MEASURING ORGANISATIONAL READINESS FOR SUCCESSFUL ONLINE KNOWLEDGE SHARING

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ABSTRACT

The way of working and workplace have been both reshaped radically by technology during the last decade, which in turn has created a new virtual world of online collaboration. The new conditions have allowed employees working in different units or geographic locations to team upon projects and build communities. Nevertheless most of the organisations have been unable to experience these changes where the traditional face to face meetings, line telephones and emails are still the only way of communication. On the other hand, many employees individually have kept up with the latest developments in the communication technologies such as exchanging knowledge by their smart phones in virtual communities like online forums and social networks. We, therefore, argue that readiness for successful knowledge sharing is differentiated between individuals and organisations. In this study, a theoretical framework and a questionnaire were developed to illustrate and measure the knowledge sharing factors from individual and organisational levels separately.

Keywords: Knowledge management, online knowledge sharing, virtual collaboration, virtual communities of practice, readiness for change.

BAŞARILI BİR ÇEVRİMİÇİ BİLGİ PAYLAŞIMI İÇİN ÖRGÜTSEL VE BİREYSEL HAZIR OLMA DURUMUNUN ÖLÇÜLMESİ

ÖZ

Alışılagelmiş çalışma biçimleri ve çalışma yerleri kavramları son yıllardaki teknolojik gelişmeler neticesinde radikal bir değişim geçirmektedir. Bu değişim neticesinde oluşan yeni çevrimiçi sanal işbirliği dünyası sayesinde çalışanlar artık bulundukları mekanlardan bağımsız olarak aynı projelerde birlikte çalışabilme ve sanal topluluklar oluşturabilme imkanlarına sahip olabilmektedirler. Ne var ki bu değişim sürecine örgütler bireyler kadar hızlı adapte olamamaktadırlar. Birçok birey çevrimiçi topluluklarda, forumlarda akıllı telefonları ile bilgi paylaşımı yaparken; birçok örgüt içerisinde bilgi paylaşımı halen sabit telefonlar, e-postalar ve yüz yüze görüşme ile gerçekleştirilmektedir. Dolayısı ile örgütlerde başarılı bilgi paylaşım sistemleri kurulabilmesi için hazırlıklı olma durumu bireylere ve örgütlere göre değişim göstermektedir. Bu çalışmada, çevrimiçi platformlarda bilgi paylaşımını etkileyen bireysel ve örgütsel faktörler kapsamlı bir alanyazın taraması neticesinde ortaya çıkarılmışlardır.

Anahtar Kelimeler: Bilgi yönetimi, çevrimiçi bilgi paylaşımı, sanal işbirliği, sanal uygulama toplulukları, değişime hazır olma.

During the last century information and communication technologies (ICTs) tools and platforms have advanced exceptionally, considering drastic changes from telegraphs to smartphones and from indoor meetings to virtual conferencing platforms. Nowadays, it is very simple to contact someone or to create, share and exchange knowledge from almost *anywhere at anytime* due to improvements in ICTs. In fact, such a great advancement has been based on the developments during the last century. For instance, transmitting audio signals through telephony was a revolution in the communication technologies, when we think about the telegraphy. Afterwards transferring digital data has become possible through hardware solutions such as switches. Of course, the internet has enabled us to transfer data and audio together which has led numerous advancements in the communication technologies. Finally, radio transmission has advanced drastically from 1G to 5G over the recent years, hence it has facilitated huge amount of wireless data transmission. Overall the way of people live and communicate have changed radically (Agrawal and Zeng 2015).

Due to the above stated improvements, the independency of people from both space and time in terms of communication has increased exceptionally. To start with 'space', people do not any longer need to stay in the same place to quickly communicate each other. The traditional face to face meetings have already been evolved to virtual calls or videos due to mobile phones and video conference systems particularly when the distance is a problem (Figure 1.). People prefer spending their time with these tools for various reasons ranging from to be socialised, to search for a solution to a problem, to collaborate on work projects or just to fill their spare time. More and more people prefer to spend their time on virtual platforms or tools such as social networks, chats, internet forums, wikis, blogs and avatars.

To continue with 'time', such virtual platforms have changed the 'time perception' of people as well. This is due to the fact that the necessity of synchronous communication is stressed in the recent years; satellite and computer-mediated communication are earning much attention (Kagawa 1996). Synchronous communication, meanwhile, could be defined as "a natural communication involved: co-location, synchronicity, and the ability to convey and observe facial expression, body language, and speech" (Hrastinski 2008: 500). For instance, a real- time face to face or telephone communication between two people could be considered as an example of synchronous

communication. On the other hand, in asynchronous communication the parties do not need to instantly respond to messages or ideas of each other.

