

FROM IT SATISFACTION TO JOB SATISFACTION: UNDERSTANDING THE ROLE OF USER-TECHNOLOGY FIT

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Abstract

Information technologies (IT) are increasingly prevalent in modern organizations. Given the important role of employee users in the IT implementation process, recent studies have acknowledged employee users' satisfaction with the implemented IT (IT satisfaction) as a salient aspect of job performance. This study extends prior literature by evaluating employees' job satisfaction as a surrogate of job performance induced by IT utilization. Drawing on IT performance literature, we develop a research model to examine the relationship between employee users' satisfaction with information and communication technologies (ICTs) and job satisfaction. To have a more comprehensive understanding about the relationship between IT satisfaction and job satisfaction, we introduce user-technology fit (job fit and professional fit), which concerns employee users' perceptions of IT use, as moderator. Moreover, we suggest that job fit and professional fit can mediate the positive impact of IT satisfaction on job satisfaction. Based on an online survey of 229 employee users of ICTs, this study finds that job fit positively moderates the impact of IT satisfaction on job satisfaction. Also, the results approve the mediating effect of both job fit and professional fit. This study contributes to IT performance literature by moving beyond researchers' focus on IT-related outcomes, such as employee user satisfaction, to broader job-related outcomes.

Keywords: IT satisfaction; Job satisfaction; Job fit; Professional fit

1 INTRODUCTION

In recent years, information and communication technologies (ICTs) have proliferated in workplace, which increases employee users' dependence on them to get work accomplished. Moreover, the quest to improve organizational productivity by incorporating ICTs in business processes makes it imperative for employee users to constantly refresh their ICTs skills to enhance work efficiency and effectiveness (Ayyagari et al. 2011). Since the ICTs implementation and assimilation process change the work environment and workflow tremendously, the impact of ICTs utilization on job-related outcomes has gained great attention from researchers and practitioners. In our review of recent ICTs-related literature, several research streams have been found to examine job-related outcomes resulted from ICTs utilization. One stream focuses on the negative attitudes and cognitive response toward the implemented ICTs such as computer anxiety (Gaudron & Vignoli 2002), computer phobia (Mcilroy et al. 2007), and workplace stress (Carayon 1994). Another stream analyzes negative job outcomes for IT workforce, such as low job commitment, and high turnover rate (Igarria & Siegel 1992) caused by high work stress. Only a few studies pay attention to the advantage of ICTs utilization in improving employee users' job performance (Dos Santos & Sussman 2000; Tarafdar et al. 2014). Therefore, it is imperative for researchers to investigate the mechanisms that can alleviate negative impacts resulted from ICTs use and discover key impact factors of positive job outcome.

In the IT performance literature, employee users' satisfaction with information technology use is assumed to be a subjective determinant of IT success and acknowledged as a great substitute for IT effectiveness (DeLone & McLean 2003). Nevertheless, IT satisfaction is just a technology-related outcome. Considering the growing ubiquity of ICTs in modern organizations, it is critical to shift the current research focus to employee users' work life quality. Job-related outcomes, such as organizational commitment, turnover intention, job satisfaction and job performance, are implicitly discussed in the organizational behavior literature (Macintosh & Krush, 2014; Greenberg & Baron, 2000; Bouckenoghe et al. 2013; Abbas et al. 2014). While in the extant ICTs-related studies, job satisfaction is an important outcome associated with ICTs utilization (Cheney & Scarpello 1985; Ragu-Nathan et al. 2008) due to its influence on employee performance. Following Joshi and Rai (2000), who empirically examined the relationship between employee users' perception about the properties of an IT and job-related outcomes, this study takes employee users' satisfaction with the ICTs as an indicator of their job satisfaction.

From the perspective of task-technology fit in the IT performance literature, for an IT to successfully improve employee users' performance, it should be utilized and supportive for job performance (Goodhue & Thompson 1995). Thus, user-technology fit, which consists of job fit and professional fit, is introduced in this study to unveil the mechanism from IT satisfaction and job satisfaction. Specially, job fit refers to the extent of consistency between short-term job accomplishment and ICTs, and professional fit refers to the extent of consistency between long-term professional development and ICTs.

To make an extension of IT-performance and ICTs-related theories, this study proposes a research model to test the causal relationships among IT satisfaction, user-technology fit and job satisfaction. Moreover, to understand the mechanism from IT satisfaction to job satisfaction, this study also investigates the moderating and mediating effect of user-technology fit. The model is intended to focus on general impacts of an entire set of ICTs implemented in organizations and help managers to obtain more favorable job-related outcomes.

2 THEORETICAL FOUNDATIONS AND RESEARCH HYPOTHESES

2.1 IT Satisfaction and Job Satisfaction

While the first step toward realizing IT benefits is to motivate employee users' initial acceptance of the technology, long-term viability of the implemented IT is largely depending on their continued use. Continued use, in turn, is potentially influenced by employee users' satisfaction with the implemented

technology. In this regard, researchers acknowledged IT satisfaction as a prerequisite to achieve firm performance (Hsieh et al. 2012). Following Au et al. (2008), IT satisfaction represents employee users' affective evaluation of their IT experience, which is developed from accumulative use of the IT over a period. For employee users, higher IT satisfaction would result in improved decision-making and task performance (DeLone & McLean 1992; Etezadi-Amoli & Farhoomand 1996).

