

The Moderating Effect of Organizational Learning Culture on Individual Motivation and ERP System Assimilation at Individual Level

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Abstract—This study contributes to the enterprise resource planning (ERP) system assimilation theory by providing an enriched understanding about how organizational learning culture influences end users' usage degree in post-implementation stage. Empirical data collected from 141 ERP users showed that both intrinsic motivation and perceived usefulness has positive impact on individual assimilation level of ERP systems. We further observe significant moderating effect of organizational learning culture on the association between individual motivations and individual assimilation level of ERP technology. Our findings highlight the importance of organizational learning culture and provide some guidelines for the firms to facilitate appropriate organizational culture, so as to enhance the intrinsic and extrinsic motivators of ERP users, promote the employees' fully utilization of the ERP software, and achieve business benefits with the assimilation of ERP systems. Theoretical and practical implications of the study are discussed along with its limitations.

Index Terms—enterprise resource planning (ERP), individual level assimilation, organizational learning culture, intrinsic motivation, perceived usefulness

I. INTRODUCTION

ERP systems have become a necessary infrastructure for the enterprise information construction. However, what confused most enterprises are the truth that most companies did not achieve the promising benefits of the ERP investments. After making significant investments in ERP software, the firm is seeking to achieve operational efficiency improving, cost falling and organizational performance enhancing. However, the yields, compared to the huge investment, are far from expected benefits. Some companies have had to scale back their projects and accept minimal benefits, or even stop the assimilation of the ERP system after the implementation. This phenomenon is not occasional, and a survey shows that 33% of the enterprises either stop using or reimplement ERP systems within one or two

years [1].

One important reason attributed to these low benefits is employees' underutilization of the ERP systems [2] which has received much attention from scholars and practitioners in recent years. Jaspersen et al. [2] pointed out that organizations may be able to achieve considerable economic benefits by successfully inducing and enabling users to enrich their use of ERP systems during the post-implementation stage. Therefore, it is of great significance to investigate what factors influence users to (continuously) exploit and extend the functionality built into ERP software in ERP system assimilation stage.

Some scholars have begun to investigate the key factors, such as intrinsic motivation and extrinsic motivation (perceived usefulness), influencing individual usage behavior [3-11]. While prior research has primarily focused on investigating the effect of individual motivation on user acceptance of the system during information system (IS) adoption and implementation phase, few literatures have explicitly explored such individual motivation in the post-implementation phase, with the exception of Liu et al. [3] who argued that intrinsic motivation and perceived usefulness are two key drivers of individual ERP assimilation using a case study method. However, Liu et al. [3] has not validated these propositions with empirical data. More importantly, prior research has largely ignored the effect of the various aspects of organizational context on user assimilation to the IS systems, especially that of organizational culture.

Given that ERP system is a complex integrated system, it is very difficult to achieve higher level ERP assimilation without a good learning culture. Therefore, additional insight into how organizational learning culture affects the degree of ERP users' assimilation in post-implementation stage is crucial for practice, research, and theory building. Thus, drawing upon Liu et al. [3]'s research published on *European Journal of Information Systems*, we tested the effect of motivation factors on the

individual assimilation level of ERP software and what's important is that we introduce organizational learning culture variable as moderator and investigate its moderating effect on the association between users' motivation and the level of individual assimilation of ERP technology.

The remainder of the paper is organized as follows. The first part provides a brief review of the literature related to individual level ERP assimilation, motivation theory, and organizational learning culture theory. Then, we develop research hypotheses and propose a theoretical model that highlights how organizational learning culture moderates the relationship between the user's motivation and individual level ERP assimilation. This is followed by a description of our research design and data collection, as well as analyses of the data using structural equation modeling. Finally we provide theoretical and practical implications of the findings and limitations of the study.

II. LITERATURE REVIEW

A. Individual level ERP Assimilation

The concept of ERP assimilation originates in the concept of technology assimilation. Purvis et al. [12] defined technology assimilation as "the extent to which the use of technology diffuses across the organizational projects or work processes and becomes routinized in the activities of those projects and processes". Gallivan [13] divided the concept of assimilation into two sub-constructs: breadth and depth. Breadth refers to the number of users and percentage of business processes that are using the technology. Depth explains how extensively the technology is used by the users and its vertical impact on the business activities. Most prior literatures conceptualized the assimilation from the organizational level, with the exception of Liu et al. [3] who defined the individual level ERP assimilation as 'the degree of cognitive understanding of ERP technology and the extent to which the technology is used beyond routine tasks by an individual user'.

