

The role of perceived usefulness in the relationship between task — technology fit and individual job performance in ERP implementation — evidence from Vietnam's enterprises

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ABSTRACT

In this context, the aim of the study was to examine the role of perceived usefulness in the relationship between individual job performance and task – technology fit in ERP environment. The study was done by 225 individuals. The results of the PLS_SEM analysis revealed that task — technology fit was significantly and positively related to perceived usefulness and individual job performance in ERP environment. Furthermore, perceived usefulness was significantly to individual job performance in ERP context. The results of this study added to the empirical evidence in the application of background theories including TTF, TAM and TTF models combined, DeLone and McLean IS Success Model, and ECM. Besides, they also added to the theoretical background of ERP's success. Furthermore, they support for companies who are planning to use ERP systems and the ERP vendors and implementers become more knowledgeable about ERP's success and forecast success when using ERP systems. Based on these results, the enterprise can plan the application to improve the efficiency of ERP systems. At the same time, the ERP vendors and developers can better advise and support their customers when delivering and deploying ERP systems.

Key words: Enterprise resource planning (ERP), job performance, perceived usefulness, task – technology fit, Vietnam

INTRODUCTION

Companies all over the world have adopted enterprise resource planning (ERP) systems to integrate their business processes and stay competitive¹. Because ERP is information system (IS), user perceptions about an ERP system play an important role in both usage and success of ERP². Some organizations have applied the ERP system but users are non-adoption of the system³. In this case, job performance and job satisfaction are lower and turnover rates are higher⁴. In addition, if the job performance of individual is low, it will adversely affect the performance of organization⁵. As a critical indicator of ERP implementation success, it is important to examine possible factors that affect employee job performance⁴.

Bradford and Florin⁶ developed and tested a model of ERP implementation success which is measured by perceived organizational performance and user satisfaction. While the study of Bradford and Florin⁶ examined perceived organizational performance, the others explored the factors that can impact individual performance when using ERP systems such as Kositanurit *et al.* (2006), Park *et al.* (2007), Sykes *et al.* (2014), Sykes (2015)^{4,5,7,8}. Kositanurit *et al.* provides evidence that system quality, utilization, and ease of

use are the three important factors bearing on individual performance in ERP environment⁵. The study of Park *et al.* found that the users' ability to understand ERP knowledge influenced its performance and organizational support moderated the relationship between their absorptive capacity and performance⁷. Sykes *et al.* show workflow advice and software advice are associated with job performance⁴. Besides, that study found that the interactions of workflow and software get-advice, workflow and software give-advice, and software get- and give-advice impacted job performance. Similarly, Sykes disclosures both traditional support structures and peer advice ties were found to influence the various outcomes including system satisfaction, job stress, job satisfaction and job performance⁸. On the individual level, the factors that are proven to have an impact on the job performance in ERP environment include system quality, utilization, ease of use, users' ability to understand ERP knowledge, workflow advice, software advice, traditional support structures and peer advice ties. Similar to the above studies, this work seeks to examine post — implementation employee job performance. However, we look for the impact of other factors including perceived usefulness and

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task — technology fit on job performance of users in ERP context. Based on Task- Technology Fit theory (TTF)⁹⁻¹¹, TAM and TTF models combined¹², DeLone and McLean IS Success Model^{2,13} and ECM (Expectation–Confirmation Model)¹⁴, this study examined the role of perceived usefulness in the relationship between individual job performance and task — technology fit in ERP environment.

This article is structured as follows. First, we describe the theoretical background on individual job performance, perceived usefulness and task — technology fit. Next, we present the research methodology used. Then, we present the findings. Finally, we present some conclusions and further work.

LITERATURE REVIEW

Individual Job Performance

According to TTF theory, performance benefits improve a range of performance outcomes¹⁵. The specific outcomes that have been examined in prior TTF research include system use/intention to use, job performance, satisfaction with technology, opinions regarding a technology, appropriation changes made, decision efficiency, decision quality, decision strategy employed, joint profit attained, number of ideas generated, quality of solution, task completion time, task accuracy, ability to perform tasks, perceived ease of use, perceived usefulness, perceived playfulness, perceived risk...¹⁵.

