Exploring the Mediating Effect of Readiness for Change on ERP Systems Adoption

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Abstract

To rapidly respond to uncertainties in the business environment whilst remaining competitive, every organization needs to be able to successfully introduce and manage organizational change. Cognizant of the role of information systems (IS) as an enabler of organizational change, many organizations have paid attention to Enterprise Resource Planning (ERP) systems for successful organizational change primarily because of their change-driving forces across organizations. In this study, we focus attention on the role of readiness for change in the ERP systems adoption. Readiness for change described as views about the need for organizational change is posited to be an antecedent of two expectancies about the system, performance expectancy and effort expectancy, which lead to actual system use. In order to further establish the relevance of readiness for change as a determinant of two expectancies, computer self-efficacy is considered to be other key predictor as well. In addition, this study proposes that the personal characteristics of organizational commitment and perceived personal competence play roles of important determinants of readiness for change. Based on data gathered from the users of the ERP systems, structural equation analysis using LISREL provides significant support for the proposed relationships. Theoretical and practical implications are discussed along with limitations.

Keywords: Organizational change, Readiness for change, ERP systems, User behavior toward information technology

Introduction

Because of today's increasingly dynamic environments, organizations are continually faced with the need to change their structures, objectives, processes, and technologies. Therefore, every organization needs to be able to successfully introduce and manage organizational change to achieve and sustain competitive advantage (Iverson 1996). Cognizant of the role of IS as an enabler of organizational change (Robey and Sahay 1996), many organizations have paid attention to Enterprise Resource Planning (ERP) systems for successful organizational change primarily because of their change-driving forces across organizations. ERP systems immediately have become popular means for both medium and large-sized organizations to overcome the limitations of fragmented legacy systems and related business processes (Robey et al. 2002). A study reported that nearly 34 percent of surveyed organizations had investigated, piloted, or implemented ERP packages (Computer Economics 1999). However, despite the popularity of ERP systems, on the other hand, their implementation has been plagued by a high failure rate and difficulty to realize the promised benefits. Approximately one-half of all ERP projects fail to achieve anticipated benefits due to managers underestimating the efforts involved in managing change (Appleton 1997). Compared with traditional and comparative simplistic IT efforts, the adoption of ERP systems usually involves radical organizational change as it is often associated with fundamental organizational improvements that cut across functional and organizational boundaries. ERP systems are also inherently organization-wide systems and their implementation involves multiple stakeholders (Amoako-Gyampha and Salam 2004). As a result, enterprise-wide initiatives have often faced resistance to change from organizational members. The resistance to change may result to the user's dysfunctional behavior when engaging with the system.

Creating readiness for change has been most often explained in conjunction with prescriptions

for reducing resistance. In essence, readiness for change may act to preempt the likelihood of resistance to change, increasing the potential for change efforts to be more effective (Armenakis et al. 1993). It has been also argued that the reason so many change efforts run into failure is usually directly connected to individuals' not readiness for change (Schein 1979). Therefore, cognizant of the nature of ERP systems in terms of organizational change, in this research, we investigate the role of readiness for change in the acceptance of ERP systems. Furthermore, this research examines how the readiness for change can be formed.

Conceptual Background: Readiness for Change

Organizational change is defined as an attempt, or series of attempts, to modify an organization's structure, goals, technology or work tasks (Carnall 1986). A range of perspectives on organizational change have developed over the past decades. Among them, three paradigms have influenced studies of technology-based organizational change: planned change, technological imperative and punctuated equilibrium (Orlikowski 1996). While planned change and punctuated equilibrium perspectives make important and unique contributions to the studies on organizational change, the perspective incorporated in the present research is the technological imperative view. Transforming organizations with IT is an important business objective since traditional structures and processes are often ineffective in producing desired levels of productivity and customer service (Robey and Sahay 1996). As each new generation of technology and each major technological advance have emerged, organizations will be radically and fundamentally altered (Robey and Boudreau 1999).

