UNDERSTANDING CLIENTS' INTENTIONS TO EXPLORE SOFTWARE-AS-A-SERVICE (SAAS) FEATURES: A SOCIAL CAPITAL THEORY PERSPECTIVE

Chia-Shiang Hsu, College of Management, National Kaohsiung First University of Science and Technology, Kaohsiung, Taiwan, R.O.C., ours.hsu@gmail.com

Shih-Wei Chou, Department of Information Systems, National Kaohsiung First University of Science and Technology, Kaohsiung, Taiwan, R.O.C., swchou@nkfust.edu.tw

Hui-Tzu Min, Department of Foreign Languages & Literature, National Cheng Kung University, Tainan, Taiwan, R.O.C., minhuitz@mail.ncku.edu.tw

Abstract

The pervasive post-adoption of on-demand software-as-a-service (SaaS) products via the Internet has provided clients with sufficient convenience and functional flexibility to rent and build the multifunctional services they require. Prior research has called for a deeper understanding of how client firms encourage the exploration of SaaS applications in the workplace. However, exploring the best service combinations depends on the clients' socially related motivation. Hence, we draw on social capital theory in this study to examine clients' intentions to explore new SaaS service features. We use service quality to complement structural capital as an indicator, as it is more suitable for assessing the service structure of systems. Drawing on a sample of 246 employees in the IT service departments of small- and medium-sized companies in Taiwan, we generate the following empirical results. First, most of the main effect paths only show significant positive signs for the effect of relational capital on the intention to explore, and the effect of environmental quality on social capital is not supported. Second, we rebuild the mediation model to test the non-supported hypotheses and find that relational capital partially mediates the relationship between service quality and the intention to explore. The theoretical and practical implications of these findings are discussed.

Keywords: Service quality, Social capital, Intention to explore, Software as a Service (SaaS)

1   INTRODUCTION

Software-as-a-service (SaaS), which is a client level cloud computing service, exploits resources such as cloud-based software, cloud storage services, and virtual hardware applications to develop flexible personal system capabilities. SaaS clients are motivated to use SaaS products due to their reduced installation costs and lower uncertainty in relation to traditional information technology (IT) initiatives. In this study, we draw on several theoretical domains, including social capital and service quality, to examine clients' exploration of SaaS service features (Chou & Chiang 2013; Maruping & Magni 2012; Sun, Yulin, Lim & Straub 2012b). Our model focuses on small- and medium-sized non-specific IT service companies because the flexibility and multi-tenant properties of SaaS products suit small- and medium-sized and low budget companies. In particular, we build on social capital theory to identify the factors relating to service quality, social capital, and intention at an individual level. Social capital theory has been widely used to explain clients' internal behavior. In this study, we combine the theories of relational capital and cognitive capital to create a dual model of exploration intentions. We focus on relational capital to highlight client firm members' relationships with each other in system usage situations that enhance service quality and the internal client firm climate. Cognitive capital allows us to explore clients' individual professional system usage, which may be a motivation for continued system feature exploration. Specifically, the system flexibility encourages clients to combine complementary resources, knowledge sharing, and effective governance to explore new feature combinations to enhance client firm performance.

2   THEORETICAL BACKGROUND AND HYPOTHESES

2.1   Exploration of SaaS Features

We explore the use of SaaS features when a client firm adopts a new IT service. The traditional views of IT usage focus on the post-adoption duration and frequency of use in relation to outcome improvement. However, in most workplaces, employees have to learn and understand how to use IT services regardless of whether they feel satisfied with them (Maruping & Magni 2012; Sun et al. 2012b). Thus, rather than focusing on employees' satisfaction, we focus on intention to explore as a post-adoption outcome to indicate how employees' improve outcomes, and whether SaaS service features have sufficient flexibility and multi-functionality to enable the clients to recognize and make use of the different feature combinations in the workplace (DeSanctis & Jackson 1994). Chou, Chang and Hsieh (2014) state that SaaS internal services enable each feature to be customized and facilitate the training of clients in using combinations of features in their work. However, customization not only involves learning from training or continued use, but reflects the client's willingness to explore new features and system flexibility. Personal exploration provides significant benefits to clients by increasing their ability to innovate with the combination and use of the available SaaS features (Ahuja & Thatcher 2005). Hence, the intention to explore reflects a personal willingness to explore the features of the technology and the

clients' desire to engage in active multi-task problem solving with SaaS in the workplace. In this study, we aim to explain how asking employees' to learn differs from drawing on their willingness to engage in exploration, which is a strong motivation for employees to explore new SaaS features in their ongoing workplace practice.