Although some literatures have emerged that shed light on IT assimilation from organizational level [14-16], research on the assimilation level of individual users is scant. One of studies that touched individual user assimilation of ERP software is by Liu et al. [3] who argued that ERP users can be classified into three categories: transactional users, power users, and VIP users, and the extent of individual level assimilation directly impacts the extent of organizational level assimilation. In addition, there are many studies on the key factors influencing individual post-implementation assimilation. Park et al. [4] pointed out that users' absorptive capacity for ERP knowledge is positively related to their performance of ERP usage. Ke and Wang [5] examined how motivations (i.e., extrinsic, intrinsic and normative motivation) affect user performance and satisfaction with enterprise system (ES) feature exploration. Using the case study method, Liu et al. [3] identified four key drivers: influence of supervisors,

performance evaluation schemes, intrinsic motivation, and perceived usefulness, as well as two significant moderators: job specifications and individual absorptive capacity.

B. Motivation and Users' Behavior

The concept of motivation plays an important role in research concerning the determinants of individual behavior in organizations [17]. Scholars have proposed several conceptual perspectives, and one useful perspective posits that behavior can be both extrinsically and intrinsically motivated [18]. Intrinsic motivation refers to the fact of doing an activity for its own sake: the activity itself is interesting, engaging, or in some way satisfying [18]. Extrinsic motivation refers to the performance of an activity because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself, such as improved job performance, pay, or promotions [19].

The concept of motivation appears in lots of IS studies. Some scholars investigated the role of motivation in user technology acceptance [19-24, 8]. There are also some literatures concerning the impact of motivations on ERP usage behavior [3, 5, 6, 7, 9, and 25]. Chang et al. [25] summarized three categories factors that influence ERP systems usage: individual, technological and organizational characteristics. Individual characteristics consist of perceived consequence (extrinsic motivators) and affect (intrinsic motivators). In the case of individual level ERP assimilation, Liu et al. [3] provided clear evidence that a strongly self-motivated user could achieve a higher level of assimilation and perceived usefulness (extrinsic motivators) makes users to trust and depend on an ERP system, motivates them to learn more about the system, and eventually leads to higher levels of assimilation. However, the relationships between user's motivation and individual ERP assimilation have not been validated with empirical data.

C. Organizational Learning Culture

Like organizational culture, organizational learning culture is also a very elusive concept due to the variety of perspectives that come under scrutiny in the academic literature [26]. Prior empirical studies validating the dimensions of organizational learning culture are rare (three exceptions being Nemanich and Vera [27], Thompson & Kahnweiler [28] and Yang [29]). Drawing from prior studies, Nemanich and Vera [27] identified three social dimensions which are consistently highlighted as values of cultures that favor learning: psychological safety, openness to diversity of opinion and participation in decision making. In my study, we employ Nemanich and Vera [27]'s safety, openness, and participation to represent dimensions of the higher-order construct of organizational learning culture. Psychological safety refers to the degree to which team members feel they are safe from punishment for risk taking; openness to diversity of opinions assesses the degree to which employees feel they are encouraged to bring forth different ideas; participation in decision making encourages team members to become more

involved in determining future strategies [27].

In this paper, we conceptualize and measure organizational learning culture in terms of perceived organizational learning culture, which means the employee's perceptions of the organization's values. Here, we focus on perceived organizational learning culture because our conceptual objective is to explain why organizational learning culture relates to employee's motivation, as represented by intrinsic motivation and perceived usefulness. These motivations are subjective and therefore should relate more strongly to the organizational values as seen by the employee than as seen by other members of the organization.

The prior literature has revealed the importance of a learning culture in improving individual knowledge, encouraging exploration and tolerating mistakes [30]. Egan et al. [31] argued that the culture and environment of an organization can influence the types and numbers of learning-related events and employee job satisfaction as well as employee motivation to transmit newly acquired knowledge to the workplace context. In addition, Liu et al. [3] proposed that a strong learning culture in an organization will amplify the intrinsic motivations of users, and lead to higher levels of ERP assimilations. However, how and why organizational learning culture influences ERP assimilation is still unexplored. Therefore, it is of great significance to investigate how organizational learning culture mobilizes user motivations to explore and learn the functions of ERP software.