Readiness for change can be described as the extent to which organizational members hold positive views about the need for organizational change, as well as the extent to which they believe that such changes are likely to have positive implications for themselves and the

organization (Armenakis et al. 1993). Change is a fundamental theme in human life and organizational behavior, with which individuals generally resist. Readiness is the cognitive precursor to the behaviors of either resistance to, or support for, a change effort (Armenakis et al. 1993). Researchers have often attributed many IS implementation problems to users' propensity to resist change (Markus 1983; Robey and Boudreau 1999). Markus (1983) explained resistance to change and implementation difficulties primarily in terms of the conflict for increased power among users.

Readiness for change is reflected in organizational member's attitude regarding the extent to which changes are needed and the organization's capacity to make those changes successful (Armenakis et al. 1993). Organizational member's attitude toward change can play an important role in determining whether an individual chooses to support or resist a change. Therefore, a state of readiness for change can be interpreted as the concept of attitude toward change. Attitude toward change in general consists of a person's affective reactions to change, cognitions about change, and behavioral tendency toward change (Dunham et al. 1989). Affective responses are a greater or lesser feeling of being linked to, satisfied with, or anxious about change. Cognitive responses are the opinions one has about the advantages and disadvantages, usefulness, and necessity, and about the knowledge and information required to handle the change. Finally, behavioral responses are the actions one has already taken or may take in the future for or against the change. Within this multidimensional view of responses to organizational change, resistance to change is represented by the set of responses to change that are negative along three dimensions, and support for change is represented by the set of responses that are positive along three dimensions (Piderit 2000). Different individuals may respond differently to a particular organizational change: for some, an organizational change gives satisfaction, while the same change brings disadvantages for others (Yousef 2000).

Research Model and Hypotheses

To explore the role played by readiness for change in understanding individual's reaction to the adoption of ERP systems, this research situates the construct within a nomological net that consists of its consequences and antecedents. This results in a theoretical research model of the constructs that presents a plausible network of relationships for readiness for change. The research model is depicted in Figure 1.
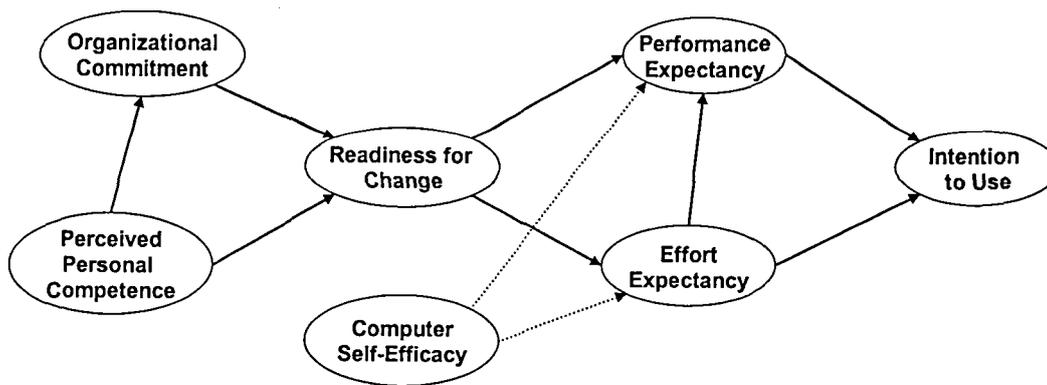

Figure 1. Research model

Extant IS research has explored how and why organizations and individuals adopt and use new IS or IT. A dominant emphasis in much of the research focused on user behaviors toward IT has been on notions of instrumentality and cognitive complexity (Agarwal and Karahanna 2000). Therefore, it has been posited that usage behavior is driven by these two notions such as performance expectancy and effort expectancy. Performance expectancy is defined as the degree to which an individual believes that using the system will help him or her to attain gains in job performance, while effort expectancy is defined as the degree of ease associated with the use of the system (Venkatesh et al. 2003). Part of this research examines the relationships between

performance expectancy, effort expectancy, and behavioral intention to use the system. These relationships have been replicated and validated by many researchers (Venkatesh et al. 2003). Many previous studies have indicated that individuals' behavioral intention to use the system is influenced by their performance expectancy. The primary reason that an employee exploits the systems that have been launched in an organization is that they expect they find the systems useful for their job performance. Extensive research provides evidence of the significant effect of effort expectancy on behavioral intention to use the system, either directly or indirectly through its influence on performance expectancy. The systems need to be easy to use and easy to learn in order to prevent the belief that it is 'useful but underutilized'. These issues are encapsulated in the following hypotheses:

H_1: Performance expectancy for an ERP system will have a significant effect on behavioral intention to use the ERP system.