Figure 1. Community of collaboration approaches (Saint-Onge and Wallace 2003)
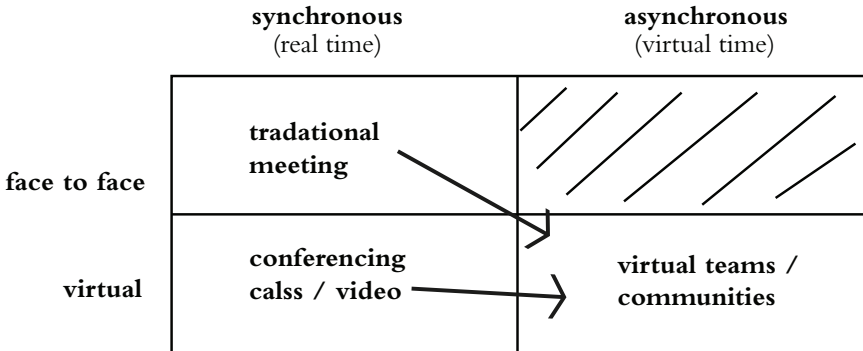
To put it briefly, mobility of knowledge has increased and the place where knowledge exchanged has transformed to more virtual places (Figure 1.). Consequently, both the way of working and workplace have been restructured due to the mentioned developments in ICTs. The new virtual world of online collaboration has allowed employees to create virtual communities of practice (VCoPs) where they can gain or create new knowledge through exchanging information and experience on topics in which they have common interest.

Apart from those, many individuals have kept up with the mentioned improvements in ICTs particularly in terms of knowledge sharing. For instance, increasing number of individuals use their smart phones to exchange knowledge in virtual communities. However, digital technologies have not replaced many ways of exploiting organisational knowledge sharing processes in organisations. In many organisations traditional communication methods such as line phones, face-to-face meetings and e-mails are still the only ways of knowledge sharing. The difference of digital adoption between individuals and organisations indicates that the factors influence online knowledge sharing must be taken into account separately as organisational and individual factors.

Research questions:

i. Who is ready and who is not for a successful knowledge sharing? Organisations or individuals?

ii. What are the individual factors influencing knowledge sharing in virtual communities?

iii. What are the organisational factors influencing knowledge sharing in virtual communities?

One of the main purposes of this paper is to develop a questionnaire through reviewing the related knowledge management literature. Hence, the questionnaire may aid organisations to evaluate their readiness from both organisational readiness and individual readiness for successful knowledge sharing. A further expected outcome of this study is to develop a theoretical framework to illustrate the factors influence online knowledge sharing in organisations. The framework may aid organisations to consider a variety of factors together when developing online knowledge sharing platforms such as forums.

1. FACTORS INFLUENCE ONLINE KNOWLEDGE SHARING IN VIRTUAL COMMUNITIES

Employees used to able to create only communities of practice (CoPs) in the workplace in the past. CoPs could be described as a group of people, in often organic structures, have common interest to gain or create new knowledge through sharing information and experience (Lave and Wenger 1991). A further brief description about CoPs is that a group of individuals come together to work collaboratively to improve their practice (Ardichvili, Page and Wentling 2003; Saint-Onge and Wallace 2003), even though they do not usually work together. CoPs exist in offline (i.e., physical) settings for instance, a lunchroom at work, a field setting, a factory floor, or elsewhere in the environment where individuals meet face to face to discuss and share knowledge (Majewski and Usoro 2011).

The new virtual world of online communication has influenced the structure of CoPs as well. The reliance on computer mediation in contemporary communication forms has added a virtual dimension to CoPs and has allowed VCoPs (Majewski and Usoro 2011). The place where knowledge embedded, exchanged and created transformed to more virtual forms such as online forums, wikis, blogs and avatars compared to physical forms of CoPs such as face to face interactions in meeting rooms. Additionally, the time perception of people has changed due to computer-mediated asynchronous communications. Consequently, the new virtual dimension of CoPs is called as virtual communities of practice (VCoP). Faraj, Kudaravalli and

Wasko (2015: 394) described VCoPs as "the sharing, transfer, accumulation, transformation, and creation of knowledge" in virtual platforms. Therefore, mentality of managing knowledge in VCoPs differs from the CoPs where knowledge used to transmit through synchronous communications in physical places.

In fact, participants of VCoPs use several ICTs tools ranging from email to video conferences to "extend the boundaries of traditional face-to-face communities by creating virtual communities that enable global asynchronous and real-time collaboration" (Usoro, Sharratt, Tsui and Shekhar 2007: 200). Such a wide availability of knowledge management tools may aid organisations to manage their knowledge capital and to accelerate the speed of knowledge exchanged among their members and units (Saint-Onge and Wallace 2003). For instance, members of a virtual community of practice can enjoy the benefits of knowledge sharing irrespective of their geographical location and time such as in online forums, which in turn increase organisational collaboration and effectiveness.