2.2   The research model: Social Capital Theory

We propose that only two of the three dimensions of social capital (relational and cognitive capital) directly influence the intention to explore SaaS features, because structural capital represents multi-relational personal social connections, whereas in this SaaS case firms only obtain a single resource from each individual service provider. Thus, we use service quality instead of structural capital, because the effect of service quality is more suitable for defining the SaaS system structure and the situation in the workplace. Structural capital is also hard to define in this context, because SaaS uses multi-tenant features from more than one provider (Sun et al. 2012b), whereas structural capital is a single resource for creating value in the workplace (Nahapiet & Ghoshal 1998). We only use these two dimensions of social capital to define clients' intentions to explore the SaaS features. Moreover, service quality has a direct effect on social capital in our model. Figures 1 shows the research model, including the social capital relationships between service quality and clients' intentions to explore, used in this study.
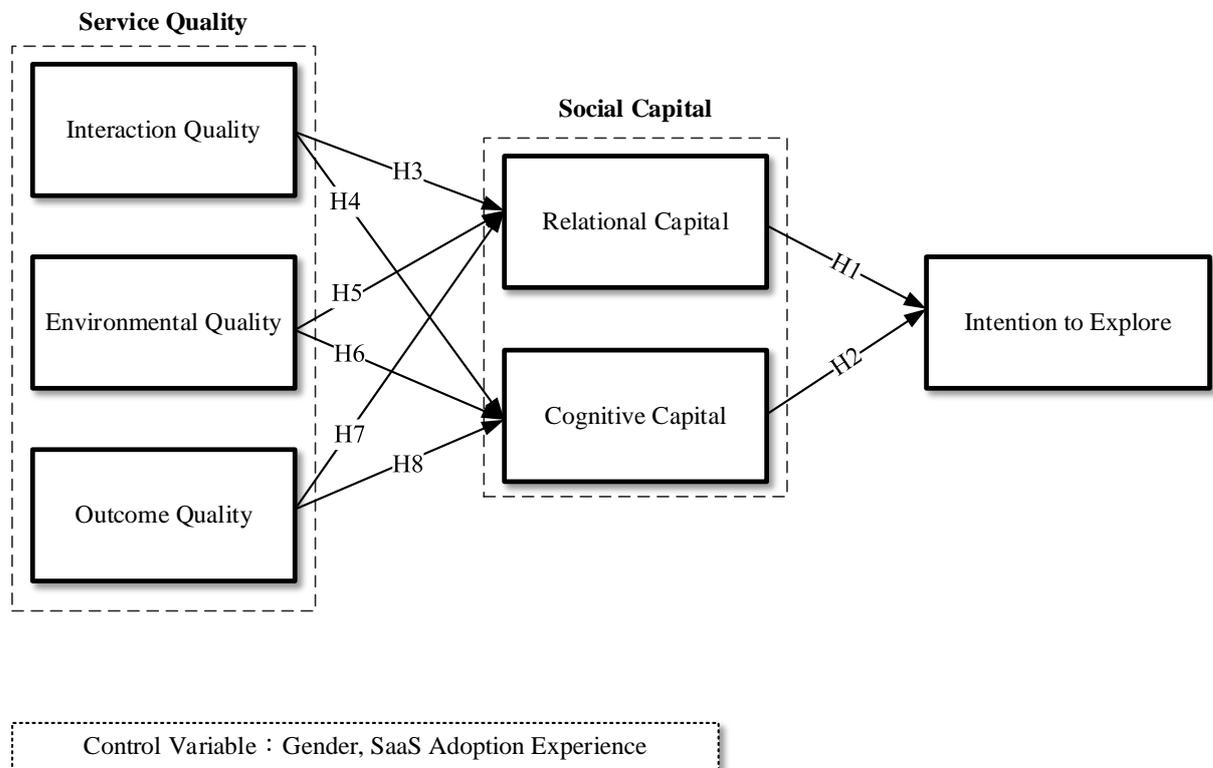

Figure 1.   Research Model.

