the emerging countries.

At first glance, Vietnam, as other Asian emerging and developing countries, has achieved the substantial economic and social development in the past decades. The country notably witnesses its GDP growth rate surging at a respective 7.1%, 7.0 %, and a positive 2.9%, from 2018 to 2020, which demonstrates Vietnam as a destination for foreign investment inflows in recent years. Vietnamese SMEs achieve outperforming results and play an increasingly important role in economy growth since Viet Nam is well positioned to be Asia’s new manufacturing center, particularly in the electrical and electronic sector (PwC 2019).

Second, under the context of global integration, Vietnam gradually liberalizes its economy by relaxing on foreign investment barriers that promotes a remarkable inflow of

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foreign investments, including portfolio and direct investments. In addition, the act of loosening the cap of holding local shares and stakes from non-financial companies is considered as one factor recently fostering merge and acquisition activities in Vietnam (Batten & Vo, 2009; Vo, 2018). These movements bring Vietnamese enterprises great benefits as they are now more interconnected with global economy as a global value chain (Vo & Nguyen 2018). Moreover, Vietnamese enterprises also gain positive spillover effects from foreign stake-holders in terms of managerial quality and organization competitiveness as preliminarily studied by OECD (2021) and Le (2017).

Third, as other emerging and developing countries joining integration and technology revolution, Vietnamese enterprises are turning to technology for innovation and product improvements. However, the adoption of complex and large IT system like ERP is still moderate and small (OECD, 2021).

In such the context, this study has three objectives. First, we examine the dimensions affecting ERP implementation in Vietnamese SMEs. Second, we analyze how Vietnamese enterprises' internal attributes of its commitment, trust in management, communication, and personal competency impact on individual readiness for change for ERP implementation. Third, the finding results enable us to discuss and give implications. Therefore, this paper provides a comprehensive insight of Vietnamese SMEs' ERP implementation. The study demonstrates that individual readiness for change takes an intermediate role in the ERP usage intention through factors of TAM, which are perceived usefulness and perceived ease of use. Among factors affecting the change readiness of employees, only communication is found to have a positive effect. The other three factors, including organizational commitment, trust in management, and perceived personal competence have a negligible effect on employees' readiness for change. The finding is meaningful as it offers implications for practitioners and decision-makers.

The remainder of this paper is as follows. The section 2 presents literature review meanwhile the section 3 focuses about the research methodology. Section 4 demonstrates the empirical test results and Section 5 discusses about its results and examines the implications. Section 6 describes the conclusion, limitation remarks.

LITERATURE REVIEW

Concepts of SMEs

The definition of small and medium enterprises varies according to countries and period. Based on different business sectors and levels of economic development, company classification relies on the common criteria of employee number, net assets, sales, investment (Ayyagari et al., 2007). The following Table 1 illustrates the inconsistent SMEs definitions among some Asian countries.

TABLE 1
SMES DEFINITIONS OF SOME ASIAN COUNTRIES

Country	Definition	Source

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Cambodia	• Small enterprises: Employ between 11 and 50 employees and have fixed assets of $50,000 to $250,000 • Medium enterprises: Employ between 51- 200 employees and fixed assets of $250,000 to $500,000	Baily, 2018
Malaysia	Depends on the business sector	Secretariat to National SME Development Council, 2005
Japan	Depending on the business sector, SMEs are defined according to capital or number or regular worker	Anshin Immigration & Social Security, 2020

Although definitions vary, SMEs around the globe share universal dominance in all economies (OECD, 2017). Considered as the main engine for growth, this sector contributes enormously to employment and GDP output. OECD report summarized that SMEs made up around 99% of all business registrations and employed 70% of jobs in OECD countries. In the EU, SMEs also contribute more than 66% of employment and around 57% of total value added (Rotar et al., 2019). Besides, the relationships between SMEs and other economic entities form a flexible and interconnected business network in the long run. Given both direct and long-term benefits, investment in SMEs is strategically indispensable to economic development.

Recent literature, including both theoretical and empirical research, demonstrates that the SMEs growth, performance, competitiveness are significantly impacted by bulk of organizational model (Radovic-Markovic et al. 2019), business model (Slamzadeh, 2018), industry and its internal resources, including finance, employees' trust, commitment, technology innovative and competitive platform (Tajpour et al., 2021; Tajpour & Hosseini, 2021; Ziyae et al., 2021; Athanasoglou et al., 2006). These factors are considered as the driving forces enabling SMEs to foster their efficiencies and competitiveness in economies. However, among studies' findings, technological process innovation is found to be a critical driver for any organization performance, including public services (Oksanen & Rilla, 2009; Tajpour et al., 2020).

Smes and ERP Implementation

Based on our literature review, the characteristics of SMEs that influence ERP implementation can be categorized into three dimensions of structure, resources, and IT infrastructure. SMEs' conditions are significantly different from that of large companies, thus, the existing literature about ERP implementation applicable to large companies' environments is hardly transferable to the SME landscape.

Structure

SMEs have a flatter and less complex managerial structure compared to large companies. Besides, the diversity of SMEs business models, including various aspects of industry, organizational models, scale, market, innovation platform, human employment, and internal resources and how the firm's performance are impacted by such factors have been recently researched (Koev et al., 2020; Tajpour et al., 2021; Tajpour & Hosseini, 2021; Ziyae, 2021; Salamzadeh, 2018). Accordingly, the informal structure of SMEs leads to lower specialization of

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jobs and fewer layers of middle management where each employee usually performs a wider range of tasks (Yew Wong & Aspinwall, 2004). The managers in SMEs are usually company owners. They are involved in daily business activities and have an enormous influence on the company. Decision-making in SMEs are centralized and usually short-term since the focus on daily operation spares top managers less time for reflection and strategic planning. These structural conditions create more flexibility for change, however, increase risks during the change process because short-term strategies tend to encounter unexpected issues.