On the other hand, suitable ICTs tools for knowledge sharing could foster knowledge sharing only to certain extend. Technology itself may not be enough for an organisation to have an effective knowledge sharing platform. It is due to the fact that there are variety of factors that may influence online knowledge sharing in organisations which have forums. Those factors may vary from organisational support, organisational communication culture, organisational knowledge sharing culture to availability of a suitable place to share knowledge (Ardichvili, Page and Wentling 2003; Barker 2015; Hasan and Pfaff 2006; Nonaka and Konno 1998; Saint-Onge and Wallace 2003; Wenger 2000). Therefore, identification of all the possible factors that influence knowledge sharing is essential.

In this regard, related knowledge management literature was reviewed with the objectives mentioned in the introduction section. Through reviewing the related literature a questionnaire was designed to provide a guideline for the positivist researchers who intend to study the causes of knowledge sharing in virtual communities. The questionnaire was started with an explanation section about the aims of the study. The questions of the questionnaire were generated through both reviewing the related knowledge management literature and also using some of the existing measurements. All of the questions were closed-ended. The demographic questions were

suggested to be included at the end of the questionnaire in order to make participants feel more relaxed during answering the questions (Baş 2010). Lastly, three control variables were also included in the questionnaire in order to increase validity.

1.1. Measurement Scales of Individual Factors

1.1.1. Trust

Trust is one of the key elements in fostering participation and knowledge sharing in VCoPs. In fact, without establishing trust among the members of a community it is not easy to expect them to participate and exchange their knowledge with others (Chiu et al. 2006). Even though establishing trust is the hardest part it is the most significant issue in developing the sense of identity and belonging among the members of an organisation, trust could be improved through participation. For instance, hesitation of members to contribute knowledge sharing could be eliminated if their knowledge contributions are validated by the members of that community. A measure developed by Chiu et al. (2006) will be used in our questionnaire as listed below in the table 1, the measurement scale of trust.

Table 1: The Measurement Scale of Trust

Construct	Item	Measure	Source	Reliability (composite reliability)
Trust (TR)	Question	Please, answer the questions below regarding to "trust" issues.	-	-
Trust (TR)	TR01	Members in the virtual community I use will not take advantage of others even when the opportunity arises.	Chiu et al. (2006: 1879).	0.89
Trust (TR)	TR02	Members in the virtual community I am in always keep the promises they make to one another.	Chiu et al. (2006: 1879).	0.89

Trust (TR)	TR03	Members in the virtual community I am in would not knowingly do anything to disrupt the conversation	Chiu et al. (2006: 1879).	0.89
Trust (TR)	TR04	Members in the virtual community I am in behave in a consistent manner.	Chiu et al. (2006: 1879).	0.89
Trust (TR)	TR05	Members in the virtual community I am in are truthful in dealing with one another.	Chiu et al. (2006: 1879).	0.89

1.1.2. Identification

Creating new knowledge depends on tapping tacit knowledge which could be achieved through personal commitment and sense of identity of the employees with their organisation (Nonaka 1991). Wenger (2000) considers knowledge sharing as a part of belonging and he argues that identity of an individual is shaped when participating in communities.

Table 2: The Measurement Scale of Identification

Construct	Item	Measure	Source	Reliability (composite reliability)
Identification (ID)	*Question*	*Please, answer the questions below regarding to "identification" issues.*		
Identification (ID)	ID01	I feel a sense of belonging towards the virtual community I am in .	Chiu et al. (2006: 1879).	0.90
Identification (ID)	ID02	I have the feeling of togetherness or closeness in the virtual community I am in .	Chiu et al. (2006: 1879).	0.90

| Identifica-tion (ID) | ID03 | I have a strong positive feeling toward the virtual community I am in . | Chiu et al. (2006: 1879). | 0.90 |
| Identifica-tion (ID) | ID04 | I am proud to be a mem-ber of the virtual com-munity I am in . | Chiu et al. (2006: 1879). | 0.90 |

1.1.3. Individual VCoP activities outside the organisation

Fostering knowledge sharing in VCoPs could only be achieved through active participations of its members in a computer-mediated community of practice (Ardichvili et al. 2003; Majewski 2012) which exists outside of their organisations. In fact, individuals who are interested in internet-based knowledge sharing platforms more likely to be active participants of VCoPs in their organisations. Nevertheless, even cutting-edge people, in other words who are interested in learning new technological improvements may not be willing to participate in knowledge sharing in their organisations, if their organisational commitment, sense of identity and trust is not high enough.