III. THEORY AND HYPOTHESES DEVELOPMENT

A. The Role of Perceived Usefulness

Perceived usefulness (PU) is typically viewed as the most important extrinsic motivator toward information system use [3, 19, 24, 25, 32 and 33]. Chang et al. [25] suggested that perceived near-term consequences which closely resembles the perceived usefulness have a positive impact on the ERP system usage. Using a multi-case study method, Liu et al. [3] provided plenty of evidence that perceived usefulness makes users to trust and depend on an ERP system, motivates them to learn more about the system, and eventually leads to higher levels of assimilation.

In addition, the expectancy theory postulates that an individual chooses a behavior based on the desirability of the rewards [34]. From an extrinsic motivational perspective, behavior is driven by its perceived values and benefits derived. Therefore, the higher the perceived value of the consequences, the higher is the likelihood that a person will perform the behavior [25]. In other words, if an ERP user conceives the ERP systems to be useful or beneficial, the ERP user is more likely to have extrinsic motivation to learn and explore it, leading to higher level individual user assimilation of ERP knowledge. Thus, we hypothesizes that:

H1: The perceived usefulness of ERP applications by individual users has a significant impact on the level of individual assimilation of ERP technology.

B. The Role of Intrinsic Motivation

Many behaviors have positive benefits, but are unpleasant to perform. Therefore, another factor that influences the use of the ERP systems is intrinsic motivation. It is well known that, when people are intrinsically motivated, they become effective and productive [35]. Moreover, intrinsic motivation can result in high-quality learning and creativity [36]. In particular, a high level of motivation allows the user to exert more intensive and persistent effort on the task of ERP function exploration, which in turn leads to higher level ERP assimilation. Therefore, if an ERP user perceives the use of the ERP software as enjoyable, he or she is more likely to expend effort in ERP learning and explore the underlying ERP functions. As such, we expect that a user's motivation has a significant effect on his or her ERP assimilation level in learning ERP knowledge. Thus, we hypothesizes that:

H2: An individual's intrinsic motivation for career and learning has a significant impact on the level of individual assimilation of ERP technology.

C. The Moderating Role of Organizational Learning Culture

We employ Nemanich and Vera [27]'s safety, openness, and participation to represent dimensions of the higher-order construct of organizational learning culture. The prior literature has revealed the importance of a learning culture in improving individual knowledge, encouraging exploration and tolerating mistakes [30]. It is established that organizational learning environment are effective in motivating individuals to devote to more efforts to explore and learn relevant tasks [31]. In the following sections, we will investigate how the organizational culture mobilizes user motivations to explore and learn ERP functions.

Organizational learning culture which values openness to communication and collaboration in the teamwork, which is a good way for exchange of ideas and information for discussion [26], the users will have more commitment to the organization and more motivations to learn the ERP systems. It is believed that learning culture plays an important role in ERP implementation and assimilation [37]. With a similar logic, we argues that a stronger learning culture in organization will enable, but not directly lead to, higher level individual ERP assimilation. This is because, as a contextual factor, learning culture may be able to influence the direction and extent of processes that are already happening in the organization, but not to cause the processes to happen, like assimilation. This fits the classic definition of moderating effect. Thus, we hypothesizes that:

H3: In organizational settings, the relationship between intrinsic motivation and the level of individual ERP assimilation is moderated by the user's perceived organizational learning culture, such that the relationship will be stronger in high organizational learning culture than in low organizational learning culture.

In addition, when an ERP user perceives a high level of organizational learning culture which values

participation in decision making in post-implementation phase, he or she can decide what functions to explore and how to explore these functions. Thus, the user would sense more usefulness of the ERP software and more control over the expected outcomes and therefore mobilize users' extrinsic motivation to assimilate the ERP systems. Meantime, with a higher level of organizational learning culture, the users will have more opportunities to take part in the ERP decision-making, communicate frequently with other ERP users, thus potentially increasing perceptions of benefits and usefulness of ERP systems, which will lead to more extrinsic motivation to learn and explore ERP systems. Thus, we hypothesises that:

H4: In organizational settings, the relationship between perceived usefulness and the level of individual ERP assimilation is moderated by the user's perceived organizational learning culture, such that the relationship will be stronger in high organizational learning culture than in low organizational learning culture.

The proposed research model is described in figure 1. In the following sections, we will test these hypotheses with large sample empirical data.