Extant studies suggest that an IT project's success or failure is mostly related to the job or business process reengineering during the IT implementation (Scheer & Habermann 2000; Peppard & Ward 2005). Thus we can infer that, although IT satisfaction has been widely examined as employee users' assessment of the overall success of the implemented IT (Rai et al. 2002; DeLone & McLean 2003), it is not the ultimate outcome of IT implementation, but a stimulus to employee users' individual benefits. Considering that an IT project might alter the original work routine and work environment drastically, thus changing employee users' reaction to their job, this study aims to understand whether employee users would be satisfied with their jobs after their adoption and use of ICTs.

In general, job satisfaction is described as the cognitive or affective appraisal related to the work situation (Kelly & Hise 1979). This definition was extended by Janssen (2001) as the extent to which employees evaluated their job as fulfilling or in congruence with their expectation, thus developing pleasurable or positive emotion toward the job. Since job satisfaction is an important job outcome, and it is also related with turnover intention, organizational commitment and other key job outcomes (Griffeth et al. 2000; Macintosh & Krush, 2014; Singh et al. 1996), researchers have long used it as a proxy for job performance. Moreover, in the ICTs context, employee users' job satisfaction is a desired outcome from the implementation and utilization of ICTs to be measured (Cheney & Scarpello 1985).

2.2 User-technology Fit

An employee typically considers himself or herself as having multiple work-related roles (Stets & Burke 2000). For example, an employee might identify a professional role (what kind of work do I do) and an organizational role (what job do I take charge in my position). After the ICTs implementation, employee users' continuous utilization of the technologies would develop perceptions regarding the extent to which the ICTs tools increase their long-term career opportunities (*professional fit*) and the extent to which the ICTs tools support their job (*job fit*). The correspondence between the professional development, job requirements and the functions of ICTs constitute user-technology fit (Speier & Venkatesh 2000).

Job fit was initially introduced by Thompson et al. (1991) as the extent to which employee users believe that utilizing an IT can improve their job performance. For example, employee users might get information in time for better decision-making, or they might complete important tasks with higher efficiency and effectiveness. Job fit has been empirically proved to have direct impacts on IT usage and employee users' individual performance. Cooper and Zmud (1990) found that the compatibility between the job and the implemented IT is the key impact factor of IT adoption. Additional evidence comes from Lee et al. (2007), who validated that for an IT must be fit with the job to realize its full potential in enhancing employee users' job performance.

While job fit reflects the short-term IT capability to support individual performance, professional fit describes the extent to which IT utilization increases the chance for long-term professional development (Speier & Venkatesh 2002). For some employee users, IT usage does not help with their current job greatly, but it increases the possibility to be associated with various kinds of meaningful tasks or increases the flexibility to change their jobs, thereby enhancing professional development (Thompson et al. 1991). In other words, professional fit would result in more positive outcomes in the future.

Following Goodhue and Thompson (1995), IT characteristics are important antecedents of task-technology fit, in turn, task-technology fit leads to better performance. In this line, this study suggests that job fit and professional fit mediate the relationship between IT satisfaction and job satisfaction. Moreover, since job fit and professional fit are subjective perceptions of employee users, which vary

from one employee user to another, we assume that job fit and professional fit may moderate the impact of IT satisfaction on job satisfaction.

2.3 Research Hypotheses

The relationship between IT satisfaction and job satisfaction is the main subject of this study. To reveal the mechanism that has the potential to influence their relationship, we proposed the research model with user-technology fit as the moderator and mediator between IT satisfaction and job satisfaction, as depicted in figure 1.