Table 3: The Measurement Scale of Individual VCoP Activities

Construct	Item	Measure	Source	Reliability (composite reliability)
Outside VCoP (OV)	Ques-tion	*Please, answer the questions below regarding to "forum usage outside the institu-tion" issues.*		
Outside VCoP (OV)	OV01	I respond the questions raised in online forums.	(Majewski 2012: 172; Ardichvili, Page and Wentling 2003)	0.89
Outside VCoP (OV)	OV02	I initially prefer to search for answers in online forums rather than face to face asking it to someone else.	(Majewski 2012: 172; Ardichvili, Page and Wentling 2003)	0.89

Outside VCoP (OV)	OV03	I am usually satisfied with the answers of my questions in online forums.	(Majewski 2012: 172; Ardichvili, Page and Wentling 2003)	0.89
Outside VCoP (OV)	OV04	Individuals usually respond the questions of others in the online forums which I use.	(Majewski 2012: 172; Ardichvili, Page and Wentling 2003)	0.89
Outside VCoP (OV)	OV05	I answer questions of others before I have any answers to my question(s) in online forums.	(Majewski 2012: 172; Ardichvili, Page and Wentling 2003)	0.89

1.1.4. Intention to share

Sharing intention of several individuals may increase year after year and consequently they may feel that it is time to give back to the community by sharing their experiences with new members (Ardichvili et al. 2003). According to a knowledge perspective knowledge is considered as a public good embedded in a community rather than in people as it is suggested in some other perspectives. This perspective views knowledge as a socially generated, embedded and exchanged within VCoPs (Lave and Wenger 1991). When members of a community consider knowledge as a public good, their intention to knowledge sharing will be increased due to moral values rather than personal expectations such as recognition and rewards (Wasko and Faraj 2000).

Table 4: The Measurement Scale of Intention to Share

Construct	Item	Measure	Source	Reliability (composite reliability)
Intention to share (IS)	*Question*	Please, answer the questions below regarding to "intention to share" issues.		

Intention to share (IS)	IS01	Do you prefer knowledge sharing when it will bring much gain to you?	(Majewski 2012:173)	0.88
Intention to share (IS)	IS02	Do you prefer knowledge sharing when it will bring much gain to your colleagues?	(Majewski 2012:173	0.88
Intention to share (IS)	IS03	I do not prefer to share my knowledge with my colleagues in the forum to keep my position or power.	(Ardichvili, Page and Wentling 2003; Lave and Wenger 1991; Wasko and Faraj 2000)	-
Intention to share (IS)	IS04	I share my knowledge related to my work with my colleagues verbally, even if it I am not obligated.	(Ardichvili, Page and Wentling 2003; Lave and Wenger 1991; Wasko and Faraj 2000)	-
Intention to share (IS)	IS05	I share my knowledge related to my work with my colleagues in written formats, even if it I am not obligated.	(Ardichvili, Page and Wentling 2003; Lave and Wenger 1991; Wasko and Faraj 2000)	-

1.1.5. Social network

Virtual communities of practice (VCoP), as a combination of a bunch of virtual networks, could arouse in exercising ba as the members could find opportunities to enhance their own knowledge through utilising the explicit knowledge embedded in there (Nonaka and Konno 1998). Members of VCoPs are likely to share their knowledge, when they think that their existing social ties will be both extended and strengthened with other members. Such a social capital of CoPs may also play a significant role to sustain and develop the interaction and knowledge sharing among the members (Hsu, Ju, Yen and Chang 2007). In fact, individuals must feel that being a part

of the social network of an online community somehow will create much more benefit for them than from being independent (Hasan and Pfaff 2006).

Table 5: The Measurement Scale of Social Network

Construct	Item	Measure	Source	Reliability (composite reliability)
Social network (SN)	*Question*	*Please, answer the questions below regarding to "social network" issues.*		
Social network (SN)	SN01	How many phone numbers have been recorded in your mobile phone?	(Hasan and Pfaff 2006; Hsu et al. 2007; Nonaka and Konno 1998)	-
Social network (SN)	SN02	How many phone numbers of your colleagues have been recorded in your mobile phone?	Chiu et al. (2006: 1879)	0.90
Social network (SN)	SN03	How many friends do you have in your social networks (facebook, twitter, linkedin v.b.), please write down to the highest one.	(Hasan and Pfaff 2006; Hsu et al. 2007; Nonaka and Konno 1998)	-
Social network (SN)	SN04	How many colleagues do you have in your social networks (facebook, twitter, linkedin v.b.), please write down to the highest one.	Chiu et al. (2006: 1879)	0.90
Social network (SN)	SN05	What is the number of units that you have been assigned in your organisation?	Hsu et al. (2007)	-

1.1.6. Rewarding

Active participation of members is vital for the success of VCoPs as it was mentioned earlier in this paper. Incentives or rewards or several ways of recognition could be used as tools to achieve active participation of members (Tremblay 2004). Reward mechanisms such as awarding of the best contributor may raise members' intention to share. Additionally, perceiving future rewards may also positively influence the willingness of individuals to contribute the knowledge repository of the community (Hsu et al. 2007).

While employers do little in terms of recognition (performance evaluation or promotion or the like), and this is a source of dissatisfaction, the participation seems to be recognized somewhat by colleagues or peers from the same professional category. This is positive for future collaboration in VCoPs (Tremblay 2004). According to Blau (1964) rewards can be either intrinsic (praise, respect) or extrinsic (money) (as cited in Chiu et al. 2006). In our questionnaire this difference will considered and questions will be generated according to intrinsic and extrinsic reward expectations.