High performance implies that there is a mix between improved efficiency, improved effective and/ or improved quality¹⁰. It was often confused with productivity¹⁶. However, it is actually measured by more global variables such as the quality of outputs, job knowledge, leadership, or judgment¹⁶. In the traditional office, job performance is largely established by scanning for employees' presence and through direct and indirect observations¹⁶.

There exists a wide range of employee outcomes in ERP implementation, such as systems satisfaction, job stress, job satisfaction, and individual job performance⁸. Job performance is a way to measure employee outcomes. Job performance is a good way of performing an employee's work⁸.

This study defined individual job performance in ERP environment was that the employee feels that with the help of ERP systems he/she can improve a range of performance outcomes.

Task — Technology Fit

Task — technology fit concept derives from the Task-Technology Fit theory (TTF)⁹⁻¹¹. According to TTF,

the task — technology fit represents the degree of matching or alignment between the capabilities of an information system and the demands of the tasks that must be performed¹⁵. Base on TTF, this study defined task — technology fit is the degree of relevance between the ability of ERP system and the tasks which an employee must perform.

Based on three theories including TTF, TAM and TTF models combined, and the DeLone and McLean IS Success Model (2013)¹³, this study develops the hypothesis H1. Firstly, according TTF, task — technology fit impact on performance benefit¹⁰ while individual job performance is used as an indicator of performance benefit¹⁵. Secondly, TAM and TTF models combined show that task — technology fit have significant effect on actual tool use¹². At the same time, the user behavior has an impact on the job performance¹⁷. Finally, Peter *et al.*¹⁸ suggested that task compatibility impact on the IS success. Task compatibility is the fit or consistency between the task and the IS that supports that task¹³. In this study, task — technology fit was defined similarly to task compatibility. Petter *et al.*¹⁸ measured the IS success based on the update DeLone and McLean² IS success model, including information quality, system quality, service quality, intention to use/ use, user satisfaction, and net benefits. In this study, individual job performance was considered an indicator of net benefits. Based on the above arguments, this study developed hypothesis H1.

This hypothesis is also supported by several studies, such as Norzaidi *et al.* (2009), Bhattacharjee (2001), Teo and Bing (2008), Kositanurit *et al.* (2006), D'Ambra and Wilson (2004a), D'Ambra and Wilson (2004b), Wongpinunwatana *et al.* (2000), Goodhue *et al.* (1997), Goodhue and Thompson (1995), Goodhue (1995), Henseler (2015)^{5,9,10,14,19-25}. In particular, Staples and Seddon¹⁸ show that task — technology fit had an impact on individual job performance in both kinds of IT use, voluntary and mandatory. In this study, if an enterprise is using an ERP system, employees are required to use it. So Staples and Seddon¹⁸ strongly support the hypothesis H1.

H1: The task – technology f it has a positive effect on the job performance of employee in ERP environment.

Perceived Usefulness

In TAM, perceived usefulness is “the degree to which a person believes that using particular system would enhance his or her job performance”²⁶ (p.320). Perceived usefulness is a dimension of performance expectancy in UTAUT²⁷. In this study, perceived usefulness of ERP systems was understood as the level at

which the user believes ERP systems delivers good results for their work.

According TTF, task – technology fit impact on performance benefit¹⁰ and perceived usefulness can be used as an indicator of performance benefit^{15,28}. Besides, Dishaw *et al.*¹² suggested TAM and TTF models combined that demonstrated task – technology fit to have a significant impact on perceived usefulness. Based on TTF, TAM and TTF models combined and some studies such as Norzaidi *et al.* (2009), Tjahjono (2009), Chang (2008), Wu *et al.* (2007), Klopping and McKinney (2004), Dishaw and Strong (1999), Goodhue (1995)^{9,10,19,29-33} hypothesis H2 is stated as follows:

H2: The task — technology fit has a positive effect on the perceived usefulness in ERP environment.