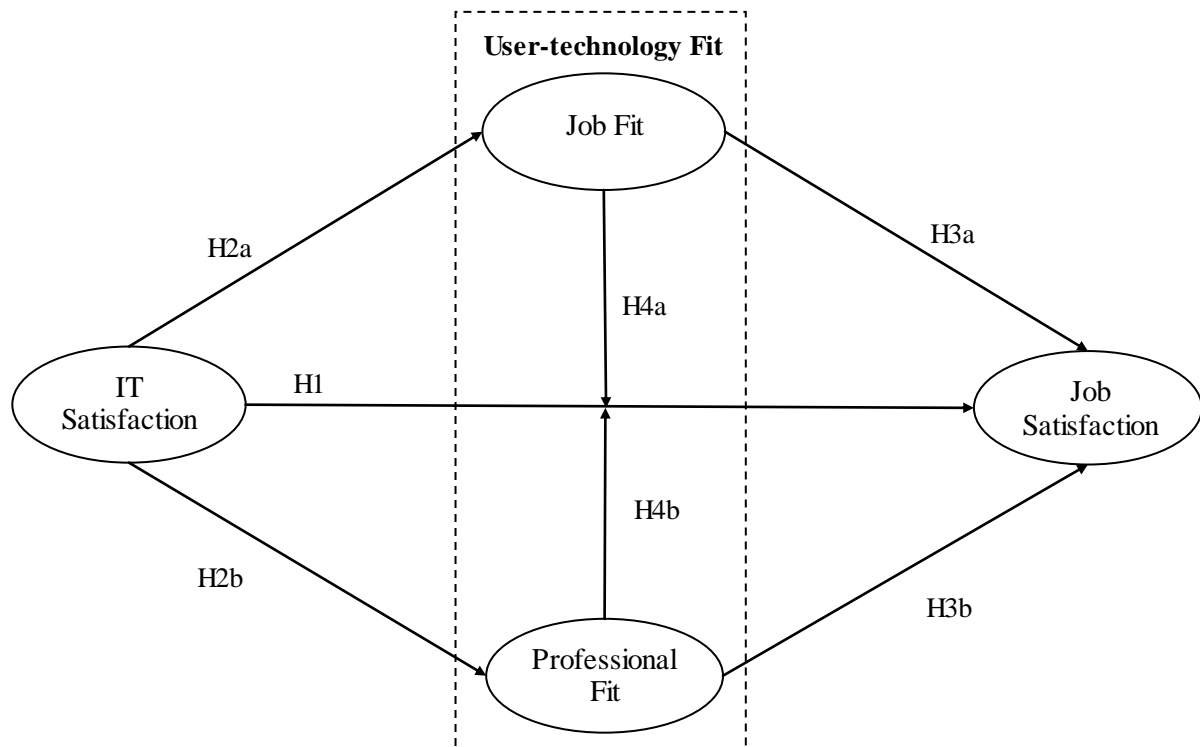


Figure 1. Proposed model

Direct Impact of IT Satisfaction on Job Satisfaction

Among employee users, satisfaction with the implemented IT has been found to have an impact on job satisfaction (Lee et al. 1995). In the ICTs context, high IT satisfaction implicates employee users' affect toward the ease of use of the ICTs tools and toward the quality of information generated from ICTs (Doll & Torkzadeh 1989; DeLone & McLean 1992). In other words, satisfying ICTs would assist the employee users to process information in a more effective and efficient manner, relieving employee users from repetitive and tedious tasks, thus generating positive attitude toward their job. Moreover, employee users' satisfaction with ICTs can be described as the extent to which the functions of ICTs would fulfill work-related needs (Gelderman 1998). In this line, when employee users are satisfied with the implemented ICTs, they would be more likely to apply the ICTs to support their job, which gives them a sense of accomplishment aligned with favorable perception about the job. Based on the above argument, we suggest that:

H1: Users' IT satisfaction has a positive impact on their job satisfaction.

Mediating Effect of User-technology Fit Between IT Satisfaction and Job Satisfaction

When implementing ICTs in organizations, extensive configuration and modification are required for some complex technologies to fit with the workflow. But after configuration if the ICTs applications can run stably, provide accurate and timely information, employee users will acknowledge them as helpful and user friendly, thus generating positive attitude toward the ICTs (Tarafdar et al. 2010). When employee users perceive that the ICTs can help them to deal with the information in a more

effective and efficient manner thus supporting the task, their work performance would be enhanced (Blili et al. 1998). Therefore, we infer that IT satisfaction would contribute to employee users' positive perception of job fit.

Due to the rapid updating of ICTs applications, employee users are often required to work under different technical environment and learn new skills and knowledge about the applications, which will increase employee users' anxiety and stress and then lead to their dissatisfaction with the technology. In this logic, when employee users are satisfied with the implemented ICTs, it implicates that they are capable of adapting to the new technology and coping with learning requirements. In the long run, constant refreshing of personal skills and knowledge is competence-enhancing and supportive for professional development (Speier & Venkatesh 2002). Thus, we suggest that IT satisfaction would contribute to employee users' positive perception of professional fit. Based on the above argument, we propose the following hypotheses:

H2a: Users' IT satisfaction has a positive impact on job fit.

H2b: Users' IT satisfaction has a positive impact on professional fit.

In this study, user-technology fit refers to the interaction among job, individual career prospects and the implemented ICTs. When the ICTs can provide support and functions that fit the requirements of a job, they are more likely to have a positive impact on employee users' job performance (Goodhue & Thompson 1995). Since job satisfaction is assumed to be a good surrogate for job performance (Ong & Lai 2007), we can infer that employee users' positive perception of job fit would lead to their job satisfaction. In addition, as ICTs could automate communications and interactions with coworkers in the work process through e-mail, database systems, and bulletin boards, employee users are inclined to be more dependent on these technologies (Ragu-Nathan et al. 2008).