Resources

Since accessing to finance is considered as a key constraint to SMEs in emerging and developing countries as evidenced by Athanasoglou et al. (2006) and Nassr et al. (2016), financial and human constraints are considered as the main barriers to ERP implementation in SMEs. The lack of human resources in SMEs implies difficulties in establishing a specialized ERP project team. Despite the urge for skills upgrading among employees, the limited budget hinders the employee training process. Knowledge sharing, reputation, social relations and identity also have a positive effect on performance of digital start-ups mediated by social media Tajpour & Hosseini, 2021). Moreover, consulting support is hardly affordable for SMEs (Nassr et al., 2016), which further raises challenges in dealing with unexpected issues throughout the ERP implementation process. Overall, insufficient resources in SMEs may hinder the project's success due to the costly, risky and lengthy nature of ERP implementation.

Culture

Culture in SMEs are more unified and highly influenced by the personality of the owner or top managers (Skoumpopoulou & Moss, 2018). A less complex structure and increased cross-functional exchanges foster employees' understanding of the business purpose as well as any updates in the working process. Therefore, SMEs are usually more receptive to changes and their change management is usually less complicated compared to large enterprises. The recent study of Skoumpopoulou & Moss (2018) indicates that cultural change led to enhanced communication, leadership and a sense of coherency across the whole organisation, hence, ERP implementation would become more reality with corporate culture improved rather than an ideal.

IT Infrastructure and Innovation Platform

SMEs hardly have a separate, formal in-house IT department. Their IT function is at the early stage without sufficient technical expertise to evaluate and lead the ERP adoption process (Shiau et al., 2009; Chang et al., 2010). Besides, innovation platform, including technological process innovation and more R&D, and provider's professionalism (Alsharari et al., 2020; Tajpour et al., 2020; Oksanen & Rilla, 2009; Koev et al., 2020; Vujicic et al., 2013) are considered as the driving forces for boosting up ERP implementation, hence, its organization's performance. Therefore, the reliance on ERP vendors and packaged software solutions are higher in SMEs than in large companies. This dependence increases risks during ERP implementation

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since pop-up situations such as miscommunication between ERP vendors and the host company severely affect ERP success.

Vietnamese SMEs share several common characteristics with SMEs in other countries, thus suffering from similar problems of resources, time, and IT expertise (Le, 2017). The average company size is relatively small with around 50 employees, which creates human constraints during ERP implementing projects. Financial obstacles are also noteworthy in the current business landscape since Vietnamese SMEs are usually under-capitalized and face difficulties in approaching capital sources (Vo, et al., 2011). This result is consistent with the finding of Athanasoglou et al. (2006) for the case of Athens Exchange companies. As a result, the costs of ERP packages and consulting services to assist the underdeveloped IT expertise to become extraordinarily unaffordable to the majority of SMEs in Vietnam.

Despite the resource insufficiency, culture and simple work procedures in Vietnamese SMEs support the change process upon the introduction of ERP. The company owners also exert critical influences on Vietnamese SMEs' performance and culture. Communication is flexible and informal among employees, therefore, ERP can be easily introduced to the workplace after proper technical training and supportive communication during the go-live stage. Since the current working procedures in SMEs are simpler than in large companies, SMEs can easily modify their current working process to align with changes caused by ERP systems.

Technology Acceptance Model

In exploring the determinants of new information technology (IT) acceptance and usage, several theoretical models have been used by various researchers (Huy et al., 2019; Nguyen, 2020). These are the theory of planned behavior (TPB) (Ajzen, 1991), and the theory of the technology acceptance model (TAM) (Davis et al., 1989). Among those models, TAM is believed to be a leading model to deal with behavioral intention and usage of IT, so that it has been cited in most of the research related to user acceptance of the technology. Consequently, the primary underlying model for this research is the technology acceptance model (TAM), which was an adaptation of TRA. According to Amoako-Gyampah (2007), TRA is developed with the purpose "to provide a basis for tracing the impact of external factors on internal beliefs, attitudes, and intention" and explains that, "a person's action is a function of that person's behavioral intention" to use IT, which plays a major role in indicating the factors affecting actual usage. Adapted from TRA and first proposed by Davis (1986), TAM is a specific model to explain and predict users' technology usage behavior.

TAM is developed with perceived usefulness (PU) and perceived ease of use (PEU) - the two primary relevant determinants for computer acceptance behavior (Davis et al., 1989). Davis (1986) defines PU as "the degree to which a person believes that using a particular system would enhance his or her job performance.", which can be understood that in an organizational environment, the higher the level of expectation on the effectiveness of technology that people have, the greater their intention to use technology. Davis (1986) also defines ease of use as ''the degree to which a person believes that using a particular system would be free of effort.'', which means the easier it is to use technology, the greater the expected benefits from the technology concerning performance progress. The two central hypotheses in TAM posit that PU and PEOU positively influence an individual's attitude towards using a new technology, which in turn leaves an impact on his/her behavioral intention to use it. Finally, the intention is positively related to actual usage.

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Multiple recent research efforts have been contributed toward the extensions to the theory of TAM. Even though TAM has been the underlying model for many studies in information systems research, a review of past ERP studies regarding TAM indicates that few studies have investigated ERP user acceptance and usage, and only a small number of articles have been published. As several studies (Nah et al., 2004; Umble et al., 2002) have revealed, a common reason for ERP failures can be attributed to users' reluctance and unwillingness to adapt and use the implemented ERP system. A better understanding of the factors leading to ERP users' acceptance of ERP systems is necessary to facilitate successful ERP usage (Grandón et al., 2021; Nah et al., 2004).