H_2: Effort expectancy for an ERP system will have a significant effect on behavioral intention to use the ERP system.

H_3: Effort expectancy for an ERP system will have a significant effect on performance expectancy for the ERP system.

A state of readiness for change can be derived from two issues: (a) the need for change, that is, the discrepancy between the desired end-state and the present state; and (b) the perceived capability to change of parties affected by the change efforts (Armenakis et al. 1993). Creating the belief that organizational change is needed implies that there is a performance gap between the current state and some desired end-state. As a result, the change efforts such as the adoption of ERP systems to fill up the gap are expected to bring the improved performance to the individuals and organization. Thus, a state of high level of readiness for change is expected to positively influence performance expectancy. Therefore, we can expect that individuals with high

level of readiness for change believe that using the information systems required for organizational change will help them to attain gains in job performance.

In order to establish the relevance of readiness for change as a determinant of performance expectancy, it needs to consider other key predictors as well. Among the determinants of performance expectancy, computer self-efficacy has been proposed and has accumulated empirical support as an important antecedent of perceived usefulness, which is similar to the notion of performance expectancy (Agarwal and Karahanna 2000). Based on the social cognitive theory, Compeau and Higgins (1995) argued that self-efficacy has a positive influence on individual expectancies about the consequences of performing a specific behavior. In other words, computer self-efficacy can be established as an additional important predictor of performance expectancy. Therefore, we test the following hypothesis:

H_4: After controlling for computer self-efficacy perceptions, a state of readiness for change will have a significant effect on performance expectancy of an ERP system.

The perceived capability to change, which plays a role of creating a state of readiness for change, is closely related to the individual and collective confidence of parties affected by the change efforts. The belief on this confidence is likely to easily adapt the individuals to the new circumstances. They tend to believe that they can learn and utilize new practices and technologies that are needed for the new situation, without severe cognitive effort on their part. Therefore, we can expect that individuals with high level of readiness for change believe that they can learn how to use the information systems required for organizational change with little effort. This is especially true for the case of ERP systems since they require learning to overcome knowledge barriers, and unlearning of what is already known (Robey et al. 2002).

As with performance expectancy, many empirical studies have supported the relationship between computer self-efficacy and effort expectancy. Venkatesh and Davis (1996) argued that

computer self-efficacy would exhibit a positive influence on perceived ease of use, that is, effort expectancy. The reasoning was justified on the basis that the confidence in one's computer related abilities can be expected to serve as the basis for an individual's judgment about how easy a new information system will be to use. Considering that we suggest readiness for change is a predictor of effort expectancy, a state of readiness for change and computer self-efficacy will together positively influence on the cognitive effort for the system use. Therefore, drawing upon this discussion, we suggest the following hypothesis:

H_5: After controlling for computer self-efficacy perceptions, a state of readiness for change will have a significant effect on effort expectancy of an ERP system.

Prior research have identified that organizational commitment and perceived personal competence play key roles in employees' acceptance of change (Iverson 1996; Lau and Woodman 1995; Meyer and Allen 1991). Organizational commitment can be defined as the relative strength of an individual's identification with, and involvement in, a particular organization (Mowday et al. 1982). Various empirical studies have supported the impact of organizational commitment on readiness for change. It is argued that individuals with strong organizational commitment would be more willing to accept organizational change if such a change does not alter the basic values and goals of the organization and is seen as beneficial to the organization (Yousef 2000). Individuals' commitment to an organization affects how they evaluate organizational change (Lau and Woodman 1995). This implies that a highly committed individual might more readily identify with, and accept, organizational change efforts that are perceived as beneficial. The above discussion suggests that the degree of individuals' commitment to an organization have varying effects on their readiness for change; and underpins the following hypothesis for subsequent testing:

H_6: Organizational commitment will have a significant effect on a state of readiness for

change.