However, due to the ever-changing trends of ICTs and business process reengineering caused by ICTs implementation, employee users must adapt to new applications, updated functionalities, and improved work process. In the long run, the ICTs utilization process can be perceived as competence-enhancing because it enhance employee users' work-related values, such as attaining more skills, knowledge, and competencies (Burkhardt & Brass 1990). In this line, we suggest that competence-enhancing ICTs would result in positive perceptions of professional fit and favorable attitude toward the job. Based on the above analysis, the following hypotheses are proposed:

H3a: Users' job fit has a positive impact on their job satisfaction.

H3b: Users' professional fit has a positive impact on their job satisfaction.

Interaction Effects of IT Satisfaction and User-technology Fit on Job Satisfaction

As discussed earlier, IT satisfaction refers to employee users' positive evaluation of the implemented technology in terms of ease of use, information content, accuracy, format and timeliness (Doll et al. 2004). It has become a pervasive measure of IT effectiveness (Rai et al. 2002). Nevertheless, ICTs applications are updating rapidly in modern organizations, and ever-changing functionalities of the implemented ICTs would result in ambiguity about the job demand (Love et al. 1989). Also, constant requirements for employee users to learn new applications and refresh IT skills would bring about frustration and stress (Zorn 2000). These negative perception and emotion would cause job dissatisfaction even employee users are satisfied with the ICTs without any technological difficulties. However, when employee users find the ICTs are in congruence with their professional identity and organizational identity, they are more likely to have affective feelings toward their job. To sum up, favorable assessment of the ICTs aligned with a high level of user-technology fit would enable a higher level of job satisfaction. Thus, we posit:

H4a: Job fit moderates the impact of users' IT satisfaction on job satisfaction such that user-technology fit enhances the positive effect of higher IT satisfaction on job satisfaction.

H4b: Professional fit moderates the impact of users' IT satisfaction on job satisfaction such that user-technology fit enhances the positive effect of higher IT satisfaction on job satisfaction.

3 RESEARCH METHOD

Multiple item constructs were adopted to develop the survey instrument. All the survey items for the constructs in our research model were similarly used and validated in prior literature, as listed in Table 1. Three items for job satisfaction were adapted from Janssen (2001) and Morris and Venkatesh (2010). IT satisfaction was measured based on four items from Bhattacharjee (2001). User-technology fit was adapted from person-technology fit introduced by Speier and Venkatesh (2002). It consists of job fit and professional fit, which were measured by eleven items from. Specifically, five items for job fit and six items for professional fit. All the construct items were measured on a 7-point-Likert scale, ranging from 1 (Strongly disagree) to 7 (Strongly agree).

Construct	Items
IT satisfaction	ITS1: I am very satisfied with the overall experience of ICTs use.
	ITS2: I am very pleased with the overall experience of ICTs use.
	ITS3: I am very contented with the overall experience of ICTs use.
	ITS4: I am very delighted with the overall experience of ICTs use.
Job fit	JF1: The ICTs can increase the quantity of output for the same amount of effort.
	JF2: Using the ICTs has no effect on the performance of my job. (reverse score)
	JF3: Using the ICTs decreases the time needed for my important job responsibilities.
	JF4: Using the ICTs significantly increases the quality of output of my job.
	JF5: Using the ICTs increases the effectiveness of performing job tasks.
Professional fit	PF1: Using the ICTs increases the level of challenge in my career.
	PF2: Using the ICTs increases the flexibility of changing jobs.
	PF3: Using the ICTs increases the amount of variety in my career.
	PF4: Using the ICTs increases the opportunity for more meaningful work.
	PF5: Using the ICTs increases the opportunity for preferred career assignments.
	PF6: Using the ICTs increases the opportunity to gain job security.
Job satisfaction	JS1: Overall, I am satisfied with my job.
	JS2: I would prefer another, more ideal job. (reverse score)
	JS3: I am satisfied with the important aspects of my job.

Table 1. Constructs and Survey Items

The research context of our study is information and communication technologies (ICTs). Generally, ICTs “involve a collection of information, processing, storage, network, and communication technologies” (Ayyagari et al. 2011). Specifically, ICTs refer to the computer-based application used in the daily work routine, such as the work specific e-mail, office automation (OA) system, networked devices and database systems, etc. (Tarafdar et al. 2007). Since ICTs prevail in modern organizations and pervade employees’ day-to-day work, whether ICTs utilization would give employee users an edge to improve their individual performance has aroused great concern among academics and practitioners. In this study, we aim to investigate employee users’ satisfaction with their job in the context of ICTs implementation.

An online survey was conducted to collect data. The extant IT performance literature mostly focused on clerical workers in particular work settings. In order to generalize our research findings to various research contexts, employee users from a wide range of industries (including manufacturing, financing, computing, commerce, education, etc.) and in different types of positions (including clerical, administrative, professional positions and supervisory) were selected to participate in our research. We randomly distributed 445 online questionnaires to part-time students, who are full-time employees in different organizations, enrolled in MBA, EMBA and DBA programs of a public university in China. They are associated with or even relying on the ICTs to support their daily work routines. A total of 229 questionnaires that were qualified for data analysis were returned, with a valid response rate of 51.5%. Demographic information of our participants is provided in table 2.

