

## KNOWLEDGE SHARING AND PROFESSIONAL ONLINE COMMUNITIES ACCEPTANCE: AN INTEGRATED MODEL

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### ABSTRACT

This study extends the Unified Theory of Acceptance and Use of Technology (UTAUT) to study acceptance and use of professional online communities. Drawing upon rigorous theoretical foundation, empirical support and contextually relevant research, an integrated model was developed and applied to investigate the use of professional online communities for knowledge acquisition and for knowledge provision. This model was tested through a survey administered to the members of eight professional unions in Egypt. The findings of this study adds to knowledge by demonstrating that content quality, system quality and members' beliefs in their abilities to use the community system facilitate the transformation of professional online communities' resources to performance and personal benefits and, consequently, encourage members to use the community for sharing their knowledge. Additionally, the findings revealed that members who perceived high content and system quality were more likely to show higher degree of relational capital (trust). Several important implications are presented and discussed in more detail.

Keywords: professional online communities, technology acceptance, knowledge sharing, relational capital, Egypt

### INTRODUCTION

Professional online communities can be defined as “*online networks in which individuals with common interests, goals or practices interact to share information and knowledge, and engage in social interactions*” (Kim et al., 2011, p. 112). It has been used widely by many different professions for knowledge sharing. Now professionals can share their ideas and experiences, find quick answers, gave access to other individuals with the same interests, solve job related problems, and perform complicated tasks through collaboration with both known and unknown colleagues (Yu et al., 2009, p. 13). Although a limited number of empirical studies have investigated knowledge sharing within online communities based on social-psychological perspectives (e.g. Chiu et al., 2006, Wasko and Faraj, 2005), no previous study has attempted to integrate the possible determinants that motivate professionals to use this type of community for knowledge sharing. Moreover, Ridings et al. (2002) stated that the intention to contribute knowledge would be meaningless if the initiation of knowledge requests was absent. In this respect, Quigley et al. (2007) contend that very little is known about how the different “*motivational factors identified with knowledge providing and knowledge receiving work in conjunction with each other because the motivational mechanisms across these domains are rarely studied together*” (p.72). Therefore, they suggested the need to develop a coherent, integrated, theoretical framework to show how the motivational factors can explain knowledge sharing (acquisition/provision); and how this knowledge is utilised in ways that benefit performance.

Thus, drawn upon theoretical foundations, empirical studies and contextually relevant research, this study tries to integrate and validate some key variables with the Unified Theory of Acceptance and

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Use of Technology (UTAUT) to develop a comprehensive model that have the ability to capture the factors that can motivate professionals to use online communities for knowledge acquisition and knowledge provision..

### The Unified Theory of Acceptance and Use of Technology UTAUT

After reviewing and comparing eight previous models, Venkatesh et al. (2003) developed their new model, UTAUT, which aimed to better explain technology acceptance and usage. They empirically examined the eight developed models in longitudinal design research using four different organisations. This model explained 70% of the total variance in behavioural intentions. They empirically found that performance expectancy, facilitating conditions, effort expectancy, and social influence are significant predictors of behavioural intention and use behaviour.

In general, and according to Straub (2009), technology acceptance model TAM and UTAUT are two models developed specifically for investigating technology use and adoption in the organisational settings. Although these two theories are able to explain behavioural intention and usage behaviour, the UTAUT model is still new and untested. In this regard, Barnes and Vidgen (2012, p. 165) stated that, “*the explanatory and predictive power of UTAUT has yet to be fully demonstrated*”. Hence, additional research is needed to understand how the UTAUT may be applied in settings outside of the organisational and cultural contexts, such as professional online communities and non-Western culture. Furthermore and from knowledge sharing behaviour standpoint, other perspectives such as the technology acceptance models may help to better account for ease of use and usefulness of online communities use (Kankanhalli et al., 2005, p. 135). Benbasat and Barki (2007, p. 216) agree with this perspective by recommending the extension of acceptance models to “*different IT contexts in order to reach a more comprehensive understanding of what influences adoption and acceptance, ... and to provide more useful recommendations for practice*”.

## CONCEPTUAL FRAMEWORK AND HYPOTHESES

### Technology acceptance drivers

This study identifies a number of factors that may determine the use of professional acceptance of online communities. The applied research model includes nine main determinants (see Figure 1) that were suggested to influence professional online community use for knowledge sharing.

The UTAUT model (Venkatesh et al., 2003) proposes that the intention to use a technology is determined by three main technology drivers: performance expectancy “*the degree to which an individual believes that using the system will help him or her to attain gains in job performance*” (p. 447), effort expectancy “*the degree of ease associated with the use of the system*” (p. 450), and social influence “*the degree to which an individual perceives that important others believe he or she should use the new application*” (p. 451). These three factors have been documented by previous research to be significant predictors in explaining technology use and adoption (Venkatesh et al., 2003, Venkatesh et al., 2012). Thus the following hypotheses are suggested:

H1: A higher level of performance expectancy will lead to a greater level of use of professional online communities for knowledge acquisition behaviour.

H2: A higher level of personal outcomes expectancy will lead to a greater level of use of professional online communities for providing knowledge.

H3a: A lower level of effort expectancy will lead to a greater level of use of professional online communities for knowledge acquisition behaviour.

H3b: A lower level of effort expectancy will lead to a greater level of use of professional online communities for providing knowledge.

H4a: A higher level of social influence will lead to a greater level of use of professional online communities for knowledge acquisition behaviour.