In the current study, we aim to identify factors leading users to better use their ERP system. However, it is suggested that even though Perceived Usefulness (PU) and Perceived Ease of Use (PEU) of TAM are significant indicators, they do not individually explain attitude and intention. Thus, the goal of our research is to incorporate TAM into a broader framework to take into consideration the correlation of some other human and organizational factors. Particularly, we focus on the readiness for change factors to explore the in-depth relationship that leaves an impact on user behavior and intention. Studying the influence of external factors on constructs not only contributes to theory development but also helps in designing interventional programs for organizations.

Readiness for Change

Prior research on critical success factors of ERP implementation highlighted the importance of change readiness or change management. ERP systems are incompatible with the existing infrastructure, culture, and daily operation. Thus, the use of ERP system after software installation requires organizational efforts rather than just attempts from the IT department to realign processes (Umble et al., 2003; Finney & Corbett, 2007; Saade & Nijher, 2016). Change management during ERP implementation includes training employees about the benefits and necessary skills to use ERP system (Žabjek et al., 2009; Upadhyay et al., 2011; Rajan & Baral, 2015; Alsharari et al., 2020). Along with individual preparation, readiness for change positively correlates with the receptive level of the organizational culture resulting from the redesign of business processes (Skoumpopoulou & Moss, 2018; Schniederjans & Yadav, 2013).

Readiness for change is the ultimate goal of change management, which refers to the change commitment and belief in the change capability shared by organizational members (Weiner, 2009). In other words, members participate more actively and effectively during the change process if they hold positive perceptions about the value and their ability to change. The extent to which users value the benefits of ERP and are confident in the collective organizational ability to change determines the uncertainty and readiness levels surrounding changes. Therefore, change readiness of individual ERP users is a mitigator for user resistance, thus reducing the inability to achieve the intended level of usage.

Managers, leaders, and professionals in the organization must identify how to create readiness for change to motivate and prepare employees for organizational change (Cummings & Worley, 2014). In this study, we investigate four antecedents of readiness for change: organizational commitment, trust in management, communication, and perceived personal competence.

Organizational commitment

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Zangaro (2001) defines organizational commitment as "the act of pledging or promising to fulfill an obligation to someone or something at a future date". Moreover, previous studies state that organizational commitment is a multidimensional construct (Meyer & Allen, 1991). Meyer & Allen (1991) and can be interpreted in various ways. One of the most dominant models of workplace commitment is Meyer & Allen's (1991) three-component model of organizational commitment. They categorized organizational commitment into three dimensions: affective commitment, continuance commitment, and normative commitment. The affective commitment refers to the individual emotional attachment to the organization. The continuance commitment is associated with the perceived cost of leaving the organization. Lastly, normative commitment is the employees' feelings of obligation to stay with the organization.

Meanwhile Cook & Wall (1980) assert that organizational commitment comprises of three primary components:

Identification

This refers to the extent to which employees feel connected and proud of their organization.

Involvement

This is how employees perceive and think of their contribution to the organization, as well as their willingness to exert effort on behalf of the organization.

Loyalty

This evaluates the intention of employees to leave the organization, especially when another firm offers better benefits.

Preliminary researches demonstrate that organizational commitment indirectly influences the readiness for change through organizational support, job satisfaction, job involvement, and loyalty (Yoon & Thye, 2002; von Treuer, 2018).

Trust in Management

Trust is defined as a person's inclination to depend on another entity (Mayer et al., 1995). In the organizational context, trust in management is the employee's inclination to follow and support the behavior or actions of his/her leader or organization (Mayer et al., 1995). Weber and Weber (2001) define trust in management as "the psychological contract established between individuals and organizations based on the message an employee receives regarding organizational expectations and employee perceptions of desired managerial actions".

Trust in management is proven to link to positive outcomes such as organizational commitment and job satisfaction (Dirks & Ferrin, 2002). Additionally, employee trust plays a vital role in ensuring employees' cooperation (Ahmad et al., 2017). To be specific, employees with high levels of trust will find their organizational leaders trustworthy, recognize their good intentions, and believe that their managers will do the best for the sake of the organization. Consequently, there are higher chances that they will devote greater effort and engage more in their job than those with lower trust (Tabak & Hendy, 2016). Moreover, individuals trusting their

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leaders are more receptive to change since they firmly believe that the change is necessary and beneficial (Neves & Caetano, 2006).

Communication

Communication is a vital factor in determining change readiness. From the employees' perspectives, communication climate refers to the degree to which employees believe that they receive and know all the necessary information in the organization, such as an organization's vision, strategy, policies, plans, procedures, etc. (Vakola, 2014). The information can be exchanged in three dimensions: upwards, downwards, and horizontally.

Communication is particularly important when it comes to organizational change since the employees seek to understand the benefits and drawbacks of this change to them and the company. Therefore, the scope, expectations, goals, and updates of the change program should be informed efficiently throughout all levels of the organization and with every stakeholder, including employees (Nah et al., 2007; Razmi et al., 2009). This communication should be open, honest, consistent, and continuous in every stage to actualize the change (Nah & Delgado, 2006). This helps to reduce the resistance to change of individuals, enhancing the possibility of change success.

Perceived Personal Competence

Another equally important determinant of readiness for change is perceived personal competence. It is referred to as the degree to which an individual feels about his competence in the work role. In other words, perceived personal competence is the sense of self-confidence that employees have when they perform their tasks, stemming from past working experiences (Kwahk & Kim, 2008). Employees with high perceived competence tend to believe that they fulfill their job requirements even when the tasks are different from the ones they used to do. For that reason, they are more likely to hold a positive attitude towards change and more ready to change compared to lower perceived competent ones.