Dimension	Category	Percentage (%)	Dimension	Category	Percentage (%)
Gender	Male	40.6	Education	College or lower	23.6
	Female	59.4		Bachelor	63.6
Age	Below 25 years old	7.4		Master or above	13.1
	26-30 years old	14.4	Job Type	Clerical	42.4
	31-35 years old	23.1		Administrative	20.5
	36-40 years old	20.1		Knowledge worker	30.1
	41-45 years old	17.5		Others	7.0
	Above 46 years old	17.4		IT Experience	Less than 1 year
Organization- al Tenure	Less than 1 year	10.5	1-3 years		17.5
	1-3 years	23.6	4-6 years		35.2
	4-6 years	29.3	7-9 years		22.1
	7-9 years	10.0	More than 10 years		19.1
	More than 10 years	26.2			

Table 2. Demographics of the Survey Respondents

4 DATA ANALYSIS

We analysed the data by the partial least squares (PLS) approach, which is primarily employed for prediction and for exploratory purposes (Ringle et al. 2012). Since this study focuses on theory extension of the relationship between IT satisfaction and job satisfaction, but not on confirmatory testing of the existing theory, PLS is very suitable for our research purpose (Chwelos et al. 2001). Specifically, we used SmartPLS 2.0 to validate the data and test the research model.

4.1 Measurement Model

The descriptive statistics of the three constructs are depicted in table 3, including the mean value, standardized deviation, composite reliability, Cronbach's Alpha, AVE score and correlations of all the constructs.

Construct	Mean	S.D.	1	2	3	4
1. ITS	4.95	1.20	0.84			
2. JF	4.76	1.27	0.70	0.81		
3. PF	4.81	1.30	0.70	0.69	0.74	
4. JS	4.53	1.13	0.59	0.61	0.56	0.76
Composite Reliability			0.90	0.85	0.88	0.80
Cronbach's Alpha			0.86	0.76	0.83	0.67
AVE			0.70	0.66	0.55	0.58

Notes: a. The bold numbers on the diagonal are the square root of the variance shared between the constructs and their measures. Off-diagonal elements are correlations among constructs. For first-order constructs, diagonal elements should be larger than off-diagonal elements to validate discriminant validity
b. ITS= IT Satisfaction; JF= Job Fit; PF=Professional Fit; JS=Job Satisfaction.

Table 3. Descriptive Statistics and Validity

We examined the validity of all the constructs by checking their reliability, convergent validity and discriminate validity. Construct reliability was assessed by composite reliability, Cronbach's alpha, and individual item loadings. As displayed in table 4 and table 5, all the values for composite reliability and Cronbach's alpha were higher than the criterion of 0.6 (Churchill 1979), and most of the individual item loadings were above the threshold of 0.60 (Barclay et al. 1995) (except that the loading of JS2 was 0.57, slightly lower than 0.60), suggesting acceptable construct reliability.

Then we assessed the convergent validity and discriminant validity of the constructs through a Confirmatory Factor Analysis (CFA). As shown in table 3, all the average variances extracted (AVE) scores were higher than 0.50 (Fornell & Larcker 1981), indicating good inner-construct consistency (convergent validity) of each variable. Discriminant validity was checked by (1) whether the square root of AVE of each construct was larger than all the other cross-correlations, and (2) whether the item loadings of each construct were larger than the cross-loadings on other constructs (Chin 1998). Specifically, the difference between loadings on principal construct and other constructs should be higher than the suggested criterion 0.1 (Gefen & Straub 2005) in PLS results. Item JF1 and JF2 were deleted due to high cross-loadings. The results in table 3 and table 4 verified the discriminate validity for all the constructs in the research model.

	IT Satisfaction (ITS)	Job Fit (JF)	Professional Fit (PF)	Job Satisfaction (JS)
ITS1	0.82	0.56	0.57	0.50
ITS2	0.84	0.55	0.61	0.47
ITS3	0.85	0.63	0.59	0.49
ITS4	0.83	0.68	0.66	0.49
JF3	0.60	0.79	0.54	0.50
JF4	0.56	0.79	0.52	0.45
JF5	0.62	0.86	0.62	0.54
PF1	0.42	0.39	0.64	0.25
PF2	0.55	0.52	0.74	0.46
PF3	0.54	0.54	0.77	0.41
PF4	0.60	0.61	0.77	0.49
PF5	0.57	0.51	0.79	0.42
PF6	0.54	0.47	0.71	0.44
JS1	0.52	0.48	0.43	0.84
JS2	0.19	0.19	0.13	0.57
JS3	0.52	0.60	0.57	0.86

