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Chun-Ming Chang

Chiahui Yen

Hsiang-Lan Cheng

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# TRUST-BUILDING MECHANISMS AND KNOWLEDGE SHARING IN VIRTUAL COMMUNITIES

Chun-Ming Chang<sup>1</sup>, Chia-Hui Yen<sup>2</sup> and Hsiang-Lan Cheng<sup>3</sup>

<sup>1</sup> Department of Tourism Information, Aletheia University, Taiwan

<sup>2</sup> Department and Graduate Program in International Business, Ming Chuan University, Taiwan

<sup>3</sup> National Kaohsiung First University of Science and Technology, Taiwan

<sup>1</sup>[cmchang@mail.au.edu.tw](mailto:cmchang@mail.au.edu.tw); <sup>2</sup>[chyen@mail.mcu.edu.tw](mailto:chyen@mail.mcu.edu.tw); <sup>3</sup>[purelady@ccms.nkfust.edu.tw](mailto:purelady@ccms.nkfust.edu.tw)

## Abstract

Although trust has received much attention in the virtual communities (VCs) literature, few studies have been conducted to examine how trust develops in VCs. Drawing from prior literature on trust and knowledge sharing, a research model for understanding the antecedents of trust and the role of trust in VCs is presented. Data was collected from 324 members of a technical virtual community to test the model. The results help in identifying how the factors fall into three trust-building mechanisms build trust in the context VCs. The study discusses the theoretical and managerial implications of this study and proposes several future research directions.

**Keywords:** Virtual Communities, Knowledge Sharing, Trust, Trust-Building Mechanisms

## Introduction

Supported by information technologies, virtual communities (VCs) provide an attractive place for individuals to exchange knowledge with others [40]. Previous literature suggests that success of VCs requires that their members be willing to share their knowledge with other members [8]. However, contributing knowledge in VCs seems difficult [47]. Some researchers argue that contributing knowledge to VCs could cause knowledge contributors to lose their benefits derived from knowledge [47]. Others posit that the rationale action for members in VCs is to use knowledge regardless of its provision [46]. In fact, more than 90% of members in VCs are regarded as lurkers—individuals who visit VCs on a regular basis but not posting frequently [41]. Thus, it is important to understand what encourages members to contribute their knowledge and makes VCs more vibrant [8][40].

Previous literature indicates that trust, an implicit set of beliefs that the other party will behave in a dependent manner and will not take advantage of the situation [14], plays an important

role in helping members overcome the problems regarding motivation to share knowledge [40]. The trust perspective has been increasingly adopted in recent study [8] [19] [40] [41], yet little research has been conducted to understand what promotes trust in VCs.

This study seeks to examine the factors leading to trust development and the importance of trust to knowledge sharing in the context of VCs. An empirical investigation is conducted using a research model of trust antecedents, trusting beliefs, knowledge sharing intention and actual knowledge sharing behavior. Seven antecedents of trust derived from three trust-building mechanisms (calculus-based mechanism, relationship-based mechanism and system-based mechanism) are assessed as well, including knowledge growth, perceived responsiveness, social interaction ties, shared vision, system quality, service quality and knowledge quality. The model is tested with data collected from members of a technical virtual community in Taiwan. The results of this study shed light upon the importance of trust-building mechanisms in the context of VCs. The findings may help both academics and practitioners gain insights into how to stimulate knowledge sharing in VCs.

## Theoretical Background

### The Importance of Trust in VCs

Recent advances in information and communication technologies have enabled many people to participate in VCs [4] [19]. In the VCs, people can discuss a common hobby and share personal experience and opinion with others [40]. People can get knowledge from and give knowledge to other people as well [40]. More specially, people come to VCs to find emotional support, instrumental aid and encouragement [41]. Building upon Ridings et al. [40] and Wasko and Faraj [47], we define VCs as the self-organizing and open activity systems in which a group of people with common interests and practices can communicate with others regularly in an organized way over the Internet through a common location

or mechanism.