There is a growing body of literature supporting the positive relationship of perceived personal competence to a state of readiness for change (Gardner et al. 1987). Perceived personal competence can be defined as the degree of the individual's feelings of competence in the work role. According to Gebert et al. (1999), the change-oriented action is a function of employee motivation; and thus employees with strong perceived personal competence are likely to pursue further change initiatives. High levels of perceived personal competence derived from the satisfying work experiences give employees self-confidence (Gebert et al. 1999). Individuals with a strong sense of self-confidence tend to believe that they can execute the particular job under any settings and also perform tasks that are slightly different. Therefore, the more satisfied in perceived personal competence in aspect of their work employees are, the more ready for change they can be; by recognizing ways and means of performing their tasks. Thus, the following hypothesis is posited:

> H_7: Perceived personal competence will have a significant effect on a state of readiness for change.

Examining the various studies, it is evident that major influences of organizational commitment can be found throughout the work environment (Mowday et al. 1982). Therefore, there has been a considerable amount of research investigating the links between variables of work experiences and organizational commitment (Meyer and Allen 1991). Organizational commitment develops as the result of the satisfying work experiences that are compatible with employees' values; and thus contribute to perceived personal competence (Meyer and Allen 1991). Herzberg (1966) identified that employees tend to describe the satisfying work experiences in terms of factors that are intrinsic to the job role, which he called motivators. As a consequence, based on this notion, it might be expected that perceived personal competence plays an important role in building the

satisfying work experiences that are tightly associated with organizational commitment. Based on this discussion, we suggest the following hypothesis:

H_8: Perceived personal competence will have a significant effect on organizational commitment.

Research Methodology and Sample

The items used to operationalize the constructs included in this study were mostly adapted and modified from previous studies, with some changes necessary for the target information system and the organizational context. All research variables were measured using multi-item scales (refer to Appendix). The questionnaire employed a seven-point Likert scale, with anchors ranging from 'strongly disagree' to 'strongly agree'. The data were collected from employee subjects that worked with ERP systems to perform their tasks. A questionnaire was designed and sent to the users of the ERP systems of the organizations chosen for this study. Of the 350 questionnaires distributed, 312 were returned. After being initially screened for usability and reliability, 283 responses were found to be complete and usable. Slightly over half the respondents (51 percent) were comprised of males. About 14 percent had completed high school, while the remainder of respondents (86 percent) had obtained at least college degree. On average, the respondents were approximately 29 years old and had about 5 years of work experience.

Data Analysis and Results

Measurement Model

A confirmatory factor analysis (CFA) using LISREL 8.7 was conducted to test the measurement model. The measurement model in the CFA was revised by removing items, one at a time that

had large standardized residuals and/or weak correlations with other items. After removing items, the measurement model exhibited an overall good model fit, with the data collected from the respondents by meeting the acceptance levels commonly suggested by previous research. The χ^2 of 767.756 with 524 degrees of freedom showed a χ^2 to degrees of freedom ratio (1.465) of less than the recommended 3.0. GFI at 0.865 was below but closer to the recommended level 0.90. Although the GFI level could be improved by dropping additional items, it was decided to stop the dropping procedure by considering the content of the measurement. AGFI at 0.838, NFI at 0.977, NNFI at 0.991, and CFI at 0.992 were all within the accepted thresholds. As other indices, RMSR and RMSEA had values of 0.033 and 0.041, respectively, which were within the recommended threshold values for good fit. Recognizing the good model fit for the measurement model, further analysis was conducted to assess the psychometric properties of the scales; that is, for the construct validity of the research instruments.

The convergent validity was assessed by three measures, as shown in Table 1 (Fornell and Larcker 1981). All of the factor loadings of the items in the measurement model were greater than 0.60, with most of them above 0.80. Each item loaded significantly ($p<0.01$ in all cases) on its underlying construct. The composite construct reliabilities were also within the commonly accepted range greater than 0.70, with all of them above 0.80. Finally, the AVE was all above the recommended level of 0.50 (Hair et al. 1998), which meant that more than 50 percent of the variances observed in the items were explained by their underlying constructs. Therefore, all constructs in the measurement model had adequate convergent validity.