Social capital theory refers to the social capital present in social networks and is primarily concerned with the significance of social relationships for accessing resources or information (Adler & Kwon 2002) and value creation (Nahapiet & Ghoshal 1998). Social capital emerges through social interaction and fosters long-term interpersonal relationships and mutual trust, and the sharing of experience, knowledge, and information (Nahapiet & Ghoshal 1998; Sun et al. 2012b). We focus on clients' internal behaviour as social capital that exists in the relationship between service quality and clients' exploration behavior.

2.2.1 Hypotheses between social capital and intention to explore

According to Sun et al. (2012b), relational capital describes internal client firm relationships more than satisfaction. Therefore, we examine SaaS post-adoption in relation to the client firm members' intentions to explore. Relational capital is also related to the post-adoption client firm's trust in the service provider (Nahapiet & Ghoshal 1998). In this study, trust reflects the extent to which client firm members believe each other and are willing share benefits and information with each other (Sun et al. 2012b). It can contribute to value creation because client firm members' willingness to share information and knowledge can motivate others' to explore new SaaS feature combinations and increase their own performance (Chou et al. 2014). Stronger social relations can also increase the personal motivation to engage in service performance creation (Nahapiet & Ghoshal 1998). In this respect, relational capital and exploration behavior help clients to fulfill their system feature needs, thus contributing to the customization of the clients' system and their satisfaction (Au, Ngai & Cheng 2008). Thus, we propose the following hypothesis.

H1. Relational capital positively influences client's intention to explore the SaaS features.

Clients who share their knowledge and expertise of SaaS features are better able to understand the system and help each other determine how to improve outcomes (Sun et al. 2012b). Shared SaaS usage opinion is associated with shared perceptions of feature combinations and activity. Thus, people who share their user experience tend to have greater knowledge (Nahapiet & Ghoshal 1998). This suggests that the possible combinations of SaaS features depend on the clients' professionalism and their willingness to freely share their resources. Thus, we propose our second hypothesis.

H2. Cognitive social capital positively influences client's intention to explore the SaaS features.

2.2.2 Hypotheses between service quality and social capital

According to social capital theory, structural capital depends on the value of resource assets (Nahapiet & Ghoshal 1998), but as SaaS services are an on demand multi-tenant structure provided via the Internet, service quality is more suitable than structural social capital for examining clients' intentions to explore new SaaS features (Chou & Chiang 2013; Cusumano 2010; Sun et al. 2012b). Interaction quality reflects the clients' interaction with the SaaS service used. Interaction quality also reflects the relationship between the client and the SaaS service features, which in turn has a feedback effect on social capital

(Sun et al. 2012b). Relational capital influences clients' interactive behaviors in using SaaS service features. A client firm's relationship with other SaaS users can enhance the client's motivation to form new system feature interactions, and the effect of the interaction quality on the client's decision-making process (Chang & Wong 2010; Chou & Chiang 2013; Chou & Hsu 2015). Moreover, cognitive capital increases with the increasing self-confidence clients gain from system interaction, as the more a client builds their knowledge of the system service, the greater their expertise in using the new system features. Therefore, we expect that these investments allay clients' concerns about the interaction quality of SaaS, as they increase the clients' rapport with the system and the system flexibility (Benlian, Koufaris & Hess 2011), and enhance the client's capacity to explore new system features. Thus, we propose the following hypotheses.

H3. Interaction quality positively influences client's relational social capital.

H4. Interaction quality positively influences client's cognitive social capital.

Environmental quality can serve as an antecedent to social capital. Thus, environmental quality plays an important role when clients use SaaS facilities in relation to the client firm's post-adoption situation (Zhao, Lu, Zhang & Chau 2012). Environmental quality is related to the system features and security of SaaS facilities, as when the client firm rents the service it cannot easily control the SaaS hardware structure (Benlian et al. 2011). It also captures the client firm's position on SaaS service import and support with respect to the client's intentions to explore the new system features. Thus, we propose the following hypotheses.

H5. Environmental quality positively influences client's relational social capital.

H6. Environmental quality positively influences client's cognitive social capital.

Although similar to structural capital, in this study, we only focus on the outcome quality of single SaaS service providers (Sun et al. 2012b), which serves as the antecedent of the new system features of SaaS services with respect to social capital. Outcome quality affects relational and cognitive capital by emphasizing the role of social capital in the post-adoption stage, and reflects the success of the new features in the workplace (Chou & Hsu 2015). It also captures attributes such as SaaS system responsiveness and reliability (Benlian et al. 2011), which help the clients to explore ways to make the SaaS service features better fit the system outcomes and to use social capital to increase their intention to explore. Thus, we propose the following hypotheses.