Overall, this paper fulfills the research gap since it finds out the role of communication as a pivotal tool enhancing ERP implementation as daily routine workloads of employees since there has a very limited number of research studies that objectively focuses and discusses. Moreover, the paper provides a comprehensive insights of Vietnamese enterprises' ERP usage intention with respect of employees' readiness to change since, to our knowledge and to date, none of the above studies has examined the role of employees' readiness to change in ERP implementation in the context of Vietnam market.

RESEARCH MODEL AND HYPOTHESES

The Relationship between Perceived Technological Attributes and Usage Intention

Perceived ease of use and perceived usefulness are two fundamental factors in TAM. Perceived usefulness refers to the situations where a person believes that using a certain system will result in desired outcomes (Davis, 1989). Individuals are willing to adopt a technology if they consider it advantageous in increasing their performance on the job. Evidence indicates that

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the perceived usefulness is positively correlated with system usage intention (Amoako-Gyampah, 2007; Rajan & Baral, 2015). Hence, this study suggests the following hypothesis:

H1: There is a positive relationship between perceived usefulness and usage intention of an ERP system.

Meanwhile, perceived ease of use refers to the extent to which a person believes that using technology does not take significant mental and physical effort (David, 1986). Specifically, if employees perceive that the new technology requires minimal effort to quickly acquire knowledge about it, they are more likely to adopt it. By contrast, studies explore a negative relationship between complexity and usage intention (Alshamaila et al., 2013; Huy et al., 2012). Thus, we make the following hypothesis:

H2: There is a positive relationship between perceived ease of use and usage intention of an ERP system

The Effect of Readiness for Change on the Perception of Technology

The ERP system is integrated into the organization mainly to provide competitive advantage through enhancing the performance of the employees and the business (Hitt et al., 2002; Kalling, 2003; Gefen & Ragowsky, 2005). Individuals who are ready to change will engage actively in initiating the organizational change and hold an optimistic view of the new system. As a result, there are higher chances that they will focus on the positive aspects of the organizational transformation, figure out the favorable outcomes, namely improved performance, and fear to miss out on certain benefits if not trying out the new system (Walczuch et al., 2007). Moreover, individuals ready to change are less uncertain about the ERP system since they receive adequate information about the rationale, strategies, and scope of the ERP implementation. Therefore, we assume that a ready employee considers the system as being more useful and easy to use:

H3: There is a positive relationship between readiness for change and perceived usefulness.

H4: There is a positive relationship between readiness for change and perceived ease of use.

Developing Readiness for Change

We take into consideration four antecedents of readiness for change, including organizational commitment, trust in management, communication, and perceived personal competence.

Organizational commitment is "the relative strength of an individual's identification with and involvement in a particular organization" (Mowday et al., 1979). Accordingly, people with high organizational commitment are expected to believe and accept the organization's goals and values, devote constant effort on behalf of the organization and be passionately loyal to the organization (Mathews & Shepherd, 2002). Moreover, since they always attempt to work vigorously for the best interest of the company, they are more receptive to organizational change if it is beneficial to them and the organization as a whole (Ahmad et al., 2017). Researchers have found both direct and indirect relationships between organizational commitment and readiness for change (Weber & Weber, 2001; Madsen et al., 2005). Consequently, we propose:

H5: There is a positive relationship between organizational commitment and readiness for change.

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In terms of trust in management, Martin (1999) asserts that employees who trust their managers would react positively towards organizational change. In other words, the success of a new system adoption depends upon gaining trust from employees. With trust in management, employees are more inclined to believe that the organizational change plans are essential and they can enjoy benefits resulting from such decisions, thus more open to change (Kiefer, 2005). Furthermore, a high level of trust also leads to increased employee confidence in the success of the major transformational change and their ability to cope with change (Gigliotti et al., 2018). As a result, we develop the following hypothesis:

H6: There is a positive relationship between trust in management and readiness for change.

Regarding communication, empirical evidence indicates that individuals who receive adequate information about the change are more willing to accept it (Vakola, 2014). On the other hand, a poor and low level of communication results in insufficient information and misunderstanding about the ERP system, which eventually leads to resistance to change and ERP failure (Sarker & Lee, 2003; Nah et al., 2001). Therefore, we hypothesize:

H7: There is a positive relationship between communication and readiness for change.

As mentioned in the literature review, individuals with high perceived personal competence have a strong belief that they execute the job even when it is not similar to what they used to do. Hence, when the organization undergoes a transformational change that may affect the nature of their job, for example, implementation of an ERP system, they still react positively and are ready to adapt. This is supported by Weiner (2009), emphasizing the importance of perceived personal competence in seeking further change initiatives in the workplace. Hence, this study posits:

H8: There is a positive relationship between perceived personal competence and readiness for change.

The research model is presented in Figure 1.

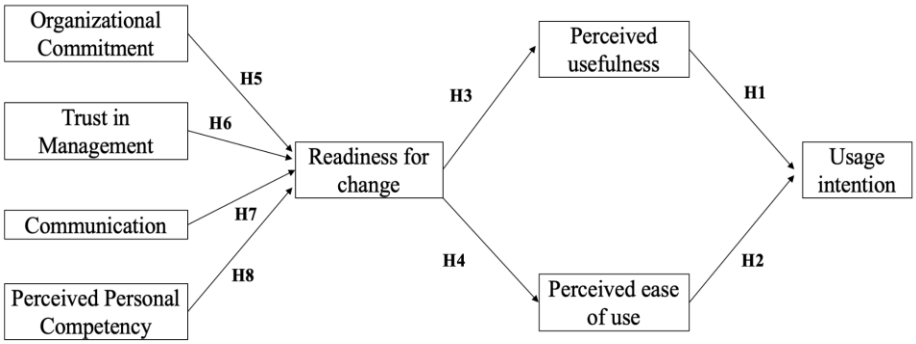

FIGURE 1

RESEARCH MODEL

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EMPIRICAL TEST RESULTS

Survey Tool Development and its Translation in to Vietnamese

This research focuses on individuals working in SMEs that have already adopted the ERP system on the organizational level. It is conducted in Vietnam with its emerging economy.