The discriminant validity was examined in two ways. First, the shared correlations between constructs were compared with the square root of AVE of the individual constructs (Fornell and Larcker 1981). As shown in Table 2, all constructs share more variance with their indicators than with other constructs. Discriminant validity of the constructs was further validated by fixing the

correlation between various constructs at 1.0 and then re-estimating the modified model. Significant differences in the χ^2 statistic of the constrained and unconstrained models imply high discriminant validity. The χ^2 statistic of the unconstrained model was significantly better than any possible constrained models, providing positive support for the discriminant validity (Table 3). As a consequence, these results revealed no violation of the criteria for the discriminant validity of the constructs in the research model.

In addition, a second order CFA was conducted to confirm the multidimensionality for the construct of readiness for change. As illustrated in Figure 2, all of γ-coefficients and all of the factor loadings of the items were greater than 0.80; and all the values were significant ($p<0.01$ in all cases). The second order factor model exhibited an overall good model fit with the data collected from the respondents, by meeting the commonly recommended levels. GFI at 0.951, AGFI at 0.897, NFI at 0.984, NNFI at 0.982, CFI at 0.989, and RMSR at 0.025 were all within the accepted thresholds. These results confirmed the multidimensionality of the construct of readiness for change.
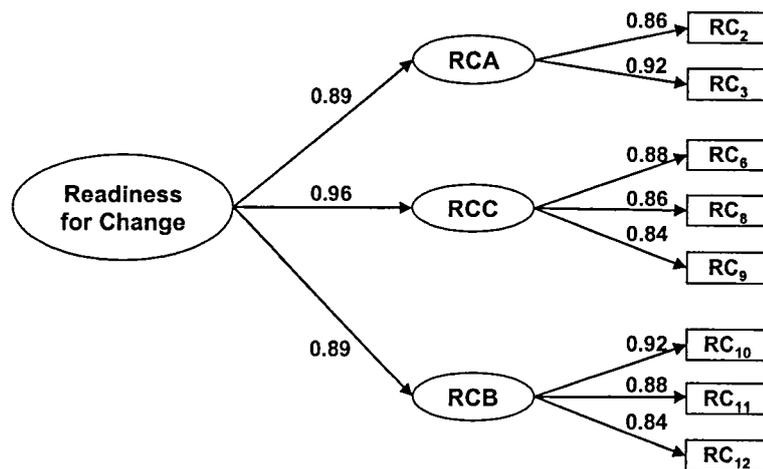
$GFI = 0.951, AGFI = 0.897, NFI = 0.984, NNFI = 0.982, CFI = 0.989, RMSR = 0.025$

Figure 2. Second order CFA for readiness for change

Table 1. Convergent validity test using factor loading, composite reliability, and AVE

Constructs	Items	Factor loading	Composite reliability	Average variance extracted
OC	oc1	0.818	0.895	0.631
	oc2	0.767		
	co3	0.816		
	oc4	0.883		
	oc6	0.673		
RCA	rc2	0.864	0.887	0.796
	rc3	0.920		
RCC	rc6	0.882	0.895	0.739
	rc8	0.856		
	rc9	0.840		
RCB	rc10	0.917	0.912	0.776
	rc11	0.880		
	rc12	0.844		
EE	ee1	0.838	0.935	0.742
	ee2	0.829		
	ee4	0.858		
	ee5	0.896		
	ee6	0.884		
PE	pe1	0.855	0.942	0.765
	pe2	0.913		
	pe3	0.853		
	pe4	0.862		
	pe5	0.888		
IU	iu1	0.905	0.876	0.779
	iu2	0.860		
PPC	ppc2	0.734	0.855	0.597
	ppc3	0.835		
	ppc4	0.691		
	ppc5	0.821		
SE	se3	0.860	0.952	0.767
	se4	0.873		
	se5	0.872		
	se6	0.894		
	se7	0.886		
	se8	0.871		

Table 2. Correlations and the square root of AVE

Constructs	OC	RCA	RCC	RCB	EE	PE	IU	PPC	SE
OC	0.794								
RCA	0.470	0.892							
RCC	0.510	0.858	0.860						
RCB	0.468	0.797	0.859	0.881					
EE	0.495	0.548	0.589	0.585	0.861				
PE	0.487	0.622	0.759	0.706	0.584	0.875			
IU	0.502	0.581	0.706	0.664	0.686	0.810	0.883		
PPC	0.500	0.435	0.495	0.475	0.462	0.485	0.511	0.773	
SE	0.441	0.386	0.453	0.370	0.425	0.396	0.512	0.647	0.876

Note: Diagonals represent the square root of AVE of each construct. Off diagonal entries are the correlations among constructs.