Table 6: The Measurement Scale of Rewarding

Construct	Item	Measure	Source	Reliability (composite reliability)
Rewarding (RW)	*Question*	*Please, answer the questions below regarding to "Rewarding" issues.*		-
Rewarding (RW)	RW01	Reputation (rap) points should be given.	(Saint-Onge and Wallace 2003)	-
Rewarding (RW)	RW02	The most liked sharing should be given non-monetary rewards.	(Saint-Onge and Wallace 2003)	-
Rewarding (RW)	RW03	Non-monetary rewards should be given.	(Saint-Onge and Wallace 2003)	III. Control variable
Rewarding (RW)	RW04	Sharing should be used in the individual performance system.	(Saint-Onge and Wallace 2003)	-

Rewarding (RW)	RW05	There should not be any rewards regarding to knowledge sharing in forum.	(Chiu et al. 2006; Hsu et al. 2007; Saint-Onge and Wallace 2003; Tremblay 2004)	III. Control variable

1.2. Measurement Scales of Organisational Factors

1.2.1. Norm of reciprocity

The Social Exchange Theory suggests that members of VCoPs expect mutual reciprocity in order to justify their costs in terms of time and effort spent during knowledge sharing activities. Several researches indicated that knowledge sharing in online platforms is strongly influenced by sense of reciprocity (Chiu et al. 2006).

Table 7: The Measurement Scale of Norm of Reciprocity

Construct	Item	Measure	Source	Reliability (composite reliability)
Norm of reciprocity (NR)	*Question*	*Please, answer the questions below regarding to "sense of community" issues.*		
Norm of reciprocity (NR)	SC01	I know that other members in the virtual community I am in help me, so it's only fair to help other members.	Chiu et al. (2006: 1879)	0.82
Norm of reciprocity (NR)	SC02	I believe that members in the virtual community I am in would help me if I need it.	Chiu et al. (2006: 1879)	0.82

1.2.2. Technology

Technology is an essential factor for the successful knowledge sharing in virtual communities of practice, i.e. "an active participation of a substantial part (ideally, all) of its members" (Ardichvili et al. 2003: 65-66). Without cur-

rent ICTs we can only talk about the activities of CoPs such as face to face meetings, since the communication form of VCoPs requires the use of ICTs such as emails and voice or virtual conferences (Majewski and Usoro 2011). Therefore, design of technology is a further factor that may have an impact on knowledge sharing in terms of quality and quantity among the members of VCoPs in organisations. More precisely, the required technology for virtual platforms should contain several features such as user friendly interfaces, convenient and integrated access, self service mindset, enable members to create personal pages, provide additional gadgets and tools such as who is online, calendar and availability of third party applications, and ability to upload/download information in various formats such as pdf, png, etc. (Saint-Onge and Wallace 2003). Most of the mentioned issues are covered in our questionnaire.

Table 8: The Measurement Scale of Technology

Construct	Item	Measure	Source	Reliability (composite reliability)
Technology (TE)	*Question*	*Please, answer the questions below regarding to "technology" issues.*		
Technology (TE)	TE01	External access to forum necessary.	(Ardichvili et al. 2003: 65-66; Majewski and Usoro 2011; Saint-Onge and Wallace 2003)	-
Technology (TE)	TE02	Forum need to be reached via web 2.0 tools.	(Ardichvili et al. 2003: 65-66; Majewski and Usoro 2011; Saint-Onge and Wallace 2003)	-
Technology (TE)	TE03	Online users should be displayed.	(Ardichvili et al. 2003: 65-66; Majewski and Usoro 2011; Saint-Onge and Wallace 2003)	-

Technology (TE)	TE04	e-mail alerts necessary when there is a new message.	(Ardichvili et al. 2003: 65-66; Majewski and Usoro 2011; Saint-Onge and Wallace 2003)	-
Technology (TE)	TE05	Ad-hoc messaging necessary	(Ardichvili et al. 2003: 65-66; Majewski and Usoro 2011; Saint-Onge and Wallace 2003)	-
Technology (TE)	TE06	Employees' unit and titles need to change automatically.	(Ardichvili et al. 2003: 65-66; Majewski and Usoro 2011; Saint-Onge and Wallace 2003)	-
Technology (TE)	TE07	Search feature required in forum.	(Ardichvili et al. 2003: 65-66; Majewski and Usoro 2011; Saint-Onge and Wallace 2003)	-

1.2.3. Knowledge sharing culture

Kogut and Zander (1992) considers organisations as a repository of skills and abilities. These skills and abilities are determined by the social knowledge embedded in the relations of organisational members. These relations are also shaped by "organizing principles" located at the organisational level. Saint-Onge and Wallace (2003) categorised organisational level by five capability levels which are strategy, system, structure, leadership, culture.