Content validity is examined by testing whether items measure precisely what they are supposed to measure (Nunnally, 1978). To have content validity, we borrow and adapt the measurement scales from prior studies, as well as modify them to fit our purposes. All have been confirmed in terms of validity and reliability.

Readiness for change

Readiness for change is adopted from the instrument developed by Dunham et al.(1989), which measures change attitude in terms of affective, cognitive, and behavioral components. Out of 18 items in the original scale, we select the four items with the highest factor explanatory power.

Perceived usefulness: We adopt the measurement items from Davis (1989) to fit in with our purpose. The outcomes of ERP systems are assessed in terms of both output quality and its impact on job performance.

Perceived ease of use

The five-item version of perceived ease of use developed by Davis (1989) and Davis et al. (1989) measures the degree to which a person believes that using a system would be free of effort. We modify the questionnaires to best suit the context of this study - the ERP implementation.

Usage intention

Usage intention is evaluated with two items developed by Rai et al. (2002), measuring the extent to which employees intend to use the ERP system.

Organizational commitment

We use six items developed by Kwahk & Lee (2008), which are built based on the work of Allen & Meyer (1990). These items assess the organizational commitment regarding three subgroups: affective, continuance, and normative dimensions.

Perceived personal competence

Perceived personal competence is adapted from an instrument developed by Allen & Meyer (1990).

Trust in management

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For trust in management, we adopt 6 items from Cook & Wall (1980), measuring the extent to which a person has confidence in the words and actions of his or her managers. Reverse coded, including "Our firm has a poor future unless it can attract better managers" and "Our management would be quite prepared to gain an advantage by deceiving the workers", are excluded in this survey.

Communication

Communication is measured with a scale developed by integrating the previous researches of Miller et al. (1994) and Lee et al. (2010) for the current study. This scale evaluates the extent to which an employee believes that he or she receives adequate information about the ERP implementation to prepare for the change.

Furthermore, the questionnaire also includes the demographic information of employees, namely gender, age, education. All question items use a five-point Likert-type scale, ranging from "strongly disagree" (1) to "strongly agree" (5).

Originally written in English, the questionnaire is sent to a group of lecturers for content validity review. This group consists of four lecturers who are fluent in both English and Vietnamese languages. The team members agree on the measurement scales' content validity.

A Vietnamese researcher translates the measurement scales into Vietnamese. Another scholar who is excellent in both English and Vietnamese translates the Vietnamese version back into English to evaluate the consistency and accuracy of both versions. Two other researchers conduct independent investigations of the Vietnamese and English versions and mutually agree that the translation was consistent and accurate. The Vietnamese version's preliminary survey is tested by 20 employees working in the organizations that already implement the ERP system. Based on the feedback of these employees, some necessary wording adjustments are made.

A shortened version of the measurement scales is provided in the appendix.

Data Collection and Sample Characteristics

Data were collected by conveniently approaching managers and staff from 10 Vietnamese SMEs which are following the Japanese style in doing business and management and currently implementing ERP adoption. The research gets back 150 valid and usable online responses out of 198 received ones. These correspondent employees all have experience in using the ERP system to execute their job. Data collection lasts for one month (April 2021). The demographic information of the respondents is presented in Table 2.

Male make up 54 percent of the respondents. By age, 42.6 percent are less than 31 years old, 41.3 percent between 31 and 40 years old, 13.3 percent between 41 and 50 years old and 2.8 percent are over 50 years old. Regarding the highest education level attained, 5.3 percent had a high school diploma; 78.7 percent, bachelor's degrees; and 16.0 percent, master's degrees or higher. Most of the respondents have worked in the current organizations for less than 6 years, accounting for 73.3 percent. In describing the role in the company, 64.7 percent are staff; 24.0 percent, supervisors; 8.0 percent, subsection chief; and 3.3 percent are managers. In terms of company type, out of 10 chosen organizations, 3 work in the manufacturing industry (30.0 percent), 2 are service enterprises (20.0 percent), and 5 are experts in information technology (50.0 percent).

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TABLE 2
PROFILES OF THE SURVEY RESPONDENTS

Profile	Category	Frequency	Proportion (%)
Gender	Male	81	54.0
	Female	69	46.0
Age	<31	64	42.6
	31-40	62	41.3
	41-50	20	13.3
	>50	4	2.8
Education level	High school	8	5.3
	Bachelor	118	78.7
	Master degree or above	24	16.0
Working experience (years)	<3	71	47.3
	3-5	39	26.0
	6-10	17	11.3
	>10	23	15.4
Department	Management	9	6.0
	Sales	13	8.7
	Marketing	7	4.7
	Financial/Accounting	23	15.3
	Human Resources	11	7.3
	IT	46	30.7
	Manufacturing	41	27.3
Position	Manager	5	3.3
	Supervisor	36	24.0
	Subsection chief	12	8.0
	Staff	97	64.7
Company type	Manufacturing	3	30.0
	Service	2	20.0
	Information Technology	5	50.0

Additionally, we examine to figure out whether non-response bias exists by comparing early and late respondents in terms of items constituting the constructs. To be specific, t-tests are performed and the results prove that there are no significant differences between the two groups at the five percent significance level, hence indicating that non-response bias is not a problem in this study.