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H4b: A higher level of social influence will lead to a greater level of use of professional online communities for providing knowledge

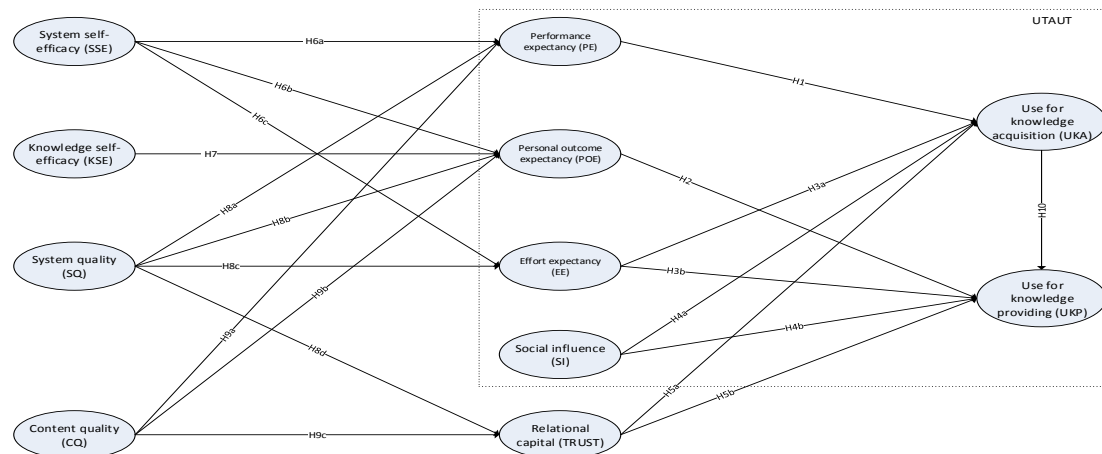


Figure 1: Research model

### Relational capital (Trust)

The availability of communication and information systems does not automatically guarantee people's willingness to share information and develop new knowledge. Previous studies, which tried to address this challenge, have pointed to social relations as a key determinant in motivating people to share their unique knowledge (e.g. Huang, 2009, Usoro et al., 2007). Usoro et al. (2007) reported that lack of trust is considered as a major barrier in knowledge sharing activities. Trust, which has been defined as >>>>, was found to be one of the organisational cultural enablers that showed a significant impact on the knowledge creation process. When individuals trust each other in online communities, they will "liberally exchange, seek, and collect knowledge" (Lee and Choi, 2003). Accordingly H5a and H5b are suggested as follows:

H5a: A higher level of trust will lead to a greater level of use of professional online communities for knowledge acquisition behaviour.

H5b: A higher level of trust will lead to a greater level of use of professional online communities for knowledge providing behaviour.

### System self-efficacy

In the current study, system self-efficacy refers to members' perception of their ability to use the community system and its tools to share their knowledge (acquisition and provision). Regarding the context of this study, system self-efficacy may be necessary. Generally, self-efficacy judgements are expected to influence the outcome expectations as the outcomes, which an individual expects, derive from the judgements of how well he or she can execute the required behaviour. Compeau et al. (1999), Compeau and Higgins (1995a) demonstrated that computer self-efficacy significantly predicted both performance-related outcome expectations and personal outcome expectations. These findings seem to support the hypothesised relationships between system self-efficacy and performance expectancy and personal outcome expectancy. Therefore, the following hypotheses are suggested.

H6a: A higher level of system self-efficacy will lead to a greater level of performance expectancy.

H6b: A higher level of system self-efficacy will lead to a greater level of personal outcomes expectancy.

The proposed relationship between community system self-efficacy and effort expectancy is based on the theoretical argument by Davis (1989). When a community member assesses the effort required to utilise the community's system to carry out a particular task, the evaluation of his/her ability to perform this task is likely to be a key factor in the assessment. In this regard, and based

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on Chan et al. (2010) discussion, the importance of community system self-efficacy may be explained from two points of view: the effort requirement perspective and the facilitating conditions perspective. Firstly, from the effort requirement perspective, community members who are comparatively high in self-efficacy are more likely to perceive that using the community requires less effort in comparison to members with lower self-efficacy. Secondly, from a facilitating conditions perspective, community members with higher self-efficacy are more likely to have the required resources (i.e. knowledge and baseline skills) to use the community system. Therefore, it can be hypothesised that community members anchor effort expectancy perceptions to their community system self-efficacy:

H6c: A higher level of system self-efficacy will lead to a lower level of effort expectancy.

### Knowledge self-efficacy

All things being equal, knowledge self-efficacy judgements or members' ability to create and share knowledge are expected to influence outcome expectations since "*the outcomes one expects derive largely from judgments as to how well one can execute the requisite behaviour*" (Bandura et al., 1987 : p. 241). Positive outcomes can strengthen an individual's behaviour (Bandura, 1997); otherwise, individuals who do not have the required skills, questions their ability and capabilities to execute a specific task or action may perceive their activities or actions as meaningless and pointless (Compeau et al., 1999). Additionally, if an individual believes he/she will be able to execute activity skilfully in the given context (e.g. contributing knowledge), then he/she may expect favourable outcomes than individuals who uncertain their abilities(Compeau et al., 1999).

H7: A higher level of knowledge self-efficacy will lead to a greater level of personal outcome expectancy.