The most effective connection between organisational level of capabilities and individual level of capabilities is established through interaction between mindsets and organisational culture. In fact, organisational culture is a reflection of collective individual mindsets. An individual may have certain capabilities which may be quite beneficial for his or her organisation unless the individual has some doubts about the conformity of his or her mindset and the organisational culture. Such uncertainties, consequently, may lead the individual not to align his competencies with the goals and ob-

jectives of his organisation. Therefore, knowledge sharing culture somehow need to encourage individual members to generate productive inquiries through freely ask questions and provide freely access relevant information in order to eliminate the mentioned uncertainties appears in the individuals' mindsets. Knowledge sharing culture of organisations may foster knowledge sharing if the employees have two aspects which are "need to know" and "need to share" (Saint-Onge and Wallace 2003).

Table 9: The Measurement Scale of Knowledge Sharing Culture

Construct	Item	Measure	Source	Reliability (composite reliability)
Knowledge sharing culture (KSC)	*Question*	*Please, answer the questions below regarding to "knowledge sharing culture" issues.*		
Knowledge sharing culture (KSC)	KSC01	Employees do not prefer share their knowledge due to the individual competition among them.	(Kogut and Zander 1992; Saint-Onge and Wallace 2003;Wenger 2000)	I.Control variable
Knowledge sharing culture (KSC)	KSC02	Employees usually do not share their work experiences.	(Kogut and Zander 1992; Saint-Onge and Wallace 2003;Wenger 2000)	-
Knowledge sharing culture (KSC)	KSC03	Employees do not share their experiences in written format.	(Kogut and Zander 1992; Saint-Onge and Wallace 2003;Wenger 2000)	-
Knowledge sharing culture (KSC)	KSC04	Employees do not share their experiences verbally.	(Kogut and Zander 1992; Saint-Onge and Wallace 2003;Wenger 2000)	-

Knowledge sharing culture (KSC)	KSC05	Employees do not share knowledge to keep their positions.	(Kogut and Zander 1992; Saint-Onge and Wallace 2003;Wenger 2000)	I.Control variable

1.2.4. Knowledge sharing space

Nonaka and Konno (1998) mentioned the term of "ba" which means 'space' in Japanese language. More specifically the authors define the ba as "shared space for emerging relationships" and this space could be in a variety of forms as follows, physical form such as office, virtual form such as e-mail or mental form such as idea. In fact, CoPs provide a place to its members to generate solutions for problems faced by the members through creating new ideas by exchanging existing ideas of their members (Nonaka 1994). However, Chiu et al. (2006: 1874) argued that "people who come to a virtual community are not just seeking information or knowledge to solve problems but they also treat it as a place to meet other people, to seek support, friendship and a sense of belonging". To create such an environment where individual employees across the organisation are enabled to be proactive and to take self-initiative may bring success to the organisation. Mentality of dependency creates an enormous barrier to create a collaborative working environment (Saint-Onge and Wallace 2003).

Table 10: The Measurement Scale of Knowledge Sharing Space

Construct	Item	Measure	Source	Reliability (composite reliability)
Knowledge sharing space (BA)	*Question*	*Please, answer the questions below regarding to "knowledge sharing space (BA)" issues.*		
Knowledge sharing space (BA)	BA01	Enough physical communication spaces (canteens, sport rooms)		-

Knowledge sharing space (BA)	BA02	Enough virtual spaces (forums, e-mails, chat, video conference) to communicate with the colleagues		-
Knowledge sharing space (BA)	BA03	Easy to reach organisational documents in forum.	(Chiu et al. 2006; Nonaka 1994; Nonaka and Konno 1998; Saint-Onge and Wallace 2003)	-
Knowledge sharing space (BA)	BA04	Most of the employees are not aware of the ongoing significant projects?	(Chiu et al. 2006; Nonaka 1994; Nonaka and Konno 1998; Saint-Onge and Wallace 2003)	II. Control variable
Knowledge sharing space (BA)	BA05	A transparent knowledge sharing space will be considered as a favourable by the top management.	(Chiu et al. 2006; Nonaka 1994; Nonaka and Konno 1998; Saint-Onge and Wallace 2003)	-

1.2.5. Role of leading

While many other organisational factors such as technology, norm of reciprocity, knowledge sharing culture and knowledge sharing space are important, absence of some of these factors make the leading role even more crucial (Tremblay 2004). The animation role is significant in a virtual community of practice where knowledge exchange is relying totally on electronic exchanges. In the cases studied, all data and information collected indicates that the role of the animator was crucial in the success of the community (Saint-Onge and Wallace 2003).

In fact, a full time animator could let individuals know that their personal data is secure in this place. Additionally a full time animator could also ensure more active participation through supporting members to interact with each other and to exchange ideas in the community (Hsu et al. 2007; Saint-Onge and Wallace 2003). For instance, in order to keep conversations alive in VCoPs, animators could implement alert systems to track the past

conversations and use intermediary people to post comments like "up-to-date" for current significant issues (Saint-Onge and Wallace 2003).