H7. Outcome quality positively influences client's relational social capital.

H8. Outcome quality positively influences client's cognitive social capital.

3   RESEARCH METHODOLOGY

This research model was tested by SmartPLS 3.2 (Ringle, Wende & Becker 2015), and we draw a component-based research model(Chin, Marcolin & Newsted 2003; Fang et al. 2014). Path significance test was assessed the bootstrap technical with a total of 5000 resamples and 246 case sample (Hair Jr, Hult, Ringle & Sarstedt 2013). In this research we also test mediating relationships after the main effect model result, To make sure indirect terms have significantly affected ratio within the mediation model(F. Hair Jr, Sarstedt, Hopkins & G. Kuppelwieser 2014; Sarstedt, Ringle, Smith, Reams & Hair 2014).

3.1   Participants and Procedures

This study used an online survey system and focused on non-specific IT Service Company's IT department supervisor, which sent requests to 600 clients. The response rate was 60.8 % (n=365) but 119 responses with missing data were discarded, resulting in a response rate of 41% (n=246), which is typical IT service client in Taiwan. Table 1 shows that 52.8% of the respondents were male and 47.2% were female. Clients' ages are during 21 to 30 years old comprised the largest category of the respondents, at 77.3%. And clients' education background bachelor's degree is the largest category with 72.8%, Industry of most clients are from information communication and service industry for 75.6%, finally over 37.8% clients' have SaaS adoption experience more than one year, only 40.7% clients' already used SaaS service but below one year.

Measure	Item	(N=246)	
		Frequency	Percentage
Gender	Male	130	52.8
	Female	116	47.2
Age	<20	11	4.5
	21-25	119	48.4
	26-30	71	28.9
	31-35	14	5.7
	36-40	31	12.6
Education	Master's degree or higher	56	22.8
	Bachelor's degree	179	72.8
	High school or below	11	4.4
Industry	Information and communication	105	42.7
	Service industry	81	32.9
	Manufacturing	60	24.4
	Below 1 years	100	40.7

| SaaS Adoption | 1 years -5 years | 87 | 26.0 |
| Experience | Over 5 years | 59 | 11.8 |

Table 1.   Sample characteristics (N = 246).

3.2   Constructs and Measurement

In this study each construct we used, consistently with intention to explore, adopted from the empirical study from (Maruping & Magni 2012). Using a three item scale, and the service quality as an interaction quality, environment quality and outcome quality was adopted from the empirical study of (Benlian et al. 2011; Chou & Chiang 2013; Zhao et al. 2012), relational capital and cognitive capital was adopted from (Sun et al. 2012b). Most items were measured at 7-point Likert scales. All variables were greater than the alpha value almost 0.7, consistent with Nunnally's (1978) proposed threshold. Convergent validity used to measure Fornell & Larcker (1981), the proposed three proofs (1). Table 2 shows all factor loading was greater than 0.5, CR values did not exceed 0.8, AVE values were greater than 0.5 and Cronbach's alpha are greater than 0.7 (2). As shown in Table 3, the correlation matrix and square roots of the average variance extracted (AVE). In this study all dimensions were in compliance with all three standards resulting in good convergent validity; (3). As for multicollinearity among all indicator, Hair Jr et al. (2013) suggest testing variance inflation factor (VIF), the range from 1.256 to 3.955 which should be less than 5 (Hair, Ringle & Sarstedt 2011; Sarstedt et al. 2014).

Construct	Item	Weight	Loading	t-Value	VIF
Interaction Quality (IQ) *C.R.=0.948; Alpha=0.926; AVE=0.891*	IQ1	0.245	0.854	26.305	2.464
	IQ2	0.285	0.942	96.619	3.955
	IQ3	0.250	0.902	56.602	3.607
	IQ4	0.323	0.921	85.023	3.424
Environmental Quality (EQ) *C.R.=0.931; Alpha=0.901; AVE=0.771*	EQ1	0.320	0.839	33.304	2.388
	EQ2	0.288	0.932	79.358	3.202
	EQ3	0.244	0.861	36.467	2.977
	EQ4	0.287	0.879	44.292	3.160
Outcome Quality (OQ) *C.R.=0.929; Alpha=0.898; AVE=0.765*	OQ1	0.298	0.875	51.573	2.471
	OQ2	0.262	0.859	42.163	2.393
	OQ3	0.262	0.877	36.267	2.705
	OQ4	0.320	0.889	58.243	2.677
Relational Capital (RC) *C.R.=0.823; Alpha=0.723; AVE=0.545*	RC1	0.466	0.856	28.371	1.779
	RC2	0.373	0.847	29.104	1.885
	RC3	0.254	0.626	10.365	1.269