### System quality

The relationship between system/website quality and perceived usefulness has been demonstrated in the literature. Perceived usefulness was found to be significant mediator between system quality and sense of belonging (Lin, 2007a) and system quality and members' satisfaction (Lin, 2008). The perceived benefits of using public websites was found to be determined by information quality and system quality (Sørum et al., 2012). Accordingly, we predict the relationship between system quality and both expectancies as follows:

H8a: A higher level of community's system quality will produce a higher level of performance expectancy.

H8b: A higher level of community's system quality will produce a higher level of personal outcome expectancy of using the professional online system.

The dimension of system quality represents the perceptions of user interactions with the system over time (Davis, 1989), therefore, a higher-quality system should be perceived as easier to use. Nelson et al. (2005) concluded that "*a system that is perceived to be easy to use may also be perceived to be high quality; therefore, ease of use may be a consequence of system quality*" (p. 205). System quality significantly influenced online retailing systems ease of use (Ahn et al., 2007), and the perceived ease of use of digital libraries (Nov and Ye, 2008). Accordingly, we predict the relationship between system quality and effort expectancy as follows:

H8c: A higher level of community's system quality will lead to a lower level of effort expectancy.

In online communities and based on the social capital theory, the dimension of structural capital is more interested in the community system and its ability to grant access to other members and to effectively and efficiently facilitate the process of interaction among community members to share their knowledge and information (Huysman and Wulf, 2006). If users of the community are unable to access the system or the system is perceived as unreliable, then this will impede their ability to increase their relational capital and most likely they will not use this system. Thus, we propose the following hypothesis:

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H8d: A higher level of professional online community's system quality will produce a greater level of trust between the community's members.

### Content quality

Generally speaking, “*without rich and valuable knowledge, online communities are of limited values*” (Chang et al., 2013, p. 801). Cabrera and Cabrera (2002) argue that if individuals find that the shared contents are not worth the time necessary to explore then, they may not participate in the sharing process. Thus, in the one hand, if the professional online community system can provide knowledge seeker, for example, correct, consistent, and accurate knowledge and information, it is more likely that he/she will perceive higher job relevance of the community, and higher level of performance expectancy. Otherwise, if the content quality is evaluated as poor or disappointing, knowledge seekers will be negatively rewarded and will very likely lose their interest in obtaining knowledge. On the other hand, content quality can be beneficial not only for members who use the community for knowledge acquisition, but also for members who use the community for knowledge provision. If a knowledge provider feels that the content is exceptional, he/she may contribute to build, for example, a personal image of expertise (Cabrera et al., 2006, Zheng et al., 2013). Thus, we hypothesise:

H9a: A higher level of knowledge quality will produce a higher level of performance expectancy.

H9b: A higher level of knowledge quality will produce a higher level of personal outcome expectancy of using the professional online system.

Keen et al. (2004) propose that information quality is a crucial key to the “trust-building mechanism” in all forms of online interactions. In more details, they argue that including some positive and favourable information traits (e.g. accuracy, clearness, and understandings), should affect trusting-beliefs integrity in the exchange process. Additionally, showing care toward other parties through providing timely and helpful information is a significant and important driver to build benevolence (McKnight et al., 2002). In a similar manner, the availability of accurate and reliable knowledge is a source of information competence (Nicolaou and McKnight, 2006), which is a dimension of trust-building. Thus, we can propose the following hypothesis.

H9c: A higher level of content quality will lead to a greater level of relational capital (trust).

### Use for knowledge sharing (acquisition and provision)

Once people who mainly search for information have learned more about the community and gain familiarity with the method of posting message or have different attitudes toward the community, they will actively provide information (Nonnecke et al., 2006). Blau (1964: p. 89) claims that “an individual who supplies rewarding services to another obligates him. To discharge this obligation, the second must furnish benefits to the first in turn”. In this respect, the social exchange theory suggests that “when an individual receives a favour from another party, there is an expectation of some future return, although when it will occur and what form it will take is usually unstated” (Watson and Hewett, 2006: p. 148). Therefore, the following hypothesis is suggested.

H10: A higher level of use of the community for knowledge acquisition will lead to a greater level of use of the community for knowledge provision.

## RESEARCH METHODOLOGY

### Measurement

The research model includes 11 constructs, each of which was measured with multiple items. The majority of these items were adapted from the extant literature. Specifically, this study used and combined reliable and pre-validated scales from a pool of research (e.g. Kang et al., 2008, Kankanhalli et al., 2005, Willem and Buelens, 2007, Compeau et al., 1999, Lee and Choi, 2003, Barnes and Vidgen, 2012, Wang and Wang, 2009, Venkatesh et al., 2012).



**Data collection**

Following the recommendations of the empirical prior research conducted in the context of online communities (e.g. Preece et al., 2004, Ridings and Gefen, 2004, Ridings et al., 2002), this study collected data from diverse professional online communities. As table 1 shows, eight unions agreed to support and distribute the questionnaire link among their members.

**Table 3: Respondents’ characteristics**

Characteristic	Frequency	Valid %	
<b>Gender</b>	Male	228	71.0
	Female	93	29.0
<b>Age</b>	Less than 25	11	3.5
	25-30	75	23.7
	30-35	99	31.3
	35-40	93	29.4
	40-50	34	10.8
	Over 50	4	1.3
<b>Education</b>	Technical institution (2 years)	14	4.4
	College degree	212	66.3
	Master/diploma	73	22.8
	Doctorate or equivalent	21	6.6
<b>Profession</b>	Lawyer	37	11.5
	Teacher/academic staff	79	24.6
	Physician	30	9.3
	Dentist	22	6.9
	Engineer	42	13.1
	Veterinarian	15	4.7
	Accountant/financial services	66	20.6
	Pharmacist	28	8.7
	Other	2	0.6

Web-based survey was employed to collect the research data. In more details, an online survey instrument was developed and posted on <http://www.qualtrics.com/>. The data collection process lasted for three months (16-8-2012 to 15-11-2012). In total, 367 responses were received. However, 40 responses were discarded that resulted in 327 valid responses. The characteristics of the respondents are presented in Table 3.