Based on three theories, namely TAM and TTF models combined, ECM (Expectation–Confirmation Model)¹⁴ and DeLone and McLean IS Success Model (2013)², this study developed the hypothesis H3. The first, according TAM and TTF models combined, perceived usefulness has effect on attitude toward use, then attitude toward use impact on intention to use, after that intention to use effect on actual tool use¹². Next, ECM shows that perceived usefulness impact on IS continuance intention¹⁴. Last, user expectations was proven to have an impact on the IS success². User expectations is the degree to which the user’s perceptions about the IS are consistent with the actual IS¹⁰. In this study, perceived usefulness was close to the user expectations used in Petter *et al.* (2013)¹³. In general, TAM and TTF models combined, ECM and DeLone and McLean IS Success Model (2013)² have shown that the perceived usefulness of the information system had a positive impact on user behavior. At the same time, the user behavior had an impact on the job performance¹⁷.

Furthermore, some studies include Rajan and Baral (2015), Furneaux (2012), Sternad and Bobek (2013), Soto-Acosta *et al.* (2013), Elkhani *et al.* (2014), Zhang *et al.* (2013), Keong *et al.* (2012), Norzaidi *et al.* (2009), Youngberg *et al.* (2009), Calisir *et al.* (2009), Lee *et al.* (2010), Chang (2008), Wu *et al.* (2007), Ramayah and May-Chiun Lo (2007), Seymour *et al.* (2007) and Amoako-Gyampah and Salam (2004) have also shown that the perceived usefulness of IS/ ERP had a positive impact on user behavior^{15,17,19,30,31,34-44}. In addition, Goodhue demonstrated that the perceived usefulness of IS has a positive impact on the individual job performance in IT context⁹. Based on the above arguments, this study hypothesized the following:

H3: The perceived usefulness of the ERP has a positive effect on the job performance of employee in ERP environment.

Figure 1 represents the proposed research model that was used for this research.

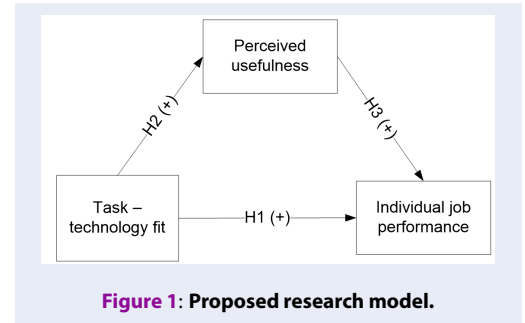


Figure 1: Proposed research model.

METHODOLOGY

Measures

All research constructs included in this study had multi-item scales derived from the relevant literature. Each item in the survey employed a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree), and a not applicable (NA) option was available for the respondents to choose. We now elaborate our measures for the constructs. This study accepted scale of the individual job performance in ERP environment (PER) from Goodhue and Thompson¹⁰. PER is a first – order construct and reflective measures with 2 items. We measured task – technology fit (TTF) using a 11- item scale adapted from Kositanurit *et al.*⁵ that captures the eight dimensions including currency (CURR), right data (RDAT), right level of detail (RDET), meaning (MEAN), ease of use (EOU), training (TRAI), authorization (AUT) and system reliability (REL). TTF is a high – order construct and reflective – reflective measures. The perceived usefulness (PU) was measured with 6 items adapted from Calisir and Calisir⁴⁵ (from the TAM model). PU is a first – order construct and reflective measures.

Data collection

This study was conducted using quantitative means as it aimed to validate the proposed relationships between factors affecting individual job performance in ERP context. The research instrument was used a questionnaire distributed to the end-users (employees). The data were collected from June 2017 to August 2017. The questionnaires were sent by email or postal mail to an initial sample of 500 employees who

are using ERP system. We collected 265 responses (response rate was 53 %). Baruch⁴⁶ points out that for surveys addressed to individual, the average response rate is 52.7%. Thus, the response rate of our study seems to be above average. Of the 265 employees, 225 employees from 49 companies gave usable responses at all points of measurement.