Many researchers agree that a major factor motivating individuals to participate in VCs is to access knowledge [40] [46], indicating that knowledge is an important factor in the success of the VCs [41]. However, knowledge resides within members' mind [46] and people generally think their knowledge is valuable and important [19] [47]. Hoarding knowledge becomes a natural human tendency [10]. It is then importance to understand what drives knowledge sharing in VCs.

Following Ridings et al. [40], this study suggests that trust is an critical factor determining voluntary cooperation among strangers in VCs. Trust refers to "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" ([30], p. 712). Trust is also seen as a set of beliefs dealing with ability, integrity and benevolence [30] [40]. Trust, in essence, is an individual's subjective belief about other people will perform expected behaviors [38] and will not act opportunistically by taking advantage of the situation [38]. Trust has been seen as an important factor governing exchange relationship involving vulnerability and uncertainty [38].

It is well established that trust is crucial in social interactions [16] [19], especially in a cyber environment in which social cues are notably missing [16] [42] and when an organization does not have explicit norms to provide sufficient guarantees that others will behave as they are expected to [40]. One of the reasons that trust is so central is that it reduces social complexity by ruling out undesired, yet possible, future behavior of others and thus increase one's belief that expected benefits through interactions can be fulfilled [16]. In this study, we believe that trust is especially important in the case of VCs, because the interactions between members in VCs are carried out in cyberspaces and there are no workable norms to rule knowledge sharing behavior as well. Some researchers agree that trust is a key facilitator of collective action in VCs [40] [47].

Empirical evidence provided by past research has explained the central role of trust in VCs. For example, Chiu et al. [8] indicate that trust is associated with quality of knowledge sharing. Hsu et al. [19] find that trust will evolve over time and influences knowledge sharing positively. Ridings et al. [40] postulate that trust affects an individual's desire to share and access knowledge. The study of Ridings et al. [41] report that the trust is significantly linked to the motivation to participate in the conversation.

While numerous studies have provided

empirical evidence linking the relationship between trust and knowledge sharing, little study has been undertaken to explain what may facilitate trust. This study considers that it is important to understand what may build trust and how trust can be maintained [22] [40], because trust seems to be fragile in the virtual setting [21] [22]. Based on above arguments, this study aims to introduce trust-building mechanism to explore the antecedent factors of trust in the context of VCs.

### **Trust-Building Mechanisms in VCs**

Researchers have suggested that there are four mechanisms that can build trust, including calculation-based mechanism, process-based mechanism, characteristic-based mechanism and institution-based mechanism [1] [3] [13] [23]. The calculation-based mechanism stresses that trust is based on one's subjective assessment of the costs and benefits derived from creating and sustaining a relationship [3]. Trust will emerge when one believes that other party will perform action that is beneficial to him/her [43]. In the setting of VCs, Hsu et al. [19] suggest that decreased costs and increased benefits in time and knowledge build members' trust. Accordingly, calculation-based mechanism should arguably apply in the case of VCs.

Process-based mechanism posits that trust grows primarily over repeated interactions [1] [3]. The repeated interactions in turn increase understanding of what, why and when others do what they should do. This may provide a framework to predict other's future actions and help people build their trust [15]. The characteristic-based mechanism stresses that trust could be driven by the similarity between people [15] [27]. That is, trust is created because similarity enables people to create a feeling of shared ethical and moral habits that allows people to believe that others' behaviors are appropriate and ethically [13]. In fact, the arguments of process-based mechanism and characteristic-based mechanism are similar to the key assertion of social capital theory literature, which suggests that frequent social interaction and shared vision promote trust [45]. Some researchers have addressed the importance of social capital in VCs [8] [47]. Consequently, this study integrates the two trust-building mechanisms and proposes the term "relationship-based mechanism" to capture the link between social relations and trust.