**DATA ANALYSIS**

**Measurement Model**

Confirmatory Factor Analysis CFA using AMOS 20 was conducted to confirm the measurement model. The measurement model fit statistics showed an acceptable and satisfactory measurement model fit (see Table 5). As seen in table 4, all AVE values are above the recommended value 0.5 (Chin, 2010, Urbach and Ahlemann, 2010), which indicates an acceptable and sufficient convergent validity at the constructs level. Discriminant validity was assessed by examining the square root of the AVE as recommended by Fornell and Larcker (1981). The square root of the AVE for each construct should be greater than its correlation with the other constructs. The diagonal cells in Table 4 present the square root of the AVE for every construct. It shows that every square root of AVE for each construct is larger than its correlations with the other constructs.

For common method variance, Harman’s one factor using exploratory factor analysis (EFA) demonstrated that no one factor accounts for the majority of covariance. CFA one factor and “unmeasured latent method factor” were used with Harman’s one-factor as more sophisticated tests and to avoid the insensitivity of Harman’s one-factor test. Similarly, the results indicated that the

CMV is not a serious problem and is not responsible for the relationships among the research constructs.

**Table 4: Correlation matrix and discriminant validity**

	CP	AV	UK	PE	PO	KSE	SSE	CO	EE	SQ	TRUS	SI	UK
UKA	0.80	0.77	0.87										
PE	0.90	0.70	0.61	<b>0.84</b>									
POE	0.92	0.71	0.42	0.45	<b>0.84</b>								
KSE	0.92	0.70	0.03	0.08	0.22	<b>0.84</b>							
SSE	0.93	0.74	0.44	0.35	0.37	0.14	<b>0.86</b>						
CO	0.92	0.74	0.49	0.44	0.42	-	0.39	<b>0.86</b>					
EE	0.90	0.76	0.52	0.47	0.35	0.07	0.43	0.56	<b>0.87</b>				
SQ	0.92	0.74	0.45	0.46	0.27	0.04	0.33	0.49	0.56	<b>0.86</b>			
TRUS	0.90	0.70	0.41	0.38	0.33	0.14	0.20	0.50	0.52	0.37	<b>0.841</b>		
SI	0.92	0.74	0.33	0.25	0.20	-	0.24	0.32	0.32	0.29	0.215	<b>0.86</b>	
UKP	0.91	0.77	0.53	0.37	0.60	0.14	0.35	0.47	0.38	0.40	0.391	0.24	<b>0.88</b>

**Structural model testing**

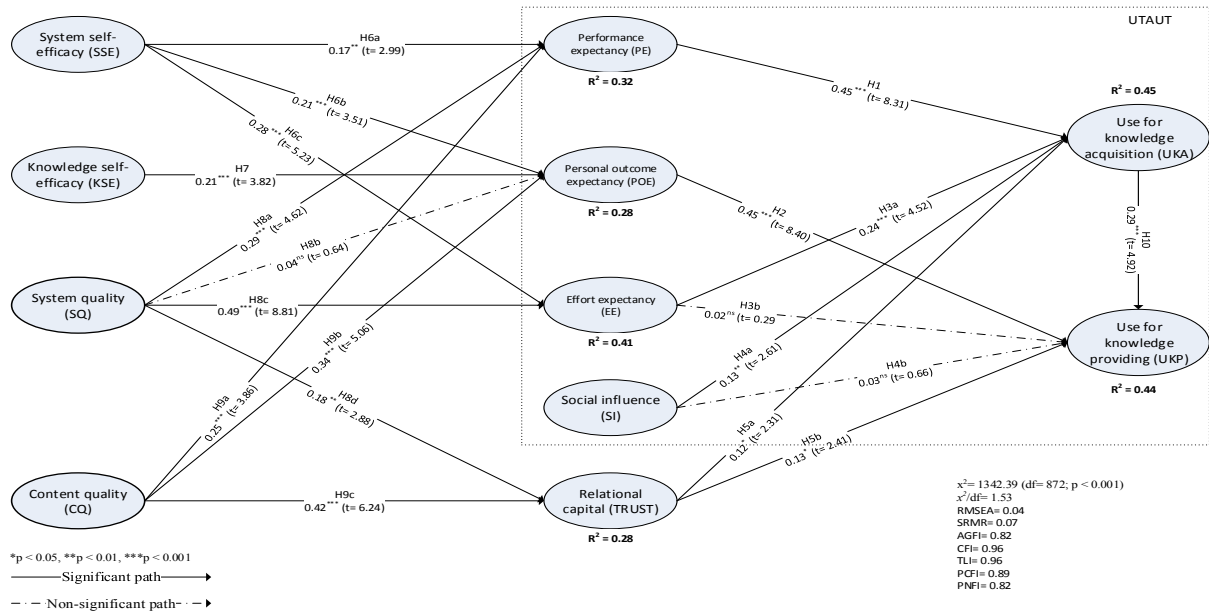
Using the Maximum Likelihood ML estimation method, the findings revealed the absence of any identification problems. The model notes degree of freedom revealed an over-identified model. At the overall level, the model fit indices statistics revealed an acceptable structural model as the following table shows (see Table 6).