	RC4	0.218	0.581	4.606	1.256
	CC1	0.277	0.756	13.947	1.593
Cognitive Capital (CC)	CC2	0.324	0.881	41.196	2.810
C.R.=0.879; Alpha=0.818; AVE=0.646	CC3	0.371	0.782	17.851	1.452
	CC4	0.272	0.791	18.859	2.172
	IE1	0.268	0.867	51.816	2.591
Intention to Explore (IE)	IE2	0.309	0.864	59.893	2.297
C.R.=0.917; Alpha=0.880; AVE=0.735	IE3	0.283	0.821	37.681	1.924
	IE4	0.307	0.878	51.066	2.515

Table 2.   Weights and loading of measures (n=246). Note: Both standard errors and t-values are for loadings, not weights.

3.3   Common method biases

As with all samples reported data, there is a potential for common method biases resulting from multiple sources from clients(Podsakoff, MacKenzie, Lee & Podsakoff 2003; Podsakoff & Organ 1986). Following Podsakoff & Organ (1986), we performed statistical analyzes to evaluate the severity of common method bias. Harmon one-factor test (Malhotra, Kim & Patil 2006; Podsakoff & Organ 1986), all indicator were converted to six factors with eigenvalues >1 were extracted; collectively, they accounted for 75.5% of the variances in the data, with the first factor accounting for 39.28% of the variances. These findings suggest that CMV is not a main concern.

	Mean	S.D	Gender	SAE	IQ	EQ	OQ	RC	CC	IE
Gender	130 M; 116 F		**N/A**							
SaaS Adoption Experience	1.833	0.788	-0.166	**N/A**						
Interaction Quality (IQ)	5.258	1.166	-0.238	0.197	**0.905**					
Environmental Quality (EQ)	5.569	0.847	-0.374	0.222	0.565	**0.878**				
Outcome Quality (OQ)	5.736	0.790	-0.448	0.256	0.462	0.577	**0.875**			
Relational Capital (RC)	5.652	0.831	-0.330	0.158	0.475	0.318	0.462	**0.738**		
Cognitive Capital (CC)	5.437	0.879	-0.194	0.169	0.602	0.436	0.438	0.543	**0.804**	
Intention to Explore (IE)	5.837	0.706	-0.736	0.207	0.303	0.434	0.495	0.392	0.323	**0.857**

Table 3.   Correlation among constructs and the square root of the AVE. Note: S.D.: standard deviation; the shaded numbers in the diagonal row are square roots of the average variance extracted (AVE).

3.4 Analysis and results

The structural model was assessed by estimating the path coefficients using smart-PLS shows in table 4 (Maruping & Magni 2012; Sarstedt, Ringle, Raithel & Gudergan 2012). Hypotheses testing, model two is shows that full model of all main effect, there are six path are significantly include gender control variable. Tree hypothesis paths is non-significant include SaaS adoption experience effect as a control variable, relational capital is also not significant on intention to explore (H1) and environmental quality are not have significant effect with relational and cognitive capital(H5; H6). The significance of all paths was assessed via 5000 bootstrap runs(Hair Jr et al. 2013). R^2 shows the amount of variance explained by the client's intention to explore SaaS service and the predictive power of the model R^2 value is 0.58. Table 6 demonstrates the path coefficient a supporting main effect H2; H3; H4; H7 and H8. We also provides effect size of f^2 =0.079 is greater than 0.182 and q^2 = 0.042 is greater than 0.02 are shown small effect size of this research (Hair Jr et al. 2013; Sarstedt et al. 2012).