The institution-based mechanism states that an institutional structures and norms within an organization provide a sense of security that may encourage one's confidence in other party's trustworthy behavior and goodwill [1] [4] [36]. Similarly, previous research indicates that institutional factors such as guarantees, safety nets,

reevaluation, and legal resource provide essential supports for trust development [43]. Some researchers, on the other hand, describe that trust in an organization may arise due to sound privacy and technological mechanisms [19] [39]. As noted above, VCs are cyberspaces supported by information technologies and there are not explicit regulations, external guarantors and legal laws to rule members' behavior [47]. In the study, we argue that trust in VCs may emerge because of technical infrastructure rather than norms. As such, we propose the term "system-base mechanism" to capture the subset of institution-based mechanism and suggest that members' trust may arise due to the adherence to the technical competence, system reliability, protective mechanism, and managerial policies and procedure. Such standpoint is in line with Ratnasingam [39].

### Research Model and Hypothesis

Figure 1 portrays the research model of this study. In the model, trust is positioned as mediated variables which are affected by factors belong to three types of trust-building mechanisms (calculus-based relationship-based mechanism, and system-based mechanism). Then trust is proposed to have positive impact on knowledge sharing intention, in turn, leads to an increase in actual knowledge sharing behavior (quantity of knowledge sharing and quality of knowledge sharing). Each construct and hypotheses are discussed in the rest of this section.

#### Knowledge Sharing Intention and Knowledge Sharing Behavior

The research done in the framework of TRA, TPB, and TAM has shown that behavioral intention is a strong predictor of actual behavior [18]. For instance, Hsu and Chiu [18] find that a user's behavioral intention to use e-service is a significant determinant of his/her actual use of e-service. Similarly, Wu and Chen [48] indicate that a user's WAP service use intention has positive influence on actual use of service. Therefore,

*H1a. Members' intention to share knowledge is positively associated with quantity of knowledge sharing.*

*H1b. Members' intention to share knowledge is positively associated with quality of knowledge sharing.*

#### Trust in VCs and Knowledge Sharing Intention

Trust is the one's belief that other party will not act opportunistically by taking advantage of situation [15] and will behave in dependable and social appropriate manner [38]. Trust has been recognized as a central aspect in interpersonal relationships

[14]. Some researchers indicate that people are more likely to help others they trust [5]. Others note that people are more willing to take part in joint activities such as knowledge sharing if trust exists in the environment they are in [40] [45]. Ridings et al. [40] have provided empirical evidence suggesting that trust has positive influence on one's desire to share knowledge. Therefore,

*H2. Members' trust in VCs is positively associated with their intention to share knowledge.*

#### Knowledge Growth and Trust in VCs

Past research suggests that members in VCs may increase their expertise by learning others' experience and skills [6] [46]. Knowledge growth is thus treated as the benefits of gaining expertise from participating VCs [6]. From the view of calculation mechanism, trust can be created when benefits arising from using knowledge shared by others. Moreover, perceived knowledge growth implies that members in VCs have the skill, expertise and willingness to contribute useful knowledge, thereby creating one's belief in others' credibility and benevolence. Based on above discussion, this study may reasonably assume that perceived knowledge growth may lead to the development of trust positively.

*H3. Member's perception of knowledge growth is positively associated with trust in VCs.*

#### Perceived Responsiveness and Trust in VCs

The existing of VCs depends on members' postings and responsiveness [40]. Generally, members often expect some type of response from others [40] [46]. The responsiveness from others has been viewed as a type of benefit motivating people to participate in VCs [40]. From the perspective of calculation-based mechanism, members can build their trust toward VCs when they receive responsiveness from others. Ridings et al. [40] suggest that trust will not develop if an individual posts a message and there are no responses [40]. Their study has provided empirical evidence to support the link between perceived responsiveness and trust as well. Therefore,

*H4 Perceived responsiveness is positively associated with trust in VCs.*

#### Social Interaction Ties and Trust in VCs

Prior literature states that trust is the product of repeated social interactions [40] [43] [45]. The assertion of social capital theory posits that ongoing social interactions strengthen network density and closure and thus promote trust [31]. Tsai and Ghoshal [45] further note that frequent interactions allow individuals to know one another and create a common opinion, thereby are more

likely to perceive others as trustworthy. Ridings et al. [40] address that repeated interactions allow individuals to perceive others' reliability and dependability that are need for trust development. Based on above arguments, social interaction ties are believed to have positive impact on trust development. The study of Tsai and Ghoshal [45] provided empirical evidence to support the relationship between social interaction ties and trust.