**Table 5: Fit indices for measurement and structural models**

Index	$\chi^2$	$\chi^2/df$	RMSEA A	SRMR	AGFI	CFI	TLI	PNFI	PCFI
<b>Cut-off value</b> (Hair et al., 2010, Meyers et al., 2006, Hu and Bentler, 1999, Sharma et al., 2005, Straub et al., 2004)	<b>P &gt; 0.05</b>	<b>&lt; 3</b>	<b>&lt; 0.05</b>	<b>&lt; 0.08</b>	<b>&gt; 0.80</b>	<b>&gt; 0.90</b>	<b>&gt; 0.90</b>	<b>&gt; 0.50</b>	<b>&gt; 0.50</b>
<b>Measurement model</b>	1209.14 (df= 847; p < 0.05)	1.42 8	0.036	0.03 6	0.83 4	0.96 8	0.96 5	0.81 0	0.86 8
<b>Structural model</b>	1342.391 (df=872; p < 0.05)	1.53 9	0.041	0.06 5	0.82 3	0.96 0	0.95 6	0.82 4	0.88 5

The path significance of each hypothesised relationship in the research model was examined. The findings of SEM indicate that all paths were significant except the paths EE → UKP, SI → UKP, and SQ → POE. As for UKA, it was found to be predicted by four variables: PE, EE, SI, and Trust. These four variables explained 45% of the variance of UKA. With regard to UKP, three variables POE, UKA, and Trust were found to explain 44% of its variance.

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**Figure 2: Results of SEM path analysis**

EE was predicted by SSE and SQ, which jointly explained 41% of the EE variance. PE was predicted by SSE, SQ, and CQ, which jointly explained 32% of the PE variance. SSE, KSE, and CQ jointly explained 28% of the POE variance. Finally, Trust was found to be influenced by SQ and CQ, which jointly explained 28% of the Trust variance. Figure 2 shows the results of SEM.

## DISCUSSION AND CONCLUSION

These findings suggest that, based on the perception of professionals who used the community for knowledge acquisition, the existence and endurance of reliable and appropriately designed system, along with correct, useful, important, and understandable knowledge are the main drivers of expecting better performance, which, in turn, was found to be the main determinant of using a professional online community for knowledge acquisition. Moreover, the SEM results highlight and suggest that the ability to provide correct, useful, important, and understandable knowledge, along with the capability to use the community's system are the main drivers of expecting favourable outcomes (e.g. feeling of competency, enjoyment, and reputation), which, in turn, were found to be the strongest determinant of using a professional online community for knowledge provision.

Contrary to expectation, SQ had no direct influence on POE. Thus, hypothesis H8b was not supported. These findings mean that, for members who provide knowledge, the community system may be important but not sufficient to provide or perceived to provide benefits. However, despite the growing tendency to emphasise the important role of system quality in IS success models, our findings are consistent with a number of prior management information system MIS research (e.g. Gupta and Kim, 2004b, Chen, 2007, Floropoulos et al., 2010, Choi et al., 2008, Wang and Liao, 2008). However, there are two possible reasons for this lack of support. First, the results indicate that members who used the community to provide knowledge had high scores on system self-efficacy and high experience with the Internet and community system. Thus this insignificant relationship is probably because of their familiarity with the system, which might lead to less concern about the quality of the community system. Second, system quality as a technology characteristic may not be sufficient to influence the perceived usefulness of using the community to provide knowledge. Based on the holistic view (the interaction between social factors and technical factors), POE is more influenced by the quality of provided knowledge, the quality of relations with the other members (e.g. trust), and members' ability to deal with the system and to create knowledge (self-efficacy).



Although effort expectancy is grounded as a significant antecedent of technology use intention in the UTAUT model (Venkatesh et al., 2003, Venkatesh et al., 2012, Venkatesh et al., 2011), previous research has revealed mixed results. A number of studies did not demonstrate a significant relationship between effort expectancy/ease of use and system use (e.g. Karahanna et al., 2006, Zhou et al., 2010, Igarria and Igarria, 1995, Burton-Jones and Hubona, 2006). Regarding this study, based on Van Deursen and Van Dijk (2011), using professional online communities for looking for knowledge and information is concluded to be somewhat harder than using them for providing information and knowledge. They have described three different skills: instrumental or operational skills (how to operate or manipulate technology); structural skills (to find out how information or knowledge is contained); and strategic skills (the ability to process, find, and evaluate contained knowledge and information). Although both usage behaviours (use for knowledge acquisition and use for knowledge provision) require the possession of instrumental or operational skills, structural skills and strategic skills are more important to use professional online communities for knowledge acquisition. Hence, the insignificant relationship between effort expectancy and use for knowledge providing can be attributed to combining both usage behaviours in one model. For members who use the community for acquisition and providing, effort expectancy regarding knowledge provision is insignificant. Having the required skills to search and look for knowledge weakened the perceived effort expectancy required for providing knowledge.

