The Influence of Social Identification and Persistent Communication

Activities on Interpersonal Trust in the Virtual Community

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#### Abstract

The current study investigated how interpersonal trust is developed in online communities, where most of individual identities are unknown or doubtful. To better understand and theorize the underlying mechanism, a survey was conducted integrating the literature on computer-mediated communication (CMC) and extending previous research on social identify model. The findings confirmed that integrity, benevolence, and openness are essential components in the concept of trustworthiness, which is predicted by social identification and persistency of communication activities in the virtual community.

Key words: Trust, Trustworthiness, CMC, Interactivity, Persistent Activities, Virtual Community

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# 온라인 공동체에서 사회적 정체성과 지속적인커뮤니케이션 활동이 구성원 간 신뢰에 미치는 영향에 관한연구

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## 요 약

본 연구는 온라인 공동체에서 구성원들 간에 신뢰가 어떻게 형성 발전되는지를 살펴보기 위한 연구이다. 신뢰형성에 주요한 요인에 대한 이론적 고찰을 통해 본 연구는 사회적정체성과 지속적인 커뮤니케이션 활동을 주요한 요인으로 설정하고 이들과 신뢰(Trust)에 이르기 위한 매개변인들인 신뢰성 (Trustworthiness) 요소-Integrity (규범공유성), 선의(Benevolence), 개방성(Openness)-와의 관계를 살펴보았다. 이들 관계를 실증적으로 밝히기 위해서 본 연구는 국내 주요 온라인 사이트의 커뮤니티 구성원을 대상으로 설문을 실시하였다. 그 결과, 사회적정체성과 지속적인 커뮤니케이션 이 신뢰성(Trustworthiness)에 유의미한 영향을 주고 있었으며 신뢰성의 세 가지 변인(Integrity, Benevolence, Openness) 등은 기존의 연구와 유사하게 신뢰에 주요한 요소들임이 밝혀졌다.

주제어: 신뢰, 신뢰성, 컴퓨터 매개커뮤니케이션, 상호작용, 지속적 상호작용, 온라인공동체

#### 1. Introduction

The Internet is already an influential part in many people's life today, and with its power of connecting one human being to another across geographical boundaries, virtual communities where an increasing number of people meet and interact have grown into a fairly new social phenomenon. Not only does the Internet serves as a medium for exchange of information, but it also offers a virtual space and a formless society where people interact and develop a sense of community [1]. Such virtual space has been referred to as virtual community [2][25][26], electronic community[27], and online community[12]. This community is knotted with unseen strings, forming groups of people from various cultures and social backgrounds.

Several characteristics of virtual community have been identified to support its viability. According to the research literature on computer-mediated communication (CMC), these characteristics include persistent interaction, identity