RESULTS

Factor analysis was conducted using SPSS to evaluate the measurement model in terms of reliability, convergent validity, variables correlation, and statistical hypothesis test.

Reliability

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Reliability was assessed based on Cronbach's alpha coefficient and corrected item-total correlation (Allen, 1984). Reliability was calculated for all multi-item variables. The entire constructs, as well as the individual variables, were greater than 0.8, exceeded the minimum alpha of 0.6 (Hair et al., 1998); and corrected item-total correlations were greater than 0.3 (Nurosis,1994) as shown in Table 3, indicating that the measurement model was reliable.

Convergent Validity

The measurement model achieved high convergent validity, supported by the result that all factor loadings were greater than 0.6 (note that convergent validity is confirmed when factor loadings are greater than 0.5 (Hair et al., 2010); KMO coefficients are greater than or equal to 0.5; Bartlett's test is significant with p-value < 0.05 and cumulative >50%, as shown in Table 3.

TABLE 3
THE MEASUREMENT MODEL STATISTICS

Construct	Indicators	Corrected Item-Total Correlation	1	2	3	4	5	6	7	8
1. RFC CA = 0.905 KMO = 0.772 p-value = 0.000 Cumulative % = 78.071	RFC1	0.798	0.892							
	RFC2	0.824	0.909							
	RFC3	0.801	0.890							
	RFC4	0.727	0.842							
2. PEU CA = 0.960 KMO = 0.887 p-value = 0.000 Cumulative % = 86.410	PEU1	0.869		0.915						
	PEU2	0.915		0.946						
	PEU3	0.872		0.918						
	PEU4	0.904		0.940						
	PEU5	0.884		0.927						
3. PU CA = 0.972 KMO = 0.924 p-value = 0.000 Cumulative % = 89.845	PU1	0.910			0.937					
	PU2	0.937			0.957					
	PU3	0.910			0.937					
	PU4	0.935			0.955					
	PU5	0.922			0.947					
	PU6	0.933			0.954					
4. UI CA = 0.949 KMO = 0.500 p-value = 0.000 Cumulative % = 95.193	UI1	0.904				0.976				
	UI2	0.904				0.976				
5. OC CA = 0.872 KMO = 0.791 p-value = 0.000 Cumulative % = 63.125	OC1	0.712					0.820			
	OC2	0.490					0.601			
	OC3	0.701					0.824			
	OC4	0.706					0.824			
	OC5	0.745					0.834			
	OC6	0.757					0.837			
6. PCC CA = 0.890 KMO = 0.794	PPC1	0.742						0.848		
	PPC2	0.711						0.824		
	PPC3	0.766						0.857		

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p-value = 0.000 Cumulative % = 69.856	PPC4	0.687						0.795		
	PPC5	0.770						0.854		
7. COM CA = 0.875 KMO = 0.826 p-value = 0.000 Cumulative % = 67.309	COM1	0.688							0.813	
	COM2	0.684							0.806	
	COM3	0.586							0.720	
	COM4	0.754							0.850	
	COM5	0.824							0.903	
8. TM CA = 0.898 KMO = 0.773 p-value = 0.000 Cumulative % = 76.932	TM1	0.720								0.837
	TM2	0.806								0.900
	TM3	0.754								0.866
	TM4	0.824								0.903

Correlation Analysis

Under the condition that all observations are significant (sig. < 0.05), the Pearson correlations show a positive correlation between all dependent variables and independent variables, as shown in Table 4 below. In terms of Readiness for Change, while the Organizational Commitment and Communication showed a medium positive correlation, the Personal Perceived Competence and Trust in Management experienced a small positive correlation. The correlation between Readiness for Change and Perceived Ease of Use, as well as Perceived Usefulness, is a strong correlation, which is the same as the correlation between Perceived Ease of Use and Perceived Usefulness with the Usage Intention.

TABLE 4
CORRELATIONS

	OC	**PPC**	**COM**	**TM**	**RFC**	**PEU**	**PU**	**UI**
OC	-							
PPC	0.615**	-						
COM	0.592**	0.679**	-					
TM	0.651**	0.704**	0.773**	-				
RFC	0.305**	0.259**	0.321**	0.268**	-			
PEU	0.267**	0.237*	0.308**	0.223*	0.591**	-		
PU	0.267**	0.215*	0.326**	0.313**	0.640**	0.721**	-	
UI	0.270**	0.285**	0.335**	0.245*	0.599**	0.694**	0.770**	-

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Regression and T-Test Analysis

Four regression analyses were conducted to identify which variables made significant contributions to predict intention to use ERP systems. Using the stepwise method, only the model with statistical significance is shown, Table 5 the others with the p-value >0.05 had no significant impact.

The results of the analysis, including coefficient, t-value, and significance level for each independent variable are reported in Table 3. Among the 4 independent variables expected to affect Readiness for Change, only Communication was proved to be significant, while Organization Commitment, Perceived Personal Competency, and Trust in Management were removed. The t-value of the remaining variables was all greater than 2, with the significance level ranging <0.05.