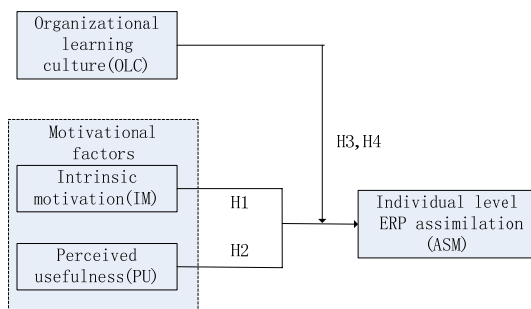


Figure 1. Research Model

IV. RESEARCH METHODOLOGIES

A. Survey Development

The survey instrument was developed based on the research model as shown in Figure 1. Measurement items for each construct in the model are based on a 7-point Likert scale. All of the items were adapted from the extant literature, thereby ensuring the validity and reliability of the measurement model. Since most literatures were written in English, we had to translate questionnaire items carefully into Chinese and a panel of experts examined the face validity of the items. Table I shows the constructs and the primary sources of the measurement items.

The measurement of organizational learning culture needs a detail explanation. Drawing from Nemanich and Vera [27]'s study, organizational learning culture was measured from three dimensions including psychological safety, openness to diversity of opinion and participation in decision making, and three reflective items are used to measure each construct. Empirical studies suggest that the three dimensions of organizational learning culture are highly correlated with each other [27]. Thus

following Nemanich and Vera[27]'s study, the items for each sub-dimension of organizational learning culture were first averaged to form a synthesized score, then the three synthesized score in correspondence with the three organizational learning culture dimensions were used to measure organizational learning culture as reflective items.

TABLE I. CONSTRUCT OPERATIONALIZATION

Latent Construct	Definition	Primary Source of the measurement items
Intrinsic motivation (IM)	The fact of doing an activity for its own sake: the activity itself is interesting, engaging, or in some way satisfying.	[38]
Perceived usefulness (PU)	The degree to which a person believes that using a particular system would enhance his or her job performance.	[39]
Organizational learning culture (OLC)	Basic assumptions of learning cultures include that human beings need to be proactive problem solvers, that human nature is basically good, that communication and information are central to organizational well-being, and that diversity is desirable at the individual and team levels.	[27] [40] [41] [42]
Individual level ERP assimilation (ASM)	The degree of cognitive understanding of ERP technology and the extent to which the technology is used beyond routine tasks by an individual user.	[3]

B. Data Collection

We used field survey to test the proposed research model. A pretest was initially conducted to examine the content validity of the questionnaire, and domain experts were invited to evaluate the specific items of the questionnaire and find if the items are clear and easy to understand. One item of intrinsic motivation is also revised because of its obscurity. 45 ERP users from 2 firms in Harbin, China were invited to participate in the pilot study to statistically examine the construct validity of the variables and ultimately 43 valid questionnaires were received. SmartPLS analysis results suggest that most of the items load high on corresponding construct, and one item of psychological safety with factor loading lower than 0.7 was deleted from the questionnaire.

Our study is at individual level, and the survey was administered to ERP users in Chinese companies which have implemented ERP software at least 1 year prior to our study. A sample was drawn from the clients of UFIDA (known as UFSOft before 2005), the vendor with the largest market share in China's ERP market [43]. We requested a marketing manager at UFIDA to randomly distribute 200 questionnaires to 10 client companies of UFIDA. Of the 200 questionnaires distributed, 162 questionnaires were returned and 141 questionnaires were completed and usable for data analysis, showing an effective response rate of 70 percent. The demographics of the respondents are shown in Table II.

TABLE II.
RESPONDENT PROFILES

Category	Subcategory	Count	Percentage (%)
Sex	Male	47	33
	Female	94	67
Age	<30	51	36
	30-50	85	60
	>50	5	4
Education	High school	6	5
	Junior college	58	41
	Undergraduate	72	51
	Graduate	5	4
Job type	Senior managers	0	0
	Division managers	5	4
	Team leader	17	12
	Employee	119	84
ERP experience	<5 years	58	41
	5-10 years	41	29
	>10 years	42	30
Work experience	<5 years	42	30
	5-10 years	15	10
	>10 years	84	60

V. DATA ANALYSIS AND HYPOTHESES TESTING

A. Structural Equation Modeling

To analyze both the measurement quality and the path model for hypothesis testing, we used SmartPLS for data analysis. Firstly, we assessed the measurement model to ensure the internal consistency reliability, convergent validity and discriminant validity of the measurements. Then we analyzed the structural model to test the research hypotheses as well as the overall quality of the structural model.