Table 1 presents the sample characteristics age, gender, education and average computer experience. The sample consisted of 161 (71.6 %) female and 64 (28.4 %) male. The **Table 1** shows that 75.5% of the sampled individuals were fewer than 35. In addition, 72% of the sampled individuals had bachelor degree. Average experience using an ERP system was 2.56 years.

The Issue of Common Method Bias

Because there was only one respondent for each individual, common method bias (CMB) was a potential problem. In this study, we took a number of steps suggested by Podsakoff *et al.*⁴⁷ to reduce the possibility of common method bias. Firstly, we used multiple items for each construct and ensured the neutral wording of the items. Secondly, we assured respondents of the anonymity of their responses and emphasized that there were no right or wrong answers; each of these actions enabled them to answer questions as honestly as possible. Thirdly, we separated the measurement of predictors and criterion variables in the questionnaire to diminish the respondent’s ability and motivation to use his/her prior responses to answer subsequent questions. Finally, we also used the Harman’s single-factor test and the marker variable approach to control for common method variance (CMV). Results are discussed in data analysis and results section.

DATA ANALYSIS AND RESULTS

Measurement model

We estimated the internal consistency reliability, convergent validity, and discriminant validity of each measurement scale to assess the measurement model. We used two criteria for internal consistency were composite reliability (CR) and Cronbach’s alpha. All the reflective constructs in our model show in **Table 2** have a Cronbach’s alpha over the cut off of 0.70, as suggested by Hair *et al.*⁴⁸. Similarly, a composite reliability (CR) of all the constructs is also higher than 0.7, as suggested by Fornell and Larcker⁴⁹, implying high internal consistency.

Convergent validity is verified through the t-statistic for each factor loading. In PLS_SEM, we can use an indicator’s outer loading. An outer loading should be above 0.7 and the t-statistic for each outer loading

significant⁴⁸. Results of measurement models show that the items including AUT1, AUT2, REL1, REL2 and TRAI have outer loading was above 0.7 but the t-statistic for each outer loading was not significant. As such, the AUT1, AUT2, REL1, REL2 and TRAI were excluded from the TTF scales. **Table 2** shows that results of final measurement models. All factor loadings are greater than the typical cut off value of 0.7⁴⁸ and significant at the $p < 0.001$ level. In this study, we also used the average variance extracted (AVE) to assess convergent validity. An AVE value of 0.50 or higher indicates that, on average, the construct explains more than half of the variance of its indicators. To establish discriminant validity, we used the HTMT criterion, Fornell – Larcker criterion and cross loadings. The results of discriminant validity are show in **Table 3**. Cross-factor loadings are reported in **Appendix A**.

The square root of the AVE of each construct should be higher than its highest correlation with any other construct⁴⁹. **Table 3** shows that the square root of AVE exceeds the correlation between other constructs. In addition, all HTMT of constructs are significantly smaller than 1²⁵. These results imply satisfactory discriminant validity.

Structural model

The structural model was examined to test the hypotheses. The R², which is generated for each regression equation, indicates the explanatory power or variance explained of the latent endogenous variable. **Figure 2** shows the structural model result.

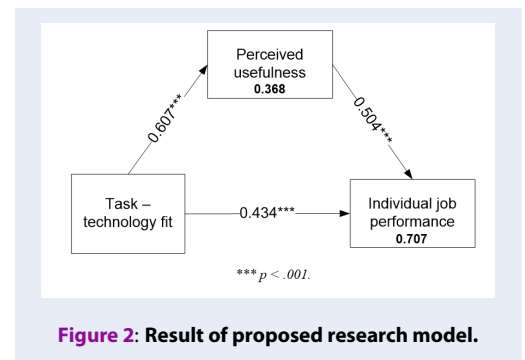


Figure 2: Result of proposed research model.