Table 3. Discriminant validity test using χ^2 statistic differences of construct pairs

Constructs pairs		χ^2 statistic		
		Constrained	Unconstrained	Difference
OC	RCA	219.17	50.30	168.87
	RCC	464.51	53.45	411.06
	RCB	518.86	56.26	462.60
	EE	941.52	61.81	879.71
	PE	980.94	89.31	891.63
	IU	192.67	40.55	152.12
	PPC	503.00	71.33	431.67
	SE	996.92	80.28	916.64
RCA	RCC	95.09	27.38	68.52
	RCB	107.00	4.99	102.01
	EE	175.88	24.13	151.75
	PE	167.63	23.81	143.82
	IU	151.00	13.87	137.13
	PPC	185.77	17.84	167.93
	SE	185.17	21.46	163.71
RCC	RCB	135.91	18.59	117.32
	EE	399.29	28.10	371.19
	PE	286.11	32.61	253.50
	IU	131.31	7.88	123.43
	PPC	474.85	14.34	460.51
	SE	436.14	25.69	410.45
RCB	EE	447.61	39.38	408.23
	PE	378.56	36.51	339.95
	IU	134.44	4.44	130.00
	PPC	488.43	11.73	476.70
	SE	497.33	27.65	469.68
EE	PE	1370.18	54.90	1315.90
	IU	151.68	25.92	125.76
	PPC	520.97	45.60	475.37
	SE	1479.16	52.05	1427.11
PE	IU	105.31	19.07	86.24
	PPC	505.79	42.42	463.37
	SE	1604.23	50.65	1553.58
IU	PPC	157.96	4.85	153.11
	SE	161.59	15.42	146.17
PPC	SE	392.63	57.89	334.74

Note: All the differences in χ^2 are significant at α=0.01 level.

Structural Model

The structural model, including the research hypotheses and the causal paths, was examined using the confirmed measurement model. The model's overall fit with the data was evaluated by the same set of fit indices used in the measurement model. The structural model exhibited a fit

value satisfying the commonly recommended threshold for the respective indices, providing evidence of a good model. The path coefficients and the overall fit indices are shown in Figure 3. As illustrated in Figure 3, LISREL results provided significant support for hypotheses 1, 2, and 3, which were empirically validated from previous studies (Davis 1989; Venkatesh et al. 2003). Hypotheses 4 and 5 were significantly supported. Readiness for change is a strong predictor of both performance expectancy (hypothesis 4) and effort expectancy (hypothesis 5). Both organizational commitment and perceived personal competence had a significant effect on readiness for change (hypothesis 6 and 7). Finally, hypothesis 8 was strongly supported, indicating that perceived personal competence is an antecedent of organizational commitment.
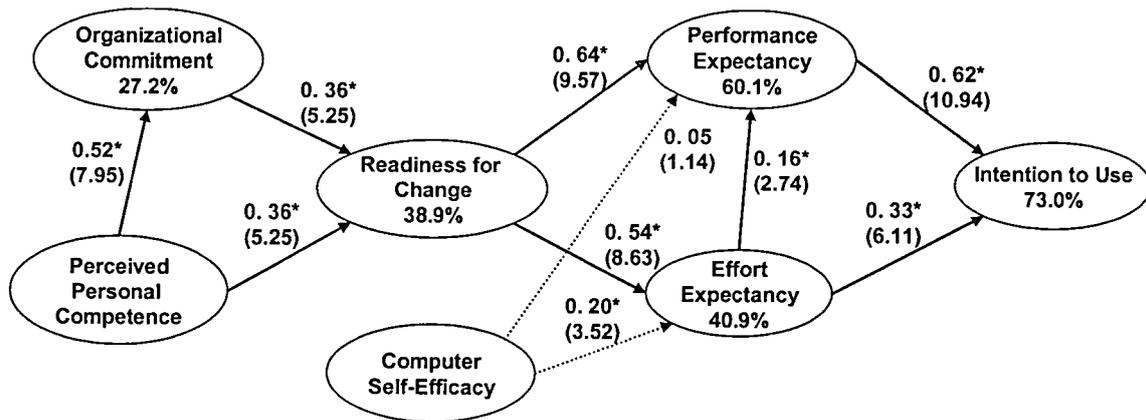
$$\frac{\chi^2}{df} = 570.651/394 = 1.448, GFI = 0.881, AGFI = 0.860, NFI = 0.976, NNFI = 0.991, CFI = 0.992, RMSR = 0.054, RMSEA = 0.040$$