B. Quality of Measurement Model

The quality of measurement model is usually assessed in terms of convergent validity, discriminant validity and internal consistency reliability.

Convergent validity was examined by checking the average variance extracted (AVE). AVE was calculated by averaging the percentage of variance extracted of each construct from its indicators, and it was reported that AVE should be 0.5 or greater to suggest adequate convergent validity [44]. As Table III illustrates, except for one item of perceived organizational learning culture, item loadings of all the other constructs are greater than 0.7, most of them exceeding 0.9, and the t-test results are all significant at the 0.01 level, indicating that all the measures consistently represent the same latent construct.

Discriminant validity is defined as the extent to which measures of the different model constructs are unique. There are mainly two techniques that have been used for assessing discriminant validity. In this paper, we test the discriminant validity by comparing the square root of the average variance extracted (AVE) of each construct and this construct's correlation with other constructs. Discriminant validity is supported if the square root of the constructs' AVE is greater than the correlations of the construct with all other constructs [45, 46]. As shown in Table IV, the diagonal values are AVEs of each construct, which suggest good discriminant validity. In addition, table V provides the cross loadings of the items on all latent variable, also indicating good discriminant validity.

Internal consistencies are considered as acceptable if each construct's composite reliability, Cronbach's alpha score has exceeded 0.7, implying that all the measures consistently represent the same latent construct [47]. As shown in Table III, the lowest composite reliability is 0.835 and the lowest Cronbach's alpha is 0.779, with all higher than the recommended minimum value of 0.7 [48, 49], indicating acceptable reliability of the measurement for each construct.

TABLE III.
MEASUREMENT QUALITY INDICATORS

Latent construct	Items	Loadings	Composite Reliability	Cronbach's Alpha	AVE
Perceived Usefulness	PE1	0.937	0.948	0.918	0.859
	PE2	0.917			
	PE3	0.926			
Intrinsic Motivation	IM1	0.915	0.950	0.921	0.864
	IM2	0.917			
	IM3	0.955			
Organizational Learning Culture	OLC1	0.667	0.835	0.779	0.635
	OLC2	0.984			
	OLC3	0.703			
Individual ERP Assimilation	ASM1	0.881	0.955	0.937	0.843
	ASM2	0.965			
	ASM3	0.956			
	ASM4	0.866			

TABLE IV.
CORRELATIONS BETWEEN EACH TWO CONSTRUCT

	Individual ERP assimilation	Perceived Usefulness	Intrinsic Motivation	Organizational Learning Culture
Individual ERP assimilation	0.918			
Perceived Usefulness	0.623	0.927		
Intrinsic Motivation	0.657	0.721	0.929	
Organizational Learning Culture	-0.127	-0.164	-0.228	0.797

TABLE V.
CROSS LOADINGS OF THE CONSTRUCT

	Individual ERP assimilation	Perceived Usefulness	Intrinsic Motivation	Organizational Learning Culture
ASM1	0.881	0.475	0.576	0.093
ASM2	0.965	0.620	0.610	-0.026
ASM3	0.956	0.584	0.700	-0.091
ASM4	0.866	0.604	0.511	-0.464
EM1	0.537	0.937	0.661	-0.276
EM2	0.624	0.917	0.714	-0.051
EM3	0.562	0.926	0.624	-0.145
IM1	0.583	0.639	0.915	-0.292
IM2	0.650	0.707	0.917	-0.126
IM3	0.591	0.660	0.955	-0.227
OPC	-0.0156	-0.315	-0.388	0.667
PD	-0.145	-0.232	-0.290	0.984
PS	-0.034	0.284	0.231	0.703

C. Structural Path Analysis

The primary quality indicators for structural model in component based PLS techniques are the R^2 values of the endogenous variables [46]. The R^2 values of the endogenous variables measure how much of the variances are explained by the exogenous constructs specified in the model. Figure 2 presents the results of the “main effect” model using SmartPLS. The organizational learning culture was considered as a control variable. The R^2 value for the dependent variable of individual level ERP assimilation is 0.478, indicating that the variables in the model explained about 48% of the variance in the dependent variable, which is high by the standard of structural equation modeling. The relationship between intrinsic motivation and individual ERP assimilation (H1) is supported ($\beta=0.438$, $p<0.01$), and the link between perceived usefulness and individual ERP assimilation (H2) also statistically significant ($\beta=0.310$, $p<0.01$).