Independent variable → Dependent variable	Model I：Control model		Model II：Full model	
	β	t-value	β	t-value
Gender→ Intention to explore	-0.722***	26.732	-0.671***	17.258
SaaS adoption experience→ Intention to explore	$0.087^{n.s.}$	1.947	$0.059^{n.s.}$	1.414
Relational capital→ Intention to explore (H1)			$0.088^{n.s.}$	1.589
Cognitive capital→ Intention to explore (H2)			0.134*	2.432
Interaction quality → Relational capital (H3)			0.366***	5.090
Interaction quality → Cognitive capital (H4)			0.488**	6.844
Environmental quality → Relational capital (H5)			$-0.086^{n.s.}$	0.911
Environmental quality → Cognitive capital (H6)			$0.056^{n.s.}$	0.553
Outcome quality → Relational capital (H7)			0.343***	4.829
Outcome quality → Cognitive capital (H8)			0.181*	2.245
R^2 Value	0.550		0.583	
Q^2 Value	0.400		0.424	
f^2 effect size			0.079	
q^2 effect size			0.042	

Table 4.   Hypothesis testing. *p<0.1 = t>1.96; **p<0.05 = t>2.58; ***p<0.01 = t>3.29

3.4.1 Mediating effect

As the results from the table 4, we decide retest possible mediating effect on relational and cognitive capital. First step we used Sobel z statistic (Baron & Kenny 1986; Wang, Chou, Lee & Lai 2014). Second, analysis of total effects suggest that social capital mediates the relationship between service quality and intention to explore, it is worthwhile to explicitly test for this potential mediating effect (F. Hair Jr et al. 2014). We following Hair Jr et al. (2013) step to calculation VAF ratio of mediating, VAF ratio would be less than 20% shows non-significant mediating effect, and during 20%~80% shows partial mediating effect, when the VAF ratio has large outcome above 80%, it's assumed full mediating effect. And using the following formula: "VAF=indirect effect/total effect". The results of this final analysis step yield a VAF value row1, 2, 3, 5 are during 0.215 to 0.511, which, according to F. Hair Jr et al. (2014), suggests that relational capital and cognitive capital; both have partial mediating effect. Except for row4 and 6 are have non-significant mediating effect. The procedures are according by Hair Jr et al. (2013) for an example.

Row	Indirect effect	c	α	β	c'	$\alpha\beta$	Total effect	Sobel Z	VAF	Type
1	IQ EQ CC OQ RC IE	0.311 (4.83)	0.487 (9.78)	0.318 (4.77)	0.148 (2.02)	0.155	0.303	4.299 ***	51.13%	Partial
2	IQ EQ CC OQ RC IE	0.311 (4.83)	0.603 (13.28)	0.226 (3.01)	0.172 (2.23)	0.136	0.308	2.900 **	44.21%	Partial
3	IQ EQ CC OQ RC IE	0.444 (8.88)	0.338 (5.79)	0.286 (4.22)	0.347 (7.11)	0.097	0.444	4.319 ***	21.79%	Partial
4	IQ EQ CC OQ RC IE	0.444 (8.88)	0.445 (9.23)	0.151 (1.93)	0.374 (6.47)	0.067	0.441	1.895	15.23%	No
5	IQ EQ CC OQ RC IE	0.507 (10.47)	0.473 (11.06)	0.229 (3.34)	0.394 (7.06)	0.108	0.502	3.833 ***	21.56%	Partial
6	IQ EQ CC OQ RC IE	0.507 (10.47)	0.436 (6.92)	0.129 (1.74)	0.446 (7.86)	0.056	0.502	1.691	11.20%	No

Table 5. *Significance of mediation effect. Note: c= the total direct effect of the independent variable on the dependent variable; α= the effect of the independent variable on the mediating variable; β= the effect of the mediating variable on the dependent variable when controlling for the independent variable; c'= the effect of the independent variable on the dependent variable when controlling for the mediating variable; *p<0.05 = t>1.96; **p<0.01 = t>2.58; ***p<0.001 = t>3.29.*