Social influence mixed results. It was found to be a significant predictor of the use of knowledge acquisition not the use for knowledge provision. Perhaps not surprisingly, these mixed results and the prior research findings indicate that the use of professional online communities for knowledge acquisition is, besides being affected by members' own beliefs and their expectations regarding performance and effort, is affected by, for example, friends and colleagues' advice and opinions. However, the use for knowledge provision was concluded to be a more personal and individual issue that may not be explained by social influence. Venkatesh et al. (2003) suggested that use behaviour, especially after a period of use in voluntary contexts, depends on the system user's beliefs rather than on peoples' advice and opinions. In the light of this suggestion, the weak effect of social influence on use for knowledge provision can be explained by the fact that professional online community's characteristics, such as voluntary usage and experience, might imply that members' expectancy about the benefits they will gain dominate the decision to use the community for knowledge provision. This conclusion is supported by the strong influence of the "personal outcome expectancy" construct on use for knowledge provision. From a knowledge-sharing standpoint, one of the main reasons that may affect individuals' desire to share their knowledge is considering knowledge as a source of power and superiority. Therefore, donating this power was found to be more affected by individual and personal factors such as enjoyment in helping others, reciprocity, and feeling of competency (e.g. Kankanhalli et al., 2005, Huang, 2009) rather than social factors.

Finally, although system quality and content quality were verified as important variables, they did not play an equal role in contributing to relational capital – Trust. Specifically, content quality had the largest influence on community use for knowledge sharing via trust. However, the findings suggest that, based on the perception of professional online communities' members, the existence and endurance of reliable and appropriately designed system, along with correct, useful, important, and understandable knowledge are main determinants of trust-building, which, in turn, was found to be significant predictor of using a professional online community for knowledge sharing (acquisition/provision). Thus, it can be concluded that the more the community's users perceive high content and system quality; the more likely to trust each other and, consequently, use the community to share their knowledge.

### IMPLICATIONS FOR THEORY AND PRACTICE

First, this study expanded our knowledge of using these communities by introducing and adopting multi-theoretical approach and therefore this study contributes to the establishment of a more comprehensive and integrated model of using these communities for knowledge sharing (knowledge acquisition and knowledge provision).

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Second, by developing a comprehensive model that includes both usage behaviours, this study contributes to knowledge by illustrating that the monolithic view of general usage or use for provision only cannot tell the whole story. Thus, it sheds more light not only about how community members can provide and contribute their knowledge but also how they can acquire knowledge and gain performance benefits from the community.

Third, to the best of the researcher's knowledge, this study is the first to examine the mediating role of personal outcome expectancy between knowledge/system self-efficacy and professional online community use. As such, this study contributes to knowledge by confirming that system self-efficacy, knowledge self-efficacy, content quality, and system quality are important determinants of effort expectancy and performance/personal outcome expectancy.

Finally, especially in marketing, few researchers have studied the relationship between "website quality and website usability" and some social and behavioural aspects such as customer trust and commitment (Flavian et al., 2006, Wells et al., 2011). The findings of this study revealed that community members who perceive high content and system quality are more likely to show higher degree of relational capital (trust) when they share their knowledge.

A good professional online community should not only provide high-quality content but should be also user-friendly community. Especially for using for knowledge acquisition, the findings suggest that community managers and designers should pay significant attention towards the design of the community system. Reliable, flexible, available, and well-designed community systems were found to determine performance and personal outcome expectancies of using the community, effort needed to use the community, and social relationships.

Appendix A: Questionnaire is available at request

## REFERENCES

- AHN, T., RYU, S. & HAN, I. 2007. The impact of Web quality and playfulness on user acceptance of online retailing. *Information & Management*, 44, 263-275.
- BANDURA, A. 1997. *Self-efficacy : the exercise of control*, New York, W.H. Freeman.
- BANDURA, A. & EDWIN, A. L. 2003. Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology*, 88, 87.
- BANDURA, A., O LEARY, A., TAYLOR, C. B., GAUTHIER, J. & GOSSARD, D. 1987. Perceived Self-Efficacy and Pain Control: Opioid and Nonopioid Mechanisms. *Journal of Personality and Social Psychology*, 53, 563.
- BARNES, S. J. & VIDGEN, R. 2012. User acceptance and corporate intranet quality: An evaluation with iQual. *Information & Management*, 49, 164-170.
- BENBASAT, I. & BARKI, H. 2007. Quo vadis, TAM. *Journal of the Association for Information Systems*, 8, 211-218.
- BLAU, P. M. 1964. *Exchange and power in social life*, New York,, J. Wiley.
- BURTON-JONES, A. & HUBONA, G. S. 2006. The mediation of external variables in the technology acceptance model. *Information & Management*, 43, 706-717.
- CABRERA, A. & CABRERA, E. F. 2002. Knowledge-sharing dilemmas. *Organization Studies*, 23, 687.
- CABRERA, A., WILLIAM, C. C. & JESUS, F. S. 2006. Determinants of individual engagement in knowledge sharing. *The International Journal of Human Resource Management*, 17, 245.
- CHAN, F., THONG, J. Y., VENKATESH, V., BROWN, S., HU, P. & TAM, K. Y. 2010. Modeling citizen satisfaction with mandatory adoption of an e-government technology. *Journal of the Association for Information Systems*, 11, 519-549.
- CHANG, Y.-S., HSU, S.-F., LIAO, C.-H. & LIN, S.-C. Knowledge Sharing in Online Communities: Subjective Norm, Trust, Media Richness, and the Individual's Role in Knowledge Sharing. World Conference on Educational Multimedia, Hypermedia and Telecommunications, 2013. 801-806.