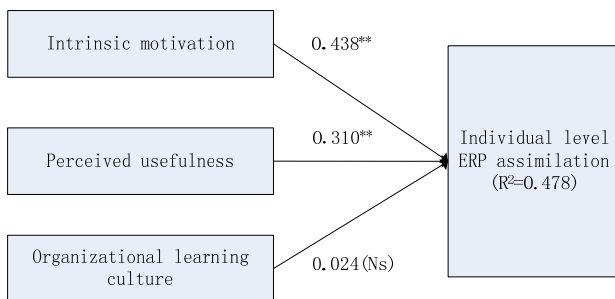


Figure 2. Main effect model: organizational learning culture as a control variable (** represents $p<0.01$, * represents $p<0.05$, ns represents not significant).

In this section, we will test the moderating effect of organizational learning culture on the association between intrinsic motivation and individual ERP assimilation. Testing moderating effects involves comparing a “main effect” model and a “moderating

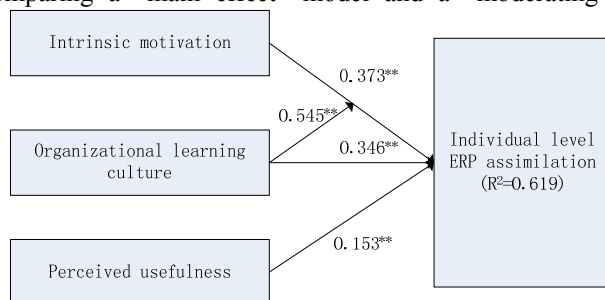


Figure 3. Moderating effect of organizational learning culture on intrinsic motivation and individual level ERP assimilation (** represents $p<0.01$, * represents $p<0.05$, ns represents not significant).

In the following section, we will test the moderating effect of organizational learning culture on the relationship between perceived usefulness and individual ERP assimilation. Firstly, we calculated the effect size applying the following formula suggested by Cohen [51], as in Chin et al. [11]: $F^2 = [R^2 \text{ (interaction model)} - R^2 \text{ (main effect model)}] / [1 - R^2 \text{ (main effect model)}]$. We

effect” model [47, 50]. The interaction terms were calculated by multiplying the moderator (organizational learning culture) by the predictor variables (intrinsic motivation and perceived usefulness). The moderating effects model included these interaction variables, while the main effects model did not. Overall, the main effect model accounts for 47.8% of the variance of individual ERP assimilation. The path coefficient between intrinsic motivation and individual ERP assimilation is 0.438, and that between perceived usefulness and individual ERP assimilation is 0.310.

Next, we examined the interaction effect model including organizational learning culture as a moderator. Figure 3 indicated that all paths exhibit a P-value of less than 0.01 and, overall, the model accounts for 61.9% of the variance of individual ERP assimilation. The path coefficient between intrinsic motivation and individual ERP assimilation is 0.373 and that between organizational learning culture and ERP assimilation is 0.346.

After analyzing the main effect model and moderating effect model, we compared the R^2 of both models in order to assess the interaction effect [47]. The difference between the R-squares is used to assess the overall effect size f^2 for the interaction, where 0.02, 0.15, and 0.35 have been suggested to be small, moderate, and large effects, respectively. We then calculated the effect size applying the following formula suggested by Cohen [51], as in Chin et al. [11]: $F^2 = [R^2 \text{ (interaction model)} - R^2 \text{ (main effect model)}] / [1 - R^2 \text{ (main effect model)}]$. We thus obtained an effect size (F^2) of 0.27 which lies between the medium and large effect size. Figure 3 shows that the inclusion of the interaction effect with a strong beta of 0.545 increases R^2 for individual ERP assimilation to 0.619. Therefore, organizational learning culture has a medium significantly effect on the relationship between intrinsic motivation and individual assimilation of ERP system (H4).

thus obtained an effect size (F^2) of 0.098 which lies between the small and medium effect size. Figure 4 shows that the inclusion of the interaction effect with a strong beta of 0.379 increases R^2 for individual ERP assimilation level to 0.529. Therefore, organizational learning culture has a small significantly effect on the relationship between perceived usefulness and individual ERP system assimilation (H3).