*H5 Members' social interaction ties are positively associated with trust in VCs.*

### Shared Vision and Trust in VCs

As noted by Tsai and Ghoshal [45], a shared vision embodies "the collective goals and aspiration of the members of an organization" (p. 467). The shared vision could be viewed as a bonding mechanism that may bring and keep members within an organization together [45]. In general, people with similar interests or attitudes may be more likely to build relationships with each other [29]. Trust will arise among individuals who think they share a common objective and value [24]. Gefen et al. [16] postulate that people may tend to believe and rely

on members of the group they identify and treat their behaviors in a favorable and acceptable manner. Empirical evidence supporting the link between a shared vision and trust has been provided by prior studies [16] [45].

*H6 Members' shared vision is positively associated with trust in VCs.*

### System Quality and Trust in VCs

System quality refers to the desired characteristics of information systems, such as reliability [11], ease of use, stability [11] [25], and security [11] [32]. Several studies have shown that the system quality determines the development of trust [9] [39]. For instance, McKnight et al. [33] suggest that using information systems could result in the perception of system quality, which in turn forms the trusting beliefs. Corbitt et al. [9] report that the characteristics of information systems influence trust significantly. Thus, it is reasonable to assume that system quality may affect members' trust in VCs. Therefore,

*H7. System quality is positively associated with trust in VCs.*

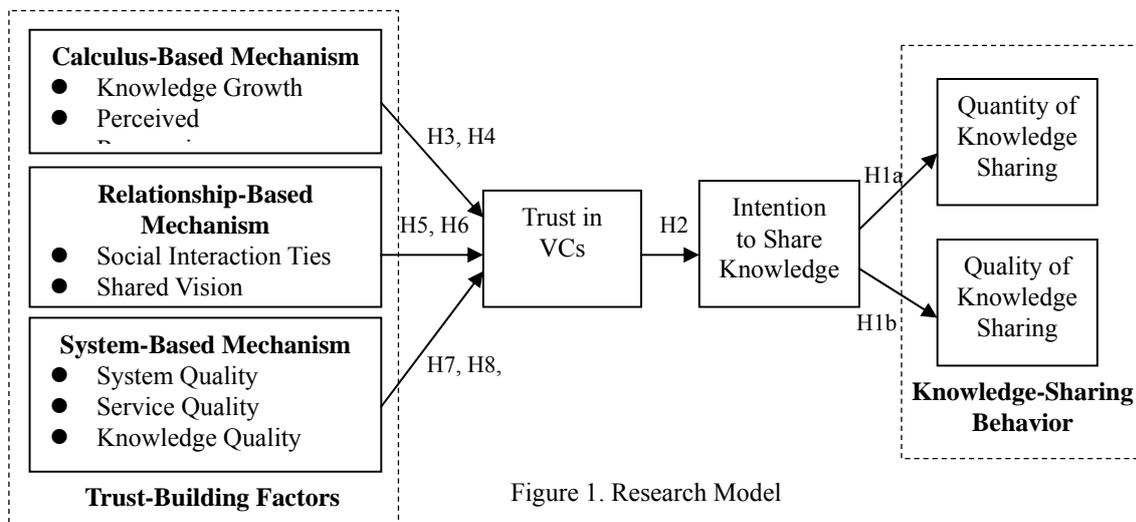


Figure 1. Research Model

### Service Quality and Trust in VCs

Service quality can be defined as a global judgment or attitude relating to the superiority of service [35]. Service quality is concerned with the overall service or support delivered by VCs [11]. Some researchers suggest that service quality could be assessed by several constructs such as responsiveness, reliability, empathy, and assurance [35]. In this study, the focus of service quality is assurance, indicating that VCs provide some regulation procedures or policies to make their members believe that VCs are in proper order and

safe [32]. Researchers suggest that when a situation feels safe, one may believe that this situation possesses some kind of trustworthy attributes [32]. Based on above discussion, this study may reasonably propose that service quality is related to trust. Therefore,