- CHEN, I. Y. L. 2007. The factors influencing members' continuance intentions in professional virtual communities - a longitudinal study. *Journal of Information Science*, 33, 451.
- CHIN, W. W. 2010. How to write up and report PLS analyses. *Handbook of partial least squares*. Springer.
- CHIU, C.-M., MENG-HSIANG, H. & ERIC, T. G. W. 2006. Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. *Decision Support Systems*, 42, 1872.
- CHOI, S. Y., KANG, Y. S. & LEE, H. 2008. The effects of socio-technical enablers on knowledge sharing: an exploratory examination. *Journal of Information Science*, 34, 742-754.
- COMPEAU, D., HIGGINS, C. & HUFF, S. 1999. Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS Quarterly*, 23, 145.
- COMPEAU, D. R. & HIGGINS, C. A. 1995a. Computer self-efficacy: Development of a measure and initial test. *MIS Quarterly*, 19, 189.
- COMPEAU, D. R. & HIGGINS, C. A. 1995b. Application of social cognitive theory to training for computer skills. *Information Systems Research*, 6, 118.
- DAVIS, F. D. 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13, 319-340.
- FLAVIAN, C., GUINALIU, M. & GURREA, R. 2006. The role played by perceived usability, satisfaction and consumer trust on website loyalty. *Information & Management*, 43, 1-14.
- FLOROPOULOS, J., SPATHIS, C., HALVATZIS, D. & TSIPOURIDOU, M. 2010. Measuring the success of the Greek taxation information system. *International Journal of Information Management*, 30, 47-56.
- FORNELL, C. & LARCKER, D. F. 1981. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18, 39-50.
- GUPTA, K. 2008. A comparative analysis of knowledge sharing climate. *Knowledge and Process Management*, 15, 186.
- GUPTA, S. & KIM, H.-W. 2004b. Enhancing the Commitment to Virtual Community: A Belief and Feeling Based Approach. In: PROCEEDINGS, I. (ed.).
- HAIR, J. F., BLACK, W., BABIN, B. & ANDERSON, R. 2010. *Multivariate data analysis : a global perspective*, Upper Saddle River, N.J. ; London, Pearson Education.
- HU, L. T. & BENTLER, P. M. 1999. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1-55.
- HUANG, C.-C. 2009. Knowledge sharing and group cohesiveness on performance: An empirical study of technology R&D teams in Taiwan. *Technovation*, 29, 786-797.
- HUYSMAN, M. & WULF, V. 2006. IT to support knowledge sharing in communities, towards a social capital analysis. *Journal of Information Technology*, 21, 40-40-51.
- IGBARIA, M. & IIVARI, J. 1995. The effects of self-efficacy on computer usage. *Omega*, 23, 587-605.
- KANG, Y.-J., KIM, S.-E. & CHANG, G.-W. 2008. The Impact of Knowledge Sharing on Work Performance: An Empirical Analysis of the Public Employees' Perceptions in South Korea. *International Journal of Public Administration*, 31, 1548 - 1568.
- KANKANHALLI, A., TAN, B. & WEI, K.-K. 2005. Contributing knowledge to electronic knowledge repositories: an empirical investigation. *MIS Quarterly*, 29, 113.
- KARAHANNA, E., AGARWAL, R. & ANGST, C. M. 2006. Reconceptualizing compatibility beliefs in technology acceptance research. *Mis Quarterly*, 781-804.
- KEEN, C., WETZELS, M., DE RUYTER, K. & FEINBERG, R. 2004. E-tailers versus retailers: Which factors determine consumer preferences. *Journal of Business Research*, 57, 685-695.
- KIM, J., SONG, J. & JONES, D. R. 2011. The cognitive selection framework for knowledge acquisition strategies in virtual communities. *International Journal of Information Management*, 31, 111-120.