* significant at the 0.01 level

Figure 3. LISREL test results

Discussion of Findings

In our analysis, we found significant support that behavioral intention to use the ERP system is affected by performance expectancy and effort expectancy about the system. This result is

consistent with most of the prior studies. In addition, it was also found that effort expectancy significantly affects performance expectancy, as suggested by many prior studies. As proposed in the research model, readiness for change significantly affected both performance expectancy and effort expectancy. It was also observed that readiness for change plays an important role in explaining two expectancies by identifying the increased variances; the addition of readiness for change to the model increased the explained variance by 22.7 percent in performance expectancy and 21.3 percent in effort expectancy. This study also examined how readiness for change can be formed. One mechanism for influencing readiness for change is through organizational commitment. Because organizational commitment basically reflects a belief in the values and goals of an organization, highly committed individuals are willing to accept organizational change efforts that are considered to be beneficial to the organization. Another mechanism for influencing readiness for change is through perceived personal competence in the work role. Perceived personal competence is similar to job motivation in that it is associated with the satisfying work experiences. Individuals with strong perceived personal competence are ready to accept organizational change efforts because they believe that organizational change will bring about a better work environment and thereby they will be able to accomplish difficult tasks under any settings. Furthermore, it was found significant support for the concept that perceived personal competence affects organizational commitment. This result indicates that when the perceived personal competence is well controlled, a state of readiness for change will be improved either directly or indirectly through organizational commitment.

This study has limitations that circumscribe the interpretation of the study findings. First, measures of all constructs were gathered at the same point in time and through the same instrument. Due to the cross-sectional nature of this study, causality can only be inferred via the theory so a longitudinal approach needs to be considered. Second, the antecedents for readiness

for change need to be further developed and refined. The focus of this study was on two personal traits that are frequently discussed in work-related environment. However, there are other factors that may be relevant. For instance, other work-related factors such as job satisfaction and job security can be considered to be further investigated.

Implications and Conclusions

This study proposes several implications for theory development as well as practice. Regarding theoretical development, there are some issues for researchers interested in further investigating readiness for change construct. First, in this study, a state of readiness for change was measured retrospectively. An alternative way of measuring this construct would be before and after a system is adopted and used. This suggests the need for a longitudinal study, to compare results with the cross-sectional approach applied in this study. In addition, given that readiness for change consists of three dimensions (*i.e.*, affective, cognitive, and behavioral intent), the role of individual dimensions in the nomological net is worthy to be examined. This allows researchers to isolate the effects of each dimension on expectancies about the system. Finally, in order to establish the relevance of readiness for change as a predictor of expectancies about the system, other key determinants of these expectancies might be considered in a future research; while this study incorporated computer self-efficacy into the research model as a key antecedent.