*H8. Service quality is positively associated with trust in VCs.*

### Knowledge Quality and Trust in VCs

Knowledge quality refers to quality of VCs' knowledge, such as relevance, timeless, comprehensibility and completeness [25]. Previous

literature indicates that if people perceive that knowledge quality is of high quality, they are more likely to have high trust beliefs as to Web site [26]. In contrast, if members feel suspicious about the knowledge quality, they may doubt the ability of VCs and tend to distrust the knowledge they are unfamiliar [28]. The study of Song and Zahedi [44] and Liao et al. [26] provide empirical evidence to support the relationship between knowledge quality and trusting beliefs. Therefore,

*H9. Knowledge quality is positively associated with trust in VCs.*

## Research Methodology

### Measurement development

Items in the questionnaire was developed by either adapting measures had been validated by prior literature, or by converting the definition of items developed based on the relevant theory and prior studies into questionnaire format [7]. A pretest of the questionnaire is performed using three experts in the IS area to assess logical consistencies, ease of understanding, question item sequence adequacy, and context fitness. Following the pretest, an online pilot test involving 20 master students who have been members of virtual communities was carried out to test the feasibility of this study. For all measures, a seven-point scale was used with anchors ranging from strongly disagree (1) to strongly agree (7). The questionnaire items are listed in Appendix A.

### Survey administration

The research model was tested using data collected from members of BlueShop. BlueShop is selected because it is a well-known community dedicated to sharing knowledge about database, programming, IT security, and operation system and many other domains in Taiwan [8]. In order to target respondents, a banner with a hyperlink connecting to the Web survey was posted on the homepage of BlueShop. Thirty randomly selected respondents were offered an incentive in the form of gift certificate amounting to NT\$ 500 to increase the response rate. The returned questionnaires were initially screened for usability and reliability; 324 responses were found to be complete and valid for data analysis.

## Data Analysis and Results

The model was tested using structural equation modeling (SEM) as implemented in LISREL. We began with assessing measurement model to ensure the reliability, convergent validity, and discriminant validity of the model. The reliability was examined using the composite reliability values. As shown in Table 1, the values of composite reliability ranged from 0.86 to 0.95, well

above the common acceptance level of 0.70 [17]. Previous literature stresses that convergent validity is adequate when factor loading higher than 0.7 and constructs have an average variance extracted (AVE) of at least 0.5 [12]. Table 1 also shows that all AVEs are greater than 0.5 and all items exhibited a factor loading higher than 0.7 on their respective constructs. The results suggest that convergent validity is acceptable. In addition, Table 2 shows that all the square roots of AVE values exceed the correlation between the construct and other constructs in the model, indicating the adequate discriminant validity of constructs in the model [12].

Once the measurement was adequate we tested the hypotheses by reviewing the parameters in the structural model. For models with good fit, the ratio of chi-square to the degree of freedom ( $\chi^2/d.f.$ ) should be less than 5. The non-normed fit index (NNFI), and comparative fit index (CFI), should exceed 0.9. The commonly accepted value of root mean square error of approximation (RMSEA) should not exceed 0.08 [8]. For the current structural model,  $\chi^2/d.f.$  is 2.51 ( $\chi^2=1202.69$ ,  $df=464$ ), NNFI is 0.97, CFI is 0.98, and RMSEA is 0.07. The results demonstrate the model fit indices are within accepted thresholds.