- LEE, H. & CHOI, B. 2003. Knowledge Management Enablers, Processes, and Organizational Performance: An Integrative View and Empirical Examination. *J. Manage. Inf. Syst.*, 20, 179-228.
- LIANG, C.-J. & CHEN, H.-J. 2009. How to lengthen, deepen and broaden customer–firm relationships with online financial services&quest. *Journal of Financial Services Marketing*, 14, 218-231.
- LIN, H.-F. 2007a. Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions. *Journal of Information Science*, 33, 135.
- LIN, H.-F. 2008. Determinants of successful virtual communities: Contributions from system characteristics and social factors. *Information & Management*, 45, 522-527.
- MCKNIGHT, D., HARRISON, CHOUDHURY, V. & KACMAR, C. 2002. The impact of initial consumer trust on intentions to transact with a web site: a trust building model. *The Journal of Strategic Information Systems*, 11, 297-323.
- MEYERS, L. S., GAMST, G. & GUARINO, A. J. 2006. *Applied multivariate research: Design and interpretation*, SAGE Publications, Incorporated.
- NELSON, R. R., TODD, P. A. & WIXOM, B. H. 2005. Antecedents of information and system quality: an empirical examination within the context of data warehousing. *Journal of Management Information Systems*, 21, 199-235.
- NICOLAOU, A. I. & MCKNIGHT, D. H. 2006. Perceived information quality in data exchanges: Effects on risk, trust, and intention to use. *Information Systems Research*, 17, 332-351.
- NONNECKE, B., ANDREWS, D. & PREECE, J. 2006. Non-public and public online community participation: Needs, attitudes and behavior. *Electronic Commerce Research*, 6, 7-20.
- NOV, O. & YE, C. 2008. Users' personality and perceived ease of use of digital libraries: The case for resistance to change. *Journal of the American Society for Information Science and Technology*, 59, 845-851.
- PREECE, J., NONNECKE, B. & ANDREWS, D. 2004. The top five reasons for lurking: improving community experiences for everyone. *Computers in Human Behavior*, 20, 201-223.
- QUIGLEY, N. R., PAUL, E. T., EDWIN, A. L. & KATHRYN, M. B. 2007. A Multilevel Investigation of the Motivational Mechanisms Underlying Knowledge Sharing and Performance. *Organization Science*, 18, 71.
- RIDINGS, C. M. & GEFEN, D. 2004. Virtual Community Attraction: Why People Hang Out Online. *Journal of Computer-Mediated Communication*, 10, 00-00.
- RIDINGS, C. M., GEFEN, D. & ARINZE, B. 2002. Some antecedents and effects of trust in virtual communities. *The Journal of Strategic Information Systems*, 11, 271-295.
- SEDDON, P. B. 1997. A respecification and extension of the DeLone and McLean model of IS success. *Information systems research*, 8, 240-253.
- SEDDON, P. B. & KIEW, M.-Y. 1996. A PARTIAL TEST AND DEVELOPMENT OF DELONE AND MCLEAN'S MODEL OF IS SUCCESS3. *AJIS*, 4.
- SHARMA, S., MUKHERJEE, S., KUMAR, A. & DILLON, W. R. 2005. A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. *Journal of Business Research*, 58, 935-943.
- SØRUM, H., ANDERSEN, K. N. & VATRAPU, R. 2012. Public websites and human–computer interaction: an empirical study of measurement of website quality and user satisfaction. *Behaviour & Information Technology*, 31, 697-706.
- STRAUB, D., BOUDREAU, M.-C. & GEFEN, D. 2004. “Validation Guidelines for IS Positivist Research. *Communications of the AIS*, 13, 380-427.
- STRAUB, E. T. 2009. Understanding technology adoption: Theory and future directions for informal learning. *Review of Educational Research*, 79, 625-649.
- URBACH, N. & AHLEMANN, F. 2010. Structural equation modeling in information systems research using partial least squares. *Journal of Information Technology Theory and Application*, 11, 5-40.

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- USORO, A., SHARRATT, M. W., TSUI, E. & SHEKHAR, S. 2007. Trust as an antecedent to knowledge sharing in virtual communities of practice. *Knowledge Management Research & Practice*, 5, 199-212.
- VAN DEURSEN, A. & VAN DIJK, J. 2011. Internet skills and the digital divide. *New Media & Society*, 13, 893-911.
- VENKATESH, V., MORRIS, M. G., DAVIS, G. B. & DAVIS, F. D. 2003. User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- VENKATESH, V., THONG, J. & XU, X. 2012. Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS quarterly*, 36, 157-178.
- VENKATESH, V., THONG, J. Y., CHAN, F. K., HU, P. J. H. & BROWN, S. A. 2011. Extending the two-stage information systems continuance model: incorporating UTAUT predictors and the role of context. *Information Systems Journal*, 21, 527-555.
- WANG, Y.-M. & WANG, Y.-S. 2009. Examining the dimensionality and measurement of user-perceived knowledge and information quality in the KMS context. *Journal of Information Science*, 35, 94-109.
- WANG, Y.-S. & LIAO, Y.-W. 2008. Assessing eGovernment systems success: A validation of the DeLone and McLean model of information systems success. *Government Information Quarterly*, 25, 717-733.
- WASKO, M. M. & FARAJ, S. 2005. Why should I share? Examining social capital and knowledge contribution in electronic networks of practice1. *MIS Quarterly*, 29, 35.
- WATSON, S. & HEWETT, K. 2006. A Multi-Theoretical Model of Knowledge Transfer in Organizations: Determinants of Knowledge Contribution and Knowledge Reuse\*. *Journal of Management Studies*, 43, 141-173.
- WELLS, J. D., VALACICH, J. S. & HESS, T. J. 2011. What Signals Are You Sending? How Website Quality Influences Perceptions of Product Quality and Purchase Intentions. *MIS Quarterly*, 35, 373-396.
- WIDEN-WULFF, G. & MARIAM, G. 2004. Explaining knowledge sharing in organizations through the dimensions of social capital. *Journal of Information Science*, 30, 448.
- WILLEM, A. & BUELENS, M. 2007. Knowledge Sharing in Public Sector Organizations: The Effect of Organizational Characteristics on Interdepartmental Knowledge Sharing. *Journal of Public Administration Research and Theory*, 17, 581.
- WIXOM, B. H. & TODD, P. A. 2005. A Theoretical Integration of User Satisfaction and Technology Acceptance. *INFORMATION SYSTEMS RESEARCH*, 16, 85-102.
- YU, M. Y., LANG, K. & KUMAN, N. 2009. Internationalization of Online Professional Communities: An Empirical Investigation of AIS-ISWorld. *International Journal of e-Collaboration (IJeC)*, 5, 13-31.
- ZHENG, Y., ZHAO, K. & STYLIANOU, A. 2013. The impacts of information quality and system quality on users' continuance intention in information-exchange virtual communities: An empirical investigation. *Decision Support Systems*, 56, 513-524.
- ZHOU, T., LU, Y. & WANG, B. 2010. Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior*, 26, 760-767.
- ZOU, Q. & PARK, E. G. 2011. Understanding Trust in Virtual Communities: Revisited. *Ict Ethics and Security in the 21st Century: New Developments and Applications*, 1.