4 DISCUSSION AND CONCLUSIONS

4.1 Discussion

We proposed and tested a full model and a mediation model to understand how social capital affects clients' exploration behavior. It is especially important to note that the main effect of H1 is not supported by the effect of relational capital on the intention to explore, which indicates that the members of the client firm are not motived to explore the new system features by client firms who already use the service or by other clients' experiences. In other words, in the workplace situation, relational capital does not increase clients' internal behavior to explore. However, when clients' experience of service quality is driven by relational capital, relational capital plays a mediating role between service quality and intention to explore, as shown in rows 1 and 3. With respect to H2, which examines the effect of cognitive capital on clients' exploration behavior, the cognitive capital clients gain from SaaS service use increases the clients' system knowledge and moves it to a professional level with respect to self-confidence. This motivates the client to explore some of the newest features to continue building the professionalism in the workplace. Accordingly, cognitive capital has a positive effect on the intention to explore, as shown by the support for hypothesis 2. H3, which focuses on the relationship between interaction quality and relational capital, is also supported. Clients who have better experience of SaaS service use and institute system use procedures in the workplace for positively interacting with the SaaS service provider, increase their employees' exploration behavior and improve the working atmosphere in the firm. In addition, the interaction quality of SaaS provides a friendlier interface and interaction experience for the client, which motivates the client to build its own knowledge base with the SaaS specialist and helps the client build cognitive capital from the SaaS service interaction, user experience, and the effects on the client firm, thus H4 is supported. This study also extends the previous research on service quality by showing the effects of factors such as environmental quality. Thus, H5 and H6 are not supported by clients' relational and cognitive capital derived from environmental quality, because in several work situations employees are forced to use and adopt the system. Environmental quality does not have a significant effect on clients' external motivation and the effect of outcome quality on social capital is driven by the client's experience of the SaaS service benefits. This increases the effect of social capital on the client's internal and external motivations, thus H7 and H8 are supported. As expected, social capital influences the relationship between service quality and the intention to explore. This result supports those of most prior studies suggesting that service quality and social capital can contribute to system use behavior. Rows 1, 2, 3, and 5 show that service quality has a partial mediating effect on the intention to explore, but rows 4 and 6 indicate that cognitive capital is not a significant mediator of the relationship. Cognitive capital is primarily built through interaction, thus we know that clients' interaction and experience with SaaS increases the clients' cognitive and personal knowledge, which motivates the clients to explore the new SaaS service features.

4.2 Practical implications

Improving exploration as a post-adoption outcome in the client firm workplace is particularly challenging for client firms that use SaaS services. Because of the uncertainty associated with SaaS products, motivating the client to explore the new service features and improve the firm's outcomes remains problematic. Our results can help SaaS providers to know how to reduce the uncertainty of the client firm and increase the user interaction and outcome quality. As these factors also enhance the professional skill of the client user, the service provider should focus on enhancing service quality to improve the environmental quality as a system feature module and resolve security problems to eliminate SaaS lower hardware control and reduce the customization uncertainty. For SaaS clients, good knowledge and fundamental skills in using SaaS will help the client firm to reduce the problems relating to uncertainty and help build the client's cognitive capital. In this study, cognitive capital was found to enhance the client users' intentions to explore the features of SaaS and to select the SaaS features the firm requires. The client could also use different SaaS providers to enable the firm to customize the services to their own requirements. Finally, our findings show that clients that explore the SaaS features remove the uncertainty that is characteristic of the service quality of SaaS products. It is important for the client firm supervisors to improve the post-adoption outcomes associated with their firm's SaaS services.

4.3 Conclusion

In this study, we investigate the relationships between service quality, social capital, and intention to explore by drawing on the client firm situation. We use a sample of non-specific IT companies in Taiwan to evaluate the client firms' influence on their employees' intentions to explore SaaS features. The results of our study show that building good cognitive capital with a client will increase the client firm's potential outcomes by switching providers and the client's knowledge and professional skill. However, although relational capital can enable each party to benefit from the relationship, in this study, we only focus on the workplace post-adoption of SaaS. Because the client firms have to use SaaS services, we find that the client's intention to explore through relational capital is not significantly supported. Finally, we find that interaction quality and outcome quality are positively supported by social capital, and are mutually beneficial and reciprocal. Thus, switch knowledge and professional kill are needed to enhance the level of interaction and evaluate the outcomes. Furthermore, our findings show that environmental quality is not supported by social capital, such that the SaaS characteristics of lower control and lower customization mean that the client firms may have difficulty managing their SaaS services. However, in most workplace post-adoption situations, the client firms' employees are mandatorily required to use the SaaS services no matter what kind of use environment. Finally, by providing more accurate information about the intention to explore, the results of our study can help SaaS companies to develop an ecological understanding of their clients' needs.

References

Adler, P. S., & Kwon, S.-W. (2002). Social capital: Prospects for a new concept. *Academy of Management Review, 27*(1), 17-40.