TABLE 5
MULTIPLE REGRESSION ANALYSIS

Dependent Variables	Independent Variables	β	t	Significance
Readiness for Change	Communication	0.321	3.473	0.001
Perceived Ease of Use	Readiness for Change	0.591	7.510	0.000
Perceived Usefulness	Readiness for Change	0.640	8.538	0.000
Usage Intention	Perceived Ease of Use	0.289	3.365	0.001
Usage Intention	Perceived Usefulness	0.562	6.555	0.000

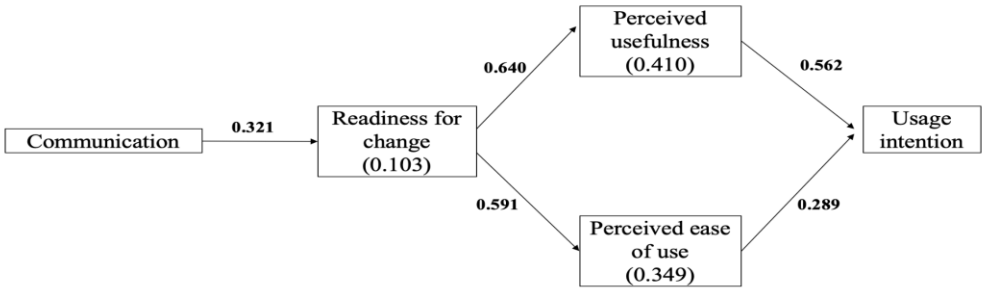

FIGURE 2

STANDARDIZED COEFFICIENTS AND R-SQUARED VALUES

Based on Table 4 and Figure 2, the results show that hypotheses H1, H2, H3, H4, H5, and H7 are statistically supported, while hypotheses H5, H6, and H8 are not statistically supported.

DISCUSSION AND IMPLICATIONS

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The findings of this study reveal that individual readiness for change has an indirect impact on the ERP usage intention through factors of TAM, which are perceived usefulness and perceived ease of use. Since the results show that the path coefficient of perceived ease of use to ERP usage intention was 0.289 (t-value, 3.365; p-value, 0.001). This demonstrates that H2: Perceived ease of use has positively significant impact of ERP usage intention. This result show a contrary contrast to the results of Alshamaila et al. (2013) & Huy et al. (2012) indicating that there a negative relationship between technology perception and usage intention.

Specifically, individual readiness for change is positively associated with perceived usefulness and perceived ease of use since the path coefficients of readiness for change to both perceived usefulness and perceived ease of use are 0.640 and 0.591, respectively (t-values, 8.538 and 7.510; p-values, 0.000 and 0.000, respectively). This result is similar to that of Kwahk & Lee (2008).

Moreover, the path coefficient of perceived communication to readiness for change was 0.0.321 (t-value, 3.473; p-value, 0.001). This indicates that H7: Perceived communication has a positive relationship with readiness for change is statistically supported. This result is similar to the results of Sarker & Lee (2003) and Nah et al. (2001). Accordingly, both perceived usefulness and perceived ease of use have a positive relationship with the behavioral intention of employees to use the ERP system. This result is similar to that of Davis (1989), Amoako-Gyampah (2007), and Rajan & Baral (2015).

In terms of factors that contribute to the development of readiness for change, only communication has a positive effect on the change readiness of employees. This result is similar to that of Razmi et al. (2009). Therefore, strategies and programs that increase the efficiency of the communication environment can play an important role in increasing readiness for change. In turn, readiness can lead to individual ERP usage.

The other three factors, including organizational commitment, trust in management, and perceived personal competence have a negligible effect on readiness for change. The reason for this inconsistency with previous research is that prior studies mainly focus on large enterprises (LEs). Meanwhile, the target of our study is individuals currently working in SMEs in Vietnam, a newly emerging economy. Hence, the characteristics of SMEs compared to LEs, as well as the unique conditions in Vietnam may be responsible for the fact that there is no relationship between organizational commitment, trust in management, perceived personal competence, and readiness for change. This is also one notable contribution of this study to the existing literature as the first comprehensive and systematic research that explores the relationship between individual readiness for change and the behavioral ERP usage intention of employees in SMEs in Vietnam.

Specifically, Trinh & Thanh (2017) disclose one major problem of Vietnamese SMEs is the lack of leaders with adequate knowledge and experience in managerial skills. Consequently, instead of pursuing long-term objectives, SMEs' managers are more likely to develop poor corporate visions and follow short-term goals and temporary opportunities. Furthermore, Trinh and Thanh (2017) also argue that low wage rate is a constraint of Vietnamese SMEs as opposed to LEs while salary and wages are important factors in attracting and retaining employees (Tella et al., 2007). Hence, the trust in management organizational commitment in Vietnamese SMEs is rather low. In addition, 23.7 percent of SMEs in Vietnam report the inadequately educated labor force (Trinh & Thanh, 2017), which eventually leads to the skill shortage of employees, as another disadvantage. This may affect the perceived personal competence, and the result of this study as well.

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Nevertheless, since readiness for change and ERP usage in SMEs in Vietnam are rarely discussed in the literature, more studies should be conducted to further explain the difference of SMEs in Vietnam's context.

Implications

The results of this study indicate that readiness for change has direct effects on perceived ease of use and perceived usefulness. Perceived ease of use and perceived usefulness both show a direct positive impact on usage intention. Therefore, solutions to increase the readiness for change, perceived ease of use, and perceived usefulness will directly or indirectly increase the intention to use the ERP system. Our study includes a number of significant suggestions for Vietnamese SMEs that are in the early stages of the process of ERP implementation so that they can find the most essential parts to concentrate on, as well as the ones that have failed in ERP implementation so that they can improve their process in the further application.

Firstly, readiness for change is considered the basic foundation to achieve the usage intention of ERP systems. Readiness for change refers to change management, which has a close relationship with the readiness to adapt to the change in the new technology, the organizational culture, and the difference in daily operation created by using ERP. The individual feeling of full preparation for the change is the key component contributing to their attitude, which motivates them to use the system.