Figure 2 illustrates the estimated coefficients and their significance in the structural model. Most paths are significant, except for those between social interaction ties and trust in VCs ( $\beta=-0.01$ ,  $t=-0.12$ ), system quality and trust in VCs ( $\beta=-0.04$ ,  $t=-0.47$ ), and knowledge quality and trust in VCs ( $\beta=0.09$ ,  $t=1.09$ ), meaning that hypotheses 5, 7, and 9 are not supported. As expected, intention to share knowledge is significantly associated with quantity of knowledge sharing ( $\beta=0.48$ ,  $t=9.01$ ) and quality of knowledge sharing ( $\beta=0.60$ ,  $t=10.3$ ), supporting hypotheses 1a and 1b. Trust in VCs exhibits a strong effect on intention to share knowledge ( $\beta=0.68$ ,  $t=13.02$ ) so that hypothesis 2 is supported. Furthermore, knowledge growth and perceived responsiveness have significant effects on trust in VCs ( $\beta=0.16$ ,  $0.22$ ;  $t=2.77$ ;  $3.71$ , respectively). The results support hypotheses 3 and 4. Finally, as expected, trust in VCs is predicted by share vision and service quality ( $\beta=0.33$ ,  $0.29$ ;  $t=4.78$ ,  $2.94$ , respectively). Thus, hypotheses 6 and 8 are supported.

## Conclusions

In this study, we propose a theoretical model to investigate what factors may affect a members' trust toward VCs, which in turn influences their knowledge sharing behavior in the context of VC. Using data collected from 324 members of a technical virtual community, we empirically demonstrate that trust in VCs is significantly

related to knowledge sharing behavior. Trust in VCs, in turn, is affected by knowledge growth, perceived

Table 1 Summary of Measurement Scale

Construct	Factor Loading	Composite Reliability	Average Variance Extracted
1.Perceived Knowledge Growth (PKG)	PKG1=0.92 PKG2=0.97 PKG3=0.77	0.92	0.79
2.Perceived Responsiveness (POR)	POR1=0.83 POR2=0.88 POR3=0.86	0.89	0.74
3.Social Interaction Ties (SIT)	SIT1=0.86 SIT2=0.89 SIT3=0.84	0.90	0.75
4.Shared Vision (SV)	SV1=0.76 SV2=0.87 SV3=0.83	0.86	0.67
5.System Quality (SYSQ)	SYSQ1=0.72 SYSQ2=0.93	0.88	0.69
6.Service Quality (SVSQ)	SVSQ1=0.81 SVSQ2=0.85 SVSQ3=0.76	0.88	0.65
7. Knowledge Quality (KQ)	KQ1=0.76 KQ2=0.83 KQ3=0.89 KQ4=0.75	0.88	0.65
8.Trust in VCs (TVC)	TVC1=0.88 TVC2=0.87 TVC3=0.82	0.86	0.74
9.Intention to Share Knowledge (ISK)	SK1=0.97 SK2=0.94	0.95	0.91
10. Quantity of knowledge Sharing (KSN)	KSQN1=0.9 1 KSQN2=0.9 3 KSQN3=0.9 2	0.94	0.85
11. Quality of Knowledge Sharing (KSQA)	KSQA1=0.7 5 KSQA2=0.8 7 KSQA3=0.8 6 KSQA4=0.8 7	0.90	0.63

responsiveness, shared vision, and service quality. The results provide important implications for research and practice.

First, we have empirically expanded past studies on trust and VCs by proposing three trust-building mechanisms, such as calculus-based mechanism, relationship-based mechanism, and