Table 11: The Measurement Scale of Role of Leading

Construct	Item	Measure	Source	Reliability (composite reliability)
Role of leading (RL)	*Question*	*Please, answer the questions below regarding to "role of leading forum" issues.*		
Role of leading (RL)	RL01	All shared content need to be approved by unit governors.	(Hsu et al. 2007; Saint-Onge and Wallace 2003; Tremblay 2004)	-
Role of leading (RL)	RL02	Forum messages need to be approved by moderator.	(Hsu et al. 2007; Saint-Onge and Wallace 2003; Tremblay 2004)	-
Role of leading (RL)	RL03	Forum topics need to be approved by moderator.	(Hsu et al. 2007; Saint-Onge and Wallace 2003; Tremblay 2004)	-
Role of leading (RL)	RL04	Several contents should be created before launching a forum to provide example to users by forum moderators.	Tremblay (2004: 12)	-
Role of leading (RL)	RL05	Forum moderators should send several messages to keep significant forum topics alive.	Tremblay (2004: 12)	-
Role of leading (RL)	RL06	Help desk must be organised before launching the forum.	Tremblay (2004: 12)	-

1.2.6. Organizational communication

Information and communication (ICTs) are required for capturing, storing and distributing information easily and quickly. However, IT has its own limits on information interpretation. Successful organisations in terms of obtaining long term benefits from knowledge management are those which have achieved to manage their social relations (Bhatt 2001) through establishing an organisational communication culture. Hierarchical communication channels in online knowledge sharing platforms flatten organisational hierarchy. In organisations where knowledge is considered as a source of power, then senior executives may be reluctant to share this power with their subordinates (Hasan and Pfaff 2006; Wenger, 2000).

Table 12: The Measurement Scale of Organisational Communication

Construct	Item	Measure	Source	Reliability (composite reliability)
Organizational communication (OC)	*Question*	*Please, answer the questions below regarding to "Organisational communication" issues.*		
Organizational communication (OC)	OC01	I usually learn institutional issues from my governors.	(Ardichvili, Page and Wentling 2003; Chen,2010; Saint-Onge and Wallace 2003)	-
Organizational communication (OC)	OC02	I usually learn institutional issues from my friends.	(Ardichvili, Page and Wentling 2003; Chen,2010; Saint-Onge and Wallace 2003)	-

Organi-zational commu-nication (OC)	OC03	I usually learn institutional issues after they fin-ished.	(Ardichvili, Page and Wentling 2003; Chen,2010; Saint-Onge and Wallace 2003)	-
Organi-zational commu-nication (OC)	OC04	Internal e-mail announcements categories are suf-ficient.	(Bhatt 2001)	-
Organi-zational commu-nication (OC)	OC05	Significant proj-ects announced officially.	(Bhatt 2001)	II. Control variable
Organi-zational commu-nication (OC)	OC06	There are effec-tive published announcements such as organisa-tional newspaper or journal.	(Bhatt 2001)	-
Organi-zational commu-nication (OC)	OC07	Frontline manag-ers transfer em-ployees' requests completely to middle managers.	(Hasan and Pfaff 2006)	-
Organi-zational commu-nication (OC)	OC08	Middle managers transfer employ-ees' request com-pletely to the top managers.	(Hasan and Pfaff 2006)	-
Organi-zational commu-nication (OC)	OC09	Managers take advantage of the views of the tech-nical employees as much as possible.	(Bhatt 2001; Hasan and Pfaff 2006)	-

Organizational communication (OC)	OC10	Employees do not hesitate to as for permission to speak in organisational meetings	(Bhatt 2001; Hasan and Pfaff 2006)	-
Organizational communication (OC)	OC11	Employees freely admit their views towards their governors.	(Bhatt 2001; Hasan and Pfaff 2006)	-
Organizational communication (OC)	OC12	Most of the participants are given to the floor in the meetings.	(Bhatt 2001; Hasan and Pfaff 2006)	-
Organizational communication (OC)	OC13	Time limits do not exceed in the organisational meetings.	(Bhatt 2001; Hasan and Pfaff 2006)	-
Organizational communication (OC)	OC14	Managers usually stick to organisational meeting agenda.	(Bhatt 2001; Hasan and Pfaff 2006)	-
Organizational communication (OC)	OC15	Official announcements made by the units should be provided through unit's spaces in forum.	(Bhatt 2001; Hasan and Pfaff 2006)	-

1.2.7. Organisational support

Organisational support is often considered as one of the essential factors such as technology to implement and maintain virtual communities of practice. Organisation may support knowledge sharing activities in virtual com-

munities through creating a suitable environment to participate debates. For instance, informing individuals about the aims and objectives of the forum and displaying most recent and most popular topics on the main page may take the attention of the members hence they are more likely to make new contributions to those topics (Saint-Onge and Wallace 2003). Moreover, individuals may be informed about the launching of a new online platform and may also be educated about how to use that platform (Tremblay 2004).