From the perspective of practice, there are some additional implications. First, despite the promised benefits, the ERP systems are considered to be inherently risky because they require significant organizational resources; and organizations often adjust slowly to complex enterprise system packages (Amoako-Gyampah and Salam 2004; Robey et al. 2002). Thus, the ERP systems are viewed as a completely different class of IT application compared with traditional IT systems (Amoako-Gyampah and Salam 2004). Cognizant of the different features of the ERP

systems, therefore, it is imperative that organizations understand the particular conditions under which they will be adopted and utilized. Investigating the role of employees' readiness for change might explain aspects of why many organizations installing and launching the same ERP system show the mixed results with their acceptance. This study sheds some light on this issue by showing that the readiness for change influences the expectancies about the system, which in turn affects the behavioral intention to use the system. Second, recently, many organizations have been increasingly aware of the concept of the Real-Time Enterprise (RTE) since Gartner Group has introduced it. The RTE is a business improvement concept that involves substantial changes to business processes using modern IT and telecommunications. The big challenge that many organizations have faced with IT for the RTE is also user resistance to the IT due to the change efforts (Latham and Lundy 2003). Acknowledging that the Gartner Group expects that the RTE will become an important IT investment area in the near future, this study's finding emphasizes the need for practicing managers in charge of the introduction of new type of change-enabler systems such as the RTE systems to focus on readiness for change of the organizational members as well.

The introduction of enterprise-wide systems calls for critical decisions that consider the large investments and the implications leading from the initiatives. Recognizing that the ERP systems are different from traditional IT systems and their implementation is overshadowed by a high failure rate, we focused attention on employees' views about the need for organizational change. As a result, the framework developed in this work incorporated a conceptual construct called readiness for change that captured beliefs about positive implications of organizational change. We found encouraging results on the role of readiness for change and its mediation effect on the behavioral intention to use the ERP systems. Acknowledging that the ERP systems continue to grow with promising potential benefits and new types of change-enabler systems such as the

RTE systems emerge, this study has value for theoretical as well as practical development; while several avenues for future research remain.

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Appendix: Questionnaire Items

Construct	Description
Intention to use (Hu et al. 2003)	
IU1	I intend to use the ERP system for performing my job as often as needed
IU2	To the extent possible, I would frequently use the ERP system in my job.
Performance expectancy (Davis 1989; Venkatesh et al. 2003)	
PE1	Using the ERP system enables me to have more accurate information.
PE2	Using the ERP system enhances my effectiveness in performing my task.
PE3	Using the ERP system is useful for performing my task.
PE4	Using the ERP system increases my productivity in performing my task.
PE5	Using the ERP system enables me to access more relevant information.
PE6	Using the ERP system enables me to acquire high quality information.
Effort expectancy (Davis 1989; Venkatesh et al. 2003)	
EE1	Learning to operate the ERP system is easy.
EE2	It is easy to remember how to use the ERP system.
EE3	I find it easy to get the ERP system to do what I want it to do.

EE4	My interaction with the ERP system is clear and understandable.
EE5	It is easy to become skillful at using the ERP system.
EE6	I find the ERP system to be easy to use.

Readiness for change (Dunham et al. 1989)

RC1	I look forward to changes at work.
RC2	Changes tend to stimulate me.
RC3	I find most change to be pleasing.
RC4	Change usually benefits the organization.
RC5	Most of my co-workers benefit from change.
RC6	Change often helps me perform better.
RC7	Other people think that I support change.
RC8	Change usually helps improve unsatisfactory situations at work.
RC9	I usually benefit from change.
RC10	I am inclined to try new ideas.
RC11	I usually support new ideas.
RC12	I often suggest new approaches to things.
RC13	I intend to do whatever possible to support change.

Organizational commitment (Allen and Meyer 1990)

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.
OC7	I think that people these days move from company to company too often.
OC8	One of the major reasons I continue to work for this organization is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain.

Perceived personal competence (Allen and Meyer 1990)

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.
PPC3	In this organization you are encouraged to feel that the work you do makes important contributions to the larger aims of 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.

Computer self-efficacy (Compeau and Higgins 1995)

I could complete a job using the information system...

SE1	if I had only the system manuals for reference.
SE2	if I had seen someone else using it before trying it myself.
SE3	if I could call someone for help if I got stuck.
SE4	if someone else had helped me get started.
SE5	if I had a lot of time to complete the job for which the information system was provide.
SE6	if I had just the built-in help facility for assistance.
SE7	if someone showed me how to do it first.
SE8	if I had used similar information systems like this one before to do the job.