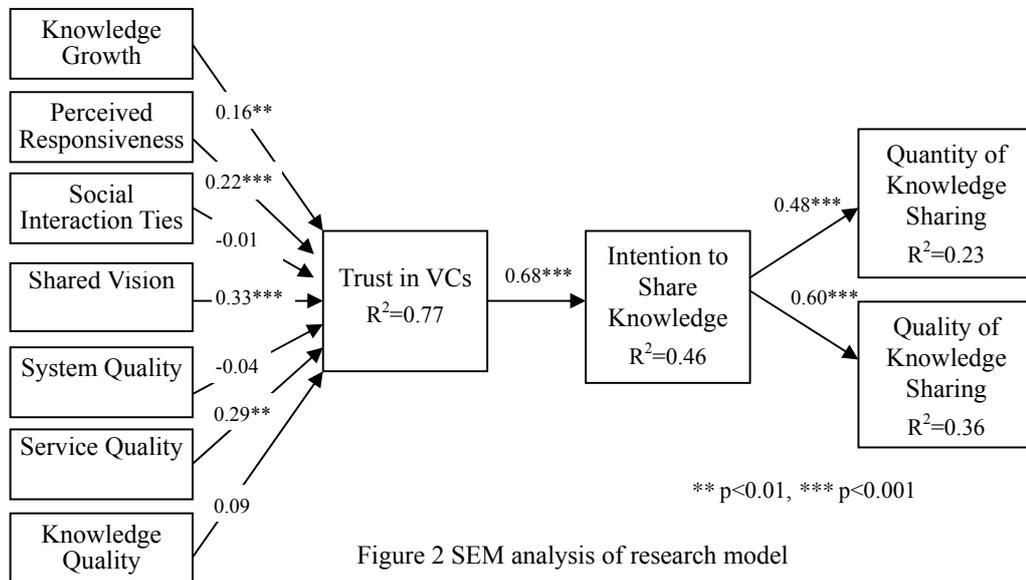
system-based mechanism, that can apply to the context of VCs. The three mechanisms are important because they may advance our understanding of what and how the factors derived from these mechanisms build trust, which in turn leads to better knowledge sharing behavior. Second, the results of this study indicate that the influence of shared vision on the formation of trust is stronger than factors fall into system-based mechanism. However, prior study [36] argues that institution-based trust is the most important determinant of trust in the environment without prior interaction history. As a result, further study should employ longitudinal view to verify that whether the importance of institution-base mechanism may decline when the relationship among people develops as time. Third, the results report that social interaction ties do not have significant effect on trust in VCs. The result seems to provide additional support for the argument that social capital may not develop in the virtual setting because of the lack of shared history, interdependence, and co-presence [47]. Finally, the results show that an individual's intrinsic benefit (i.e., knowledge growth) and extrinsic benefit (i.e., perceived responsiveness) may affect the establishment of trust in VCs. According to the theory of motivation crowding effect [34], extrinsic motivation often undermines the effect of intrinsic motivation [20]. Hence, further study is needed to examine the interaction effect between intrinsic and extrinsic benefits on trust formation.

Table 2 Correlations of Latent Variables

	1	2	3	4	5	6	7	8	9	10	11
1	<b>0.89</b>										
2	0.50	<b>0.86</b>									
3	0.23	0.40	<b>0.86</b>								
4	0.57	0.60	0.37	<b>0.82</b>							
5	0.37	0.36	0.24	0.36	<b>0.83</b>						
6	0.53	0.42	0.33	0.53	0.63	<b>0.81</b>					
7	0.62	0.48	0.36	0.56	0.61	0.69	<b>0.81</b>				
8	0.61	0.60	0.33	0.67	0.48	0.62	0.62	<b>0.86</b>			
9	0.62	0.51	0.40	0.56	0.27	0.51	0.50	0.56	<b>0.96</b>		
10	0.27	0.33	0.61	0.24	0.29	0.33	0.38	0.28	0.45	<b>0.97</b>	
11	0.54	0.45	0.35	0.47	0.42	0.57	0.59	0.59	0.54	0.49	<b>0.79</b>

Legend:

\*Diagonal elements (in bold) are the square root of the Average variance extracted.



This study also provides several interesting implications for practitioners who are interested in encouraging knowledge sharing within VCs. First, the results indicate that knowledge growth is a significant determinant of trust in VCs. This suggests that management of VCs should provide directions, such as yellow pages of knowledge possessors, to help members to locate people who possess knowledge they need [2]. Second, the results also report that perceived responsiveness has significant effect on trust in members of VCs. From the practice of human-machine interface design, management of VCs should improve VCs' online communication capability to provide some flexible and convenient tools for members to post and response questions easily. Third, the results also reveal that shared vision is positively associated with trust in members of VCs. Panteli and Sockalingam [37] posit that the interaction may enhance the development of shared values, goal and mutual understanding among people. Therefore, management of VCs should develop strategies or mechanisms that can facilitate the interaction among members. Finally, results of this study also report that service quality is an important motivator for nurturing members' trust. Thus, management of VCs should enhance members' perception of the benevolence of VCs. This may be done by disclosing information about the principles and guidelines of privacy protection and regulatory policies on the Web site.