Table 4. Item loadings and cross-loadings

4.2 Structural Model

The analysis results of the structural model are displayed in table 5. We examined the hypothesized effects step by step. Firstly, IT satisfaction was observed to have a significant impact on job satisfaction ($\beta=0.58, p < 0.01$) by testing model 1. And IT satisfaction alone was able to explain 34% of the variance in job satisfaction. Thus, *H1* was supported. Then, we justified the mediating effect of user-technology fit by testing model 2. The results demonstrated that IT satisfaction had positive influence on job fit ($\beta=0.73, p < 0.01$) and professional fit ($\beta=0.73, p < 0.01$), in turn, job fit ($\beta=0.34, p < 0.01$) and professional fit ($\beta=0.18, p < 0.05$) had positive impacts on job satisfaction. Meanwhile, the direct impact of IT satisfaction ($\beta=0.21, p < 0.05$) on job satisfaction remained positive but less significant than in model 1. In all, model 2 could account for 43% of the variance in job satisfaction, and *H2a, H2b, H3a, H3b* were supported. Lastly, we examined the interaction effect in model 3 by adding the moderating role of job fit and professional fit based on model 1. Before examining the proposed hypothesis, we meant center the interaction term (ITS*JF and ITS*PF) to minimize potential multicollinearity. Also, we checked the VIF values of the construct items, which were lower than the threshold of 3.3 (Petter et al. 2007), suggesting multicollinearity is not a great concern of this study. The results indicated that the direct impact of IT satisfaction ($\beta=0.19, p < 0.05$) remained positive and significant. The interaction effect of job satisfaction and job fit was also testified ($\beta=0.21, p < 0.1$), thus supporting *H4a*. However, the mediating effect of professional fit was not significant, thus *H4b* was not supported. In model 3, the variance explained in job satisfaction was 44.3%. More details about the tests for mediating effect and moderating effect are in the appendix.

Independent Variable	Estimates	Dependent Variable: Job Satisfaction (JS)		
		Model 1	Model 2	Model 3
1. IT Satisfaction (ITS)	ITS → JS	0.58***	0.21**	0.19**
	ITS → JF	–	0.73***	–
	ITS → PF	–	0.73***	–
2. Job Fit (JF)	JF → JS	–	0.34***	0.28***
3. Professional Fit (PF)	PF → PS	–	0.18**	0.19**
4. ITS*JF	ITS*JF → JS	–	–	0.21*
5. ITS*PF	ITS*PF → JS	–	–	–0.07
R ²	–	0.34	0.43	0.443
ΔR ²	–	–	0.09	0.104
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$				

Table 5. PLS Results

In sum, six out of seven hypotheses were verified. The path coefficients and explanatory power for the dependent variables suggest that the model is well supported.

5 DISCUSSIONS

The overarching purpose of this study is to extend IT performance literature by shifting researchers' focus beyond IT effectiveness to an individual employee's job-related outcome, which has more potential to enhance organizational performance. To this end, the link between employee users' satisfaction with ICTs and job satisfaction was examined. In addition, to understand the facilitating mechanism that would influence the relationship between IT satisfaction and job satisfaction, the mediating and moderating effects of user-technology fit was proposed in our study.

As we expected, the results indicate that IT satisfaction enhances job satisfaction, which is consistent with Lee et al. (1995). If employee users are to adapt to the new work pattern altered by the implemented ICTs, the ICTs should be effective in meeting the job requirements. Further, the results support the mediating role of user-technology fit between IT satisfaction and job satisfaction. Consistent with prior literature (Goodhue & Thompson 1995; Speier & Venkatesh 2002; Lee et al. 2007), job fit and professional fit could be influenced by technological factors. In turn, support from the implemented ICTs to employee users' job and professional development is salient to favorable job outcomes. In addition, the results confirm the moderating effect of job fit on the relationship between IT satisfaction and job satisfaction. Since ICTs applications are constantly changing and updating in modern organizations, the ICTs need to be helpful for employee users' daily work to enhance job satisfaction. Unexpectedly, the moderating effect of professional fit was not testified. A speculative explanation may lie in that professional fit implies a gradual process in which ICTs implementation impacts on one's long-term career development, and its role as a moderator was compromised in this cross-sectional study.

Further, we analyze the important role of user-technology fit as the mediator and moderator in enhancing the explanatory power of the research model. From model 1 (which only examine the direct effect of IT satisfaction on job satisfaction) to model 2 (which adds the mediating effect of user-technology fit), the variance explained in job satisfaction increases by 9%. However, the direct impact of IT satisfaction ($\beta=0.24$, $p < 0.05$) on job satisfaction become less significant than in model 1 ($\beta=0.58$, $p < 0.01$), which suggests that although the impact of IT satisfaction on job satisfaction was mediated in part by user-technology fit, IT satisfaction is still a key impact factor of job satisfaction (Ang & Koh 1997). From model 1 to model 3 (which adds the interaction effect of user-technology fit and IT satisfaction based on model 1), the variance explained in job satisfaction increases by 10.4%. This finding is consistent with Venkatesh et al. (2003), who acknowledged moderators as important factors in enhancing the variance explained in the dependent variable.