Ahuja, M. K., & Thatcher, J. B. (2005). Moving beyond intentions and toward the theory of trying: effects of work environment and gender on post-adoption information technology use. *MIS Quarterly, 29*(3), 427-459.

Au, N., Ngai, E. W., & Cheng, T. E. (2008). Extending the understanding of end user information systems satisfaction formation: An equitable needs fulfillment model approach. *MIS Quarterly*, 43-66.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51*(6), 1173.

Benlian, A., Koufaris, M., & Hess, T. (2011). Service quality in software-as-a-service: developing the saaS-qual measure and examining Its role in usage continuance. *Journal of Management Information Systems, 28*(3), 85-126.

Chang, H. H., & Wong, K. H. (2010). Adoption of e-procurement and participation of e-marketplace on firm performance: Trust as a moderator. *Information & Management, 47*(5–6), 262-270.

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information Systems Research, 14*(2), 189-217.

Chou, S.-W., Chang, Y.-C., & Hsieh, P.-H. (2014). Understanding the performance of software-as-a-service based on service-dominant logic. *The Service Industries Journal, 34*(7), 645-658. doi: 10.1080/02642069.2014.886188

Chou, S.-W., & Chiang, C.-H. (2013). Understanding the formation of software-as-a-service (SaaS) satisfaction from the perspective of service quality. *Decision Support Systems, 56*(0), 148-155.

Chou, S.-W., & Hsu, C.-S. (2015). Understanding online repurchase intention: social exchange theory and shopping habit. *Information Systems and e-Business Management*, 1-27. doi: 10.1007/s10257-015-0272-9

Cusumano, M. (2010). Cloud computing and SaaS as new computing platforms. *Communications of the ACM, 53*(4), 27-29.

DeSanctis, G., & Jackson, B. M. (1994). Coordination of information technology management: Team-based structures and computer-based communication systems. *Journal of Management Information Systems*, 85-110.

F. Hair Jr, J., Sarstedt, M., Hopkins, L., & G. Kuppelwieser, V. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review, 26*(2), 106-121.

Fang, Y., Qureshi, I., Sun, H., McCole, P., Ramsey, E., & Lim, K. H. (2014). Trust, satisfaction, and online repurchase intention: the moderating role of perceived effectiveness of e-commerce institutional mechanisms. *MIS Quarterly, 38*(2), 407-427.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: algebra and statistics. *Journal of marketing research*, 382-388.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *The Journal of Marketing Theory and Practice, 19*(2), 139-152.

Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2013). *A primer on partial least squares structural equation modeling (PLS-SEM)*: Sage Publications.

Malhotra, N. K., Kim, S. S., & Patil, A. (2006). Common method variance in IS research: a comparison of alternative approaches and a reanalysis of past research. *Management Science, 52*(12), 1865-1883.

Maruping, L. M., & Magni, M. (2012). What's the weather like? The effect of team learning climate, empowerment climate, and gender on individuals' technology exploration and use. *Journal of Management Information Systems, 29*(1), 79-114.

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review, 23*(2), 242-266.

Nunnally, J. (1978). Psychometric methods. *McGraw-Hill, New York, NY*.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology, 88*(5), 879.

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of management, 12*(4), 531-544.

Ringle, C. M., Wende, S., & Becker, J.-M. (2015). "SmartPLS 3". Boenningstedt: SmartPLS GmbH, http://www.smartpls.com.

Sarstedt, M., Ringle, C. M., Raithel, S., & Gudergan, S. (2012). In pursuit of understanding what drives fan satisfaction. *Hamburg University of Technology (TUHH), Management@ TUHH Research Paper Series*(7).

Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy, 5*(1), 105-115.

Sun, Y., Yulin, F., Lim, K. H., & Straub, D. (2012b). User Satisfaction with Information Technology Service Delivery: A Social Capital Perspective. *Information Systems Research, 23*(4), 1195-1211. doi: 10.1287/isre.1120.0421

Wang, E. T., Chou, F. K., Lee, N. C., & Lai, S. (2014). Can intrafirm IT skills benefit interfirm integration and performance? *Information & Management, 51*(7), 924-938.

Zhao, L., Lu, Y., Zhang, L., & Chau, P. Y. K. (2012). Assessing the effects of service quality and justice on customer satisfaction and the continuance intention of mobile value-added services: An empirical test of a multidimensional model. *Decision Support Systems, 52*(3), 645-656.