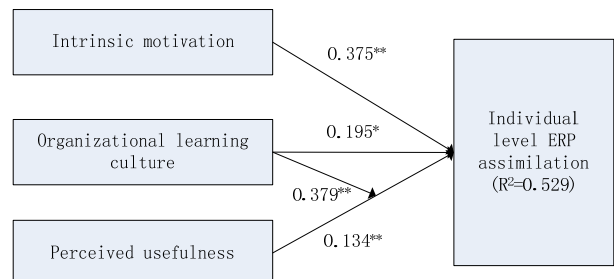


Figure 4. Moderating effect of organizational learning culture on perceived usefulness and individual level ERP assimilation (** represents $p<0.01$, * represents $p<0.05$, ns represents not significant).

VI. DISCUSSIONS

A. Theoretical Implications

The theoretical contributions of this study are mainly two folds.

Firstly, this study contributes to the research of ERP system assimilation by testing the effect of individual motivation on the individual assimilation level of ERP software. This study identified the relative importance of intrinsic motivation and perceived usefulness in determining the assimilation level of individual ERP users.

Our data analysis indicates that both intrinsic motivation and perceived usefulness has positive impact on the individual assimilation level of ERP technology. Although Liu et al. [3] has proposed the important role of intrinsic motivation and perceived usefulness, they didn't test the effect with empirical data. This study highlights the importance of individual users' motivation in facilitating the individual level ERP assimilation, thus to extend the existing studies of individual ERP assimilation theory.

Secondly, the moderating role of organizational learning culture in ERP assimilation study is also investigated, providing a richer understanding of how organizational factors influence the assimilation outcome. The results of this study reveal that organizational learning culture has a medium moderating effect on the relationship between intrinsic motivation and individual ERP assimilation, while a small but significant effect on the relationship between perceived usefulness and individual ERP assimilation. Although culture theory has been used to explain an extensive range of social behaviors and outcomes such as firm effectiveness and firm performance, few studies have been conducted in ERP context, and what is the specific role of organizational learning culture plays in ERP assimilation phase is still unknown. Therefore, this study further enriches the ERP assimilation theory.

B. Practical Implications

From a managerial perspective, this study provides some guidance for managing individual level technology assimilation in the post-implementation stages of the life-cycle. To achieve a higher level of individual assimilation of ERP systems, managers can cultivate employees' motivation toward IS use by taking several actions. Firstly, managers can make the needed resources available to assist employees when they encounter difficulties in using an information system. Secondly, managers can help employees to set up meaningful performance objectives that could be accomplished through employees' effective information system usage. Finally, the firm should provide effective training to ERP users in which the usefulness of the software to the users should be clearly articulated and demonstrated in addition to the technical skills.

The data analysis also showed that a strong learning culture can amplify the individual's motivation to learn and assimilate the ERP systems. This requires the top executives to set up some channels for employees to

express opinion and participates the decision-making, thus to promote an organizational learning culture that focuses on psychological safety, openness to diversity of opinion and participation in decision making, leading to more ERP users' intrinsic and extrinsic motivations to learn and assimilate the ERP systems.

VII. CONCLUSIONS

In this study, we developed a research model in the context of ERP assimilation by integrating individual users' motivation and organizational learning culture and investigating their impact on the individual assimilation level of ERP technology. Using survey data and structural equation modeling, we tested the hypotheses on how organizational learning culture could influence individual's intrinsic motivation and perceived usefulness towards assimilating ERP systems. The hypothesized relationships are totally supported by the empirical data. We confirmed that intrinsic motivation and perceived usefulness indeed significantly influence the individual assimilation level of ERP technology. More importantly, we showed how perceived organizational learning culture moderates the relationship between individual motivations and individual ERP assimilation level.

This study complements a long stream of research on individual ERP assimilation theory by combing organizational learning culture and individual motivation factors. However, there are still some limitations in this study. First of all, this study averaged the items for each sub-dimension of organizational learning culture to form a synthesized score, and used the three synthesized score to measure organizational learning culture as reflective items. Future studies can use the three sub-dimensions of organizational learning culture as independent latent variables and examine their specific impact on individual's motivation, to further explore which specific sub-dimension of organizational learning culture is more likely to influence the individual motivations and lead to higher level ERP system assimilation. Secondly, data collection was mostly conducted in a single country setting with its unique social, economic, and political characteristics. Thus, future studies need to extend the sample size and collect data from other countries to further validate our research results.

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