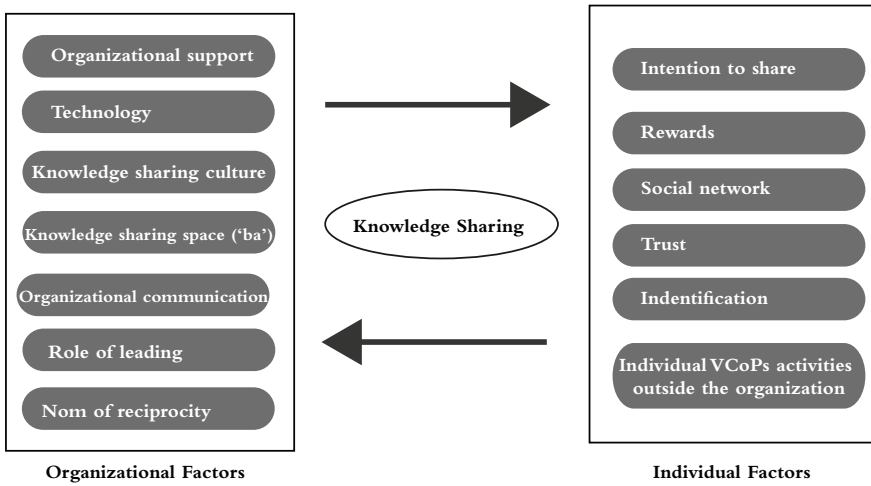**Table 13: The Measurement Scale of Organisational Support**

Construct	Item	Measure	Reliability (composite reliability)	
Organisational Support (OS)	*Question*	*Please, answer the questions regarding to "Organisational support" issues.*		
Organisational Support (OS)	OS01	Official announcements were released for launching forum.	Tremblay (2004: 13)	-
Organisational Support (OS)	OS02	My governors have informed me about forum.	Tremblay (2004: 13)	-
Organisational Support (OS)	OS03	Aims and objectives of the forum were shared with employees.	Saint-Onge and Wallace (2003)	-
Organisational Support (OS)	OS04	Required training was given to employees to use forum.	Tremblay (2004)	-

1.3. The Conceptual Model

The foregoing constructs were used to develop a conceptual model (Figure 2.) that embraces a variety of factors affecting knowledge sharing of

participants of virtual communities of practice (VCoPs). The theoretical framework in the figure 2, illustrates the factors possibly influencing knowledge sharing in VCoPs. As it could be seen from the figure, the factors seem to fit in the framework under the groups of individual and organisational factors.

Figure 2. The theoretical framework to evaluate knowledge management in online platforms

Organizational support

Technology

Knowledge sharing culture

Knowledge sharing space ('ba')

Organizational communication

Role of leading

Nom of reciprocity

Organizational Factors

Knowledge Sharing

Intention to share

Rewards

Social network

Trust

Indentification

Individual VCoPs activities outside the organization

Individual Factors

2. Discussions and Future Researches

This research has left open several directions for future work. First of all, initially pre-tests of the questionnaire need to be completed in order to eliminate possible biased answers. Apart from that, the questionnaire could be administered in any organisations which already have forum systems and aim to improve it. The questionnaire could also be conducted in organisations which aim to identify whether or not an online knowledge sharing platform would be successful due to the organisational or the individual factors.

Furthermore, establishing organizational readiness for change in terms of successful online knowledge sharing may take a long period of time due to the organisational factors such as organisational culture, organisational communication, organisational support and knowledge sharing space. The-

refore, organisations who aim to transform their knowledge sharing culture into more contemporary virtual platforms such as forums, wikis and video conference systems could focus on individual readiness rather than organizational readiness. In this regard, individual factors identified in this study may aid those organisations. For instance, a group of organisational members who have strong social networks, high intention to share knowledge, trust and identification and are already familiar with such virtual platforms outside the organisation could be identified as members of a virtual communities of practice (VCoP). Afterwards, active participations of the members of VCoP in online knowledge sharing is likely to encourage the others in the organisations to join those VCoPs with the purpose of extending and strengthening their existing social ties. Consequently, VCoPs may to sustain and develop the interaction and knowledge sharing among the members. Consequently, even though organisational readiness could not be established for successful online knowledge sharing, individual members could create a suitable virtual environment in their organisations to share knowledge.

Apart from those, after data collection process, factor analysis could be implemented to reduce and/or reclassify the variables. Furthermore, predicted factor structures of the factor analysis could be performed in confirmatory factor analysis (CFA) in order to identify which variables will most likely load onto each factor. In other words, it may provide a better understanding about the reasons of causality of knowledge sharing. Moreover survey data analysis could be performed through LISREL or AMOS which are statistical software packages used in structural equation modelling in order to provide an explanation about cross relations between the independent variables in the models.

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