6 CONCLUSIONS

6.1 Limitations

Limitations of this empirical study should be noted in interpreting the analysis results. Firstly, this study selected MBA, EMBA and DBA students in Guangdong province, China as subjects. Thus the generalizability of our findings should be a concern. Future studies could validate the research model among other populations as well. Secondly, this study employed cross-sectional self-reported data to verify the research model. Since employee users' perceptions of the implemented ICTs are changing from time to time, a longitudinal research design can eliminate possible bias and support the research findings better. Additionally, ICTs applications are developing and updating very quickly, resulting in a changing work environment for employee users. However, we did not consider the impact of new ICTs implementation practice on employee users' perceptions of the ICTs and their job. Researchers should manipulate their studies in a controlled setting and consider other factors relevant to their research context to develop their models in the future.

6.2 Implications for Research

Theoretically, this current study has several contributions to IT performance literature. First of all, our study is among the first to examine IT performance by employee users' affect toward the job moving beyond the traditional measure of user satisfaction with the implemented IT. Even though IT satisfaction has been widely used as a key measure of IT success or effectiveness (Lin & Shao 2000; McKinney et al. 2002; DeLone & McLean 2003), whether the implemented technologies would be supportive for employees' job performance and organizational benefits remains a black box. Prior researches only focus on IT-related outcomes, while this study successfully shifts researchers' focus to job-related outcomes. Meanwhile, IT satisfaction is validated as a remarkable indicator of job satisfaction, which is a step forward for the IT performance literature.

Additionally, we examine the mediating effect of user-technology fit (*job fit and professional fit*) between IT satisfaction and job satisfaction. Although prior studies confirmed the significant effect of employee users' satisfaction with the technology on job satisfaction (Ang & Soh 1997), this study unveils the mechanism from IT satisfaction to job satisfaction. From the perspective of task-technology fit (Goodhue and Thompson 1995), the implemented IT should not only be utilized but also be supportive for employee users' work so as to enhance individual employee's job performance. Nevertheless, task-technology fit is a short-term interaction between the job and the implemented technology, which is only supportive for the current work routine. In this study, we examine the direct impact of user-technology fit, which refers to the congruence between the job, long-term professional developments and the ICTs, on employee users' affection toward their job. In turn, user-technology would be influenced by employee users' perception and evaluation toward the technology characteristics (Lee et al. 2007). The results strongly support our suggestions.

Moreover, to understand the link between IT satisfaction and job satisfaction, we try to explore the facilitating mechanism by taking user-technology fit as a moderator. Since the main effect of a research model could vary according to different technological context and technological moderators (Sun & Zhang 2006), the introduction of user-technology fit as a moderator can provide a more nuanced explanation about the relationship between IT satisfaction and job satisfaction in the ICTs context and increase the explanatory power of our research model. The analysis results suggest that adding the interaction effect of IT satisfaction and user-technology fit can enhance the predicting power for job satisfaction significantly.

To sum up, although IT satisfaction is salient in explaining job satisfaction, the mediating and moderating effect of user-technology fit make ICTs more helpful in generating favorable job appraisal for employee users.

6.3 Implications for practice

This study has some implications for practice. Since IT satisfaction is a dominant impact factor of job satisfaction, the performance that organizations hope to achieve will largely depend on how satisfied employee users are with the implemented ICTs and how well they can utilize ICTs to support the work. To this end, managers should pay attention to eliminate employee users' dissatisfaction induced by poor quality of ICTs applications (Joshi & Rai 2000), such as programming errors, poor documentation and application crashes (Weil & Rosen 1999; Carayon-Sainfort 1992). Also, adequate and timely IT support should be available for employee users to cope with technological issues in the work process.

Besides ICTs quality, managers should also pay attention to the quality of employee users' work life (e.g. job fit, professional fit). The implemented ICTs in organizations alter the existing work patterns and business processes. And constantly developing ICTs require employee users to update and refresh their technical skills, which could increase work-related stress and burden. To this end, the ICTs applications applied to the work environment should be customized and configured to fit the existing work process. After major modifications, the ICTs should be more supportive for job performance. Moreover, IT staff should recognize employee users' job-related requirements, on which design of the training program is based (Lee et al. 1995). And the accumulated ICTs learning and utilization experience should enhance employee users' competence to deal with various tasks and challenges, which assist them to realize profession-related value thus having more positive perceptions toward their job.

In sum, managers and ICTs designers are advised to improve employee users' affection toward the technology by providing satisfying ICTs applications in terms of qualified information, stable operation and technical support (Xu et al. 2013). Meanwhile, the implemented ICTs should be designed in consistence with employee users' organizational identity (job fit) and professional identity (professional fit) to foster favorable job appraisals.

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Appendix

Following Mathieu et al. (2006), we examined the mediating effect through three steps (see table 6): (1) we examined the main effect from IT satisfaction to job satisfaction, which was significant at the 0.01 level; (2) we examined the indirect impact from IT satisfaction to job satisfaction via job fit and professional fit, and all the paths were supported; (3) we examined the main effect and mediating effect at the same time, and the main effect was proved to be less significant than in step 1, which indicated that mediating effects were supported and the impact of IT satisfaction on job satisfaction was mediated in part by job fit and professional fit.