Four factors, namely organizational commitment, perceived personal competency, communication, and trust in management, in this study are hypothesized to influence perceived trust. However, only communication is statistically supported. This indicates that in the environment of Vietnamese SMEs, communication is the most essential part to focus on to raise the readiness for change of employees. Particularly, there are 2 aspects in communication that SME managers should pay attention to, which are the internal communication between levels and the provision of training and education programs. As in the context of SMEs with a small size, the communication between levels can be enhanced easily, which provides all employees with the full necessary information and the perception of ERP usefulness and benefit will also be raised. This calls for an open communication system where the decision and application process of ERP systems will be established between managers and employees. In terms of training and education programs, it is important to involve employees for change, trial usage, and persuasion for the usefulness of the new ERP system. The training should be designed carefully in detail, with managers as an influential factor.

Besides readiness for change, perceived ease of use and perceived usefulness play an important role in improving ERP intention to use. To achieve perceived ease of use, which means the awareness of employees that the system is easy to use, it is crucial that the employees have to clearly understand the process and feel confident in their ability to execute their usage. It is the detailed training program that helps them to absorb and take control of the ERP implementation, which leads to their perceived ease of use. Regarding perceived usefulness, employees will understand the advantage of using ERP systems if they have the chance to approach enough documents clarifying about the ERP benefits as well as being inspired about that from their colleagues or managers. Therefore, corporate culture enhancing communication and education are critical for increasing the intention to use ERP among employees.

Overall, we contribute to the literature by providing a shed-light of factors impacting technology renovative solutions alike ERP system for emerging countries like Vietnam. By

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indicating communication and employees' perceived of usefulness and perceived ease of use play critical role in ERP implementation, the paper offers implications for practitioners and decision-makers since it recommends corporate culture enhancing communication and training activities.

CONCLUSIONS, LIMITATIONS, AND FUTURE RESEARCH DIRECTIONS

This study can be viewed as one of the first systematic and in-depth studies examining the relationship between individual readiness for change and the ERP usage intention of employees in SMEs within the context of Vietnam, a newly emerging economy. Specifically, this research integrates readiness for change and its affecting factors, namely organizational commitment, trust in management, communication, and perceived personal competence, into the Technology Acceptance Model to explain the readiness and intention of potential ERP users. Empirical findings of this study show that readiness for change does have an indirect influence on the intention to use the ERP system through increasing the perceived usefulness and perceived ease of use. At the same time, communication has a significant effect on readiness for change while organizational commitment, trust in management, and perceived personal competence appear to have no impact on change readiness. Strategies and action plans have been analyzed to increase the readiness of potential users of ERP systems in SMEs by improving the communication environment in the organization, which ultimately leads to a higher level of usage intention.

Despite these results, there are still certain limitations to our study.

The first drawback is that this study's sample includes individuals from only 10 SMEs in Vietnam, thus, the results may not be representative of all Vietnamese SMEs. Therefore, caution should be exercised in generalizing our findings.

Second, in our study, organizational commitment, trust in management, and perceived personal competence play no role in increasing readiness for change, which is opposite to previous research results. Although the explanation regarding the unique characteristics of SMEs and the Vietnamese context may be temporarily acceptable, more comprehensive interpretations should be provided in further research.

Third, some influencing factors of readiness for change might be omitted, such as accessing to finance of SMEs, the top manager's intention and decision…,that affect our study results.

Further research should consider these limitations to confirm our study results as well as explain more deeply the role of readiness for change on behavioral ERP usage intention and its affecting factors based on SMEs characteristics and Vietnamese context.

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APPENDIX

Measurement Scales

Readiness for change

RFC1: I look forward to changes at work.
RFC2: I am inclined to try new ideas and usually support new ideas.
RFC3: I often suggest new approaches to things.
RFC4: I intend to do whatever is possible to support change.

Perceived ease of use

PEU1: Learning to operate the ERP system is easy.
PEU2: It is easy to remember how to use the ERP system.
PEU3: I find it easy to get the ERP system to do what I want it to do.
PEU4: It is easy to become skillful at using the ERP system.
PEU5: I find the ERP system easy to use.

Perceived usefulness

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PU1: Using the ERP system enables me to have more accurate information.
PU2: Using the ERP system enhances my effectiveness in performing my task.
PU3: Using the ERP system is useful for performing my task.
PU4: Using the ERP system increases my productivity in performing my task.
PU5: Using the ERP system enables me to access more relevant information.
PU6: Using the ERP system enables me to acquire high-quality information.

Usage intention

UI1: I intend to use the ERP system for performing my job as often as needed.
UI2: To the extent possible, I would frequently use the ERP system in my job.

Organizational commitment

OC1: I would be very happy to spend the rest of my career with this organization.
OC2: I enjoy discussing my organization with people outside it.
OC3: I really feel as if this organization's problems are my own.
OC4: This organization has a great deal of personal meaning for me.
OC5: It would be very hard for me to leave my organization right now, even if I wanted to.
OC6: Too much in my life would be disrupted if I decided I wanted to leave my organization now

Trust in management

TM1: Management at my firm is sincere in its attempts to meet the workers' point of view.
TM2: Management can be trusted to make sensible decisions for the firm's future.
TM3: Management at work seems to do an efficient job.
TM4: I feel quite confident that the firm will always try to treat me fairly.

Communication

CE1: I am thoroughly satisfied with the information I receive about what's going on at my organization.
CE2: My performance would improve if I received more information about what's going on here.
CE3: There are well-informed newsletters about the project through the company.
CE4: The communication supports the technology in use.
CE5: I am satisfied with the open communication with supervisors or colleagues.

Perceived personal competence

PPC1: In general, the work I am given to do at my organization is challenging and exciting.
PPC2: The requirements of my job are demanding.

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PPC3: In this organization, I am encouraged to feel that the work I do makes important contributions to the larger aims of the organization.

PPC4: I am usually given feedback concerning my performance on the job.

PPC5: In my organization, I am allowed to participate in decisions regarding my workload and performance standards.

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