The PLS path analysis results show that task – technology fit was significantly related to individual job performance ($\beta = 0.434, p < 0.001$) and perceived usefulness ($\beta = 0.607, p < 0.001$) supporting hypotheses H1 and H2. Perceived usefulness was significantly related to individual job performance ($\beta = 0.504, p < 0.001$) supporting hypotheses H3.

Table 1: Sample characteristics (n = 225)

Category	Frequency	Percentages (%)	Category	Frequency	Percentages (%)
<i>Age</i>			<i>Education</i>		
< 35	170	75.5	Master	7	3.1
35 – 45	47	20.9	Bachelor	162	72
> 45	8	3.6	Colleges	43	19.1
<i>Gender</i>			Others	13	5.8
Male	64	28.4	<i>Average computer</i> 2.56		
56 Female	161	71.6			

The external variables including task – technology fit and perceived usefulness could explain 70.7 percent variance in individual job performance ($R^2 = 0.707$). Task – technology fit explained 36.8 percent of variance of perceived usefulness ($R^2 = 0.368$).

Next, we assessed the predictive relevance of the path model by Q^2 values. All Q^2 values are considerably above zero (Q^2 of individual job performance is 0.631 and Q^2 of perceived usefulness is 0.261), thus providing support for the model’s predictive relevance regarding the endogenous latent variables.

The final assessments address the f^2 and q^2 effect sizes. **Table 4** summarizes the results of the f^2 and q^2 effect sizes with respect to all the relationships in the model. Target constructs appear in the first row, whereas the predecessor constructs are in the first column. **Table 4** shows TTF has a large effect size of 0.405 (0.290) on PER and of 0.583 (0.404) on PU. Similarly, PU has a large effect size of 0.546 (0.345) on PER.

Additionally, the variance inflation factor (VIF) was assessed to check multicollinearity. The collinearity diagnostics given in **Table 5** shows that VIF for the independent variables higher than 0.20 (lower than 5) which further suggests that multicollinearity does not exist among the independent variables.

MEDIATION ANALYSIS

In this study, we examined a mediator variable, intervenes between two other related constructs. Specifically, we examined the role of perceived usefulness in the relationship from task – technology fit to individual job performance in ERP context. **Table 6** shows result of mediator variable. We find that both direct effect and indirect effect are significant. Our finding provided empirical support for the mediating role of perceived usefulness in the relationship from task – technology fit to individual job performance in ERP context.

Because path coefficient of the relationship from task – technology fit to individual job performance was 0.434 and significant, path coefficient of the relationship from task – technology fit to perceived usefulness was 0.607 and significant, and path coefficient of the relationship from perceived usefulness to individual job performance was 0.504 and significant, perceived usefulness represents complementary mediation of the relationship from task – technology fit to individual job performance in ERP context.

The Issue of Common Method Bias

We used the Harman’s single-factor test and the marker variable approach to control for CMV in PLS analysis. Result of Harman’s single-factor test by EFA shows that one factor only account for 40.537% of the total variance. In this case, CMV is not a serious problem⁵⁰.

The marker variable approach was conducted by using marker variable. The first stage, we involved survey questionnaire that had a question was “Do you really like black coffee?” – this question was a marker variable²⁴. The next stage, we used PLS to test path coefficient of the relationship from marker variable to other variable in proposal model including perceived usefulness, task – technology fit and individual job performance. Analysis results showed that all path coefficients of the relationships from marker variable to perceived usefulness, task – technology fit and individual job performance were less than 0.3 (-0.102, 0.094 and -0.060). This finding suggests that CMV was not a serious problem in this study.

Besides, we also based on VIF to test CMB. **Table 5** show that all VIFs resulting from a full collinearity test were lower than 3.3, the model can be considered free of CMB.