Although the results of this study provide several interesting and useful findings, the resent

study still has some limitations. First, using members in a virtual community as subjects may limit the generalizability of the findings to other types of VCs, since knowledge sharing in global virtual communities may be different from the ones within organizations [8]. Further study is needed to examine the extent to which the findings of this study can be applicable in various types of VCs. Second, many researchers agree that trust is a dynamic phenomenon [19] [22] [37] that will change with time. Therefore, an idea research design is that researchers should employ longitudinal perspective to validate the influence of trust development on individuals' knowledge sharing intention and behavior and identify what factors may impact the trust development over time. Finally, since the focus of this study is active participants and this study did not investigate members who had ceased to participate in VCs, and members who do not log onto the VCs, the results of this study may also suffer from self-selection bias, similar to Chiu et al. [8] and Wasko and Faraj [47].

In conclusion, this study develops and tests a theoretical model to examine the antecedents of trust using three distinct trust-building mechanisms in VCs. The results show that knowledge growth, perceived responsiveness, shared vision service quality may determine the development of trust in VCs. By providing empirical evidence regarding the significant influence of these factors on trust building, this study believes that the findings of this study have contributed to the development of a

richer understanding of what factors may create members' trusting beliefs in VCs. Given the importance of knowledge sharing in VCs, this study also hopes that the findings may offer useful implications to VCs practitioners.

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### Appendix A. Questionnaire Items

#### Knowledge Growth (KG)

1. The members in the BlueShop community help me learn new things.
2. The members in the BlueShop community help me master new skills.
3. The members in the BlueShop community help me acquire innovative ideas.

#### Perceived Responsiveness (PR)

1. The members in the BlueShop community are very responsive to my posts.
2. I can always count on getting a lot of responses to my posts.
3. I can always count on getting responses to my posts fairly quickly.

#### Shared Vision (SV)

1. The members in the BlueShop share the vision of helping others solve their professional problems.
2. The members in the BlueShop share the same goal of learning from each other.
3. The members in the BlueShop think cooperation is important.

#### System Quality (SYSQ)

1. I feel that the BlueShop community is easy to use.
2. I feel that the BlueShop community is stable.

#### Service Quality (SVRQ)

1. The BlueShop community never modifies or losses the content members shared.
2. The BlueShop community has better procedures to make sure that members of this community will obey its policies and rules.
3. The BlueShop community does not use personal information for any purpose unless it has been authorized by members.

#### Knowledge Quality (KQ)

1. The BlueShop community provides up-to-date knowledge.
2. The BlueShop community provides sufficient knowledge.
3. The knowledge provided by BlueShop is meaningful and understandable.
4. The knowledge or information provided by BlueShop is important and helpful for my work.

#### Trust in VCs (TVC)

1. I feel that the BlueShop community is reliable.
2. I fell that the BlueShop community is likely to care for members' welfare.
3. I feel that the BlueShop community is competent to help members enhance their knowledge.

#### Intention to Share Knowledge (ISK)

1. I will come to the BlueShop community to share knowledge I know about a particular subject with other members.
2. I will come to the BlueShop community to share my skills and abilities with other members.

#### Quantity of Knowledge Sharing (KSNQ)

1. I frequently contribute my knowledge to other members in the BlueShop community.
2. I usually involve myself in discussions of various topics rather than specific topics in the BlueShop community.
3. I usually spend a lot of time conducting knowledge sharing activities in BlueShop community.

#### Quality of Knowledge Sharing (KSQA)

1. The knowledge shared by me is relevant to the topics.
2. The knowledge shared by me is easy to understand.
3. The knowledge shared by me is complete.
4. The knowledge shared by me is reliable.