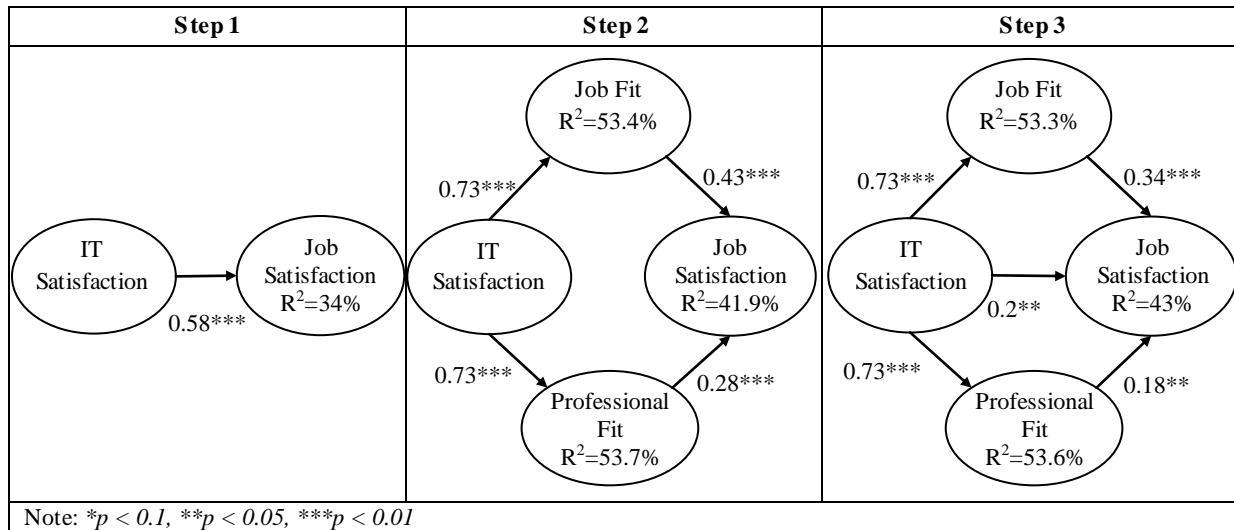


Table 6. Test for Mediating Effect

We testified the moderating effect following Baron and Kenny (1986)'s analysis process. Specifically, we examined the main effect first, and then added the direct impact of the two moderators and the two interaction terms on job satisfaction in sequence. The results in table 7 demonstrated that the moderating effect of job fit was supported ($\beta=0.21$, $p < 0.1$), while the moderating effect of professional fit was insignificant.

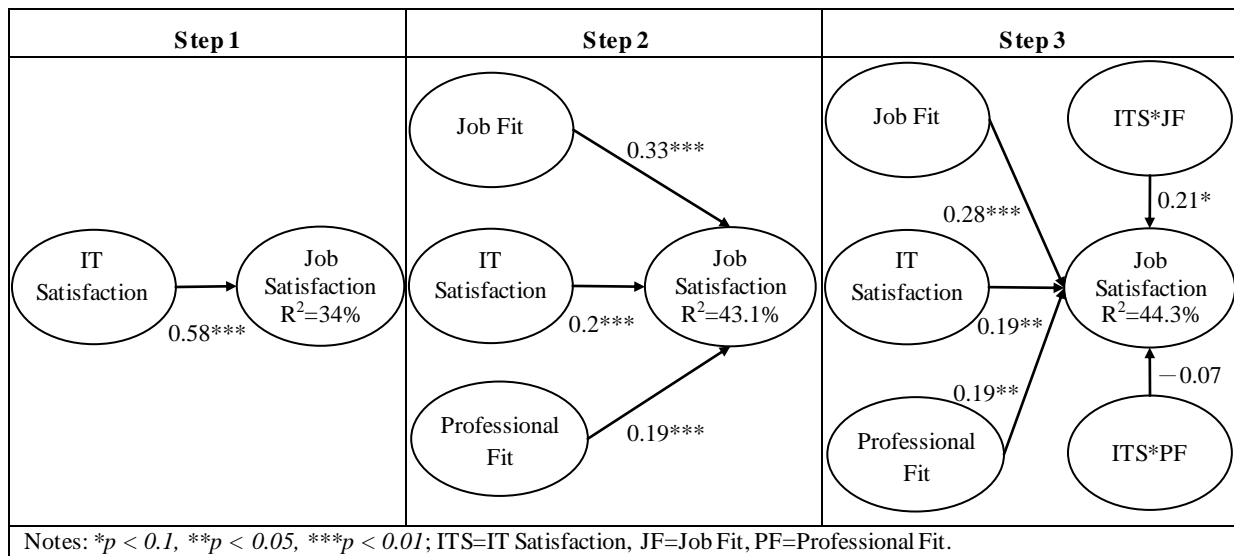


Table 7. Test for Moderating Effect