Table 2: Results summary of measurement models

Latent variable	Indicators	Convergent validity		Internal consistency reliability			Discriminant validity
		Loadings	Indicator reliability	AVE	Composite reliability	Cronbach's Alpha	
		> 0.7	>0.5	> 0.5	0.6–0.95	0.6–0.95	
PER	PER1: ERP systems system has a positive impact on my productivity in my job	0.966***	0.933	0.937	0.932	0.967	Yes
	PER2 : ERP systems is an important aid to me in the performance of my job	0.970***	0.941				
PU	PU1 : Using ERP systems in my job increased my productivity	0.884***	0.781	0.768	0.939	0.952	Yes
	PU2: I found ERP systems useful in my job	0.855***	0.731				
	PU3: Using ERP systems improved my job performance	0.854***	0.729				
	PU4: Using ERP systems enhanced my effectiveness on the job	0.913***	0.834				
	PU5: Using ERP systems in my job enabled to accomplish tasks more quickly	0.900***	0.810				
	PU6: Using ERP systems made it easier to do my job	0.849***	0.721				
CURR	CURR: The data provide by ERP systems is up-to-date enough for my purposes	1.000	1.000	1.000	1.000	1.000	Yes
RDAT	RDAT: ERP systems available to me is missing critical data that are very useful to me in my job	1.000	1.000	1.000	1.000	1.000	Yes
RDET	RDET : ERP systems maintains data at an appropriate level of detail for my group's tasks	1.000	1.000	1.000	1.000	1.000	Yes
MEAN	MEAN: The exact definition of data fields relating to my tasks is easy to find out	1.000	1.000	1.000	1.000	1.000	Yes
EOU	EOU1: It is easy to learn how to use ERP systems	0.953***	0.908	0.912	0.904	0.954	Yes
	EOU2: ERP systems I use is convenient and easy to use	0.957***	0.916				

***p <0.001.

Table 3: Results of discriminant validity

	Mean	SD	CURR	EOU	MEAN	PER	PU	RDAT	RDET
CURR	4.50	1.530	1.000						
EOU	4.428	1.383	0.390	0.955					
			0.410						
MEAN	4.62	1.346	0.387	0.535	1.000				
			0.387	0.562					
PER	5.029	1.327	0.351	0.716	0.634	0.968			
			0.362	0.779	0.657				
PU	5.231	1.157	0.314	0.576	0.532	0.767	0.876		
			0.324	0.621	0.547	0.817			
RDAT	3.96	1.565	0.143	0.301	0.147	0.110	0.026	1.000	
			0.143	0.317	0.147	0.114	0.049		
RDET	4.69	1.338	0.618	0.375	0.519	0.492	0.418	0.125	1.000
			0.618	0.394	0.519	0.508	0.433	0.125	

Number of the top rows: Fornell – Larcker criterion

Number of the below rows: HTMT criterion

Table 4: f² and q² effect sizes

	f ² effect sizes		q ² effect sizes	
	PER	PU	PER	PU
TTF	0.405	0.583	0.290	0.345
PU	0.546		0.404	

Table 5: Collinearity statistic

Construct	VIF
Task – technology fit (TTF)	1.583
Perceived usefulness (PU)	1.583

Table 6: Significance analysis of the direct and indirect effects

	Direct effect	95% confidence interval of the direct effect	t value	Significance (p<0.05)?	Indirect effect	95% confidence interval of the indirect effect	t value	Significance (p < 0.05)?
TTF -> PER	0.434	[0.314; 0.541]	7.32€	Yes	0.306	[0.230; 0.394]	7.14:	Yes

DISCUSSION

The results of this research supported most of the proposed relationships in the structural model. Most were consistent with the previous study results. Task – technology fit was significantly and positively related to perceived usefulness and individual job performance in ERP environment (H1 and H2 are supported). Perceived usefulness was significantly and positively related to individual job performance in ERP context (H3 is supported).

In ERP context, Kositanurit *et al.*⁵ found that task – technology fit was the important factor bearing on individual performance. The result of this study is similar to the result of Kositanurit *et al.*⁵. The new findings of this study are that we provided empirical evidence on the impact of task – technology fit to perceived usefulness and of perceived usefulness to individual job performance in ERP environment.

CONCLUSIONS

This study added to the empirical evidence in the application of background theories including TTF, TAM and TTF models combined, DeLone and McLean IS Success Model, and ECM. Besides, the results of this study also added to the theoretical background of ERP's success, namely, the individual job performance of employee in ERP context. Specifically, factors including perceived usefulness and tasks and technology fit have a significant impact on the individual job performance employee in ERP context. Furthermore, the results of this study help companies who are planning to use ERP systems and the ERP vendors and implementers become more knowledgeable about ERP's success and forecast success when using ERP systems. In this study, the ERP success was measured by job performance of employee. The factors that have been tested are the impact on the individual job performance of employee in ERP context including perceived usefulness and tasks and technology fit. Based on these results, the enterprise can plan the application to improve the efficiency of ERP systems. At the same time, the ERP vendors and developers can better advise and support their customers when delivering and deploying ERP systems.

This study has a few limitations. ERP implementations are complex and take time to complete^{51,52}. However, this study was restricted to the shakedown phase of the implementation, which is widely acknowledged to be the most critical in terms of continuation or abandonment of ERP⁵³. It could be that

these findings might change over time, with some support structures gaining or losing influence on the outcomes of interest. Work that gives greater consideration to time would enrich our understanding of this phenomenon. Thus, an area for possible future work would be to examine ERP implementations and support structures over a significantly longer period of time—that is, across all phases of an implementation. Besides, this study collected data from ERP user in many kinds of enterprises; therefore, there is a restriction related to applicability of this study for each specific enterprise group.

This study chose an approach for the employee to assess his or her job performance in ERP context that is not evaluated by the supervisor of the employee. Future research should collect data through supervisors to measure the job performance of the employee in ERP context.

ABBREVIATIONS

AVE: Average variance extracted

CMB: Common method bias

CMV: Common method variance

CR: Composite reliability

ECM: Expectation–Confirmation Model

EFA: Exploratory factor analysis

ERP: Enterprise Resource Planning

IS: Information system

HTMT: Heterotrait-monotrait ratio of correlations

PLS_SEM: Partial Least Squares Based Structural Equation Modeling

TAM: Technology Acceptance model

TTF: Task-Technology Fit theory

UTAUT: Unified theory of acceptance and use of technology

VIF: Variance inflation factor

COMPETING INTERESTS

The authors declare that they have no conflicts of interest.

AUTHORS' CONTRIBUTIONS

Vo Van Nhi and Pham Tra Lam have contributed in conducting experiments, getting hold of data and writing the manuscript. Pham Tra Lam has contributed explanation of data and revising the manuscript.

A. APPENDIX

Cross loading

	CURR	EOU	MEAN	PER	PU	RDAT	RDET
CURR	1.000	0.390	0.387	0.351	0.314	0.143	0.618
EOU1	0.358	0.953	0.480	0.633	0.503	0.311	0.328
EOU2	0.386	0.957	0.542	0.732	0.595	0.264	0.387
MEAN	0.387	0.535	1.000	0.634	0.532	0.147	0.519
PER1	0.290	0.694	0.626	0.966	0.721	0.110	0.418
PER2	0.386	0.692	0.601	0.970	0.762	0.103	0.531
PU1	0.251	0.513	0.467	0.723	0.884	0.044	0.379
PU2	0.239	0.420	0.442	0.633	0.855	-0.060	0.422
PU3	0.318	0.469	0.358	0.633	0.854	0.039	0.356
PU4	0.292	0.485	0.469	0.679	0.913	0.013	0.382
PU5	0.250	0.535	0.543	0.687	0.900	0.030	0.342
PU6	0.302	0.593	0.506	0.669	0.849	0.064	0.323
RDAT	0.143	0.301	0.147	0.110	0.026	1.000	0.125
RDET	0.618	0.375	0.519	0.492	0.418	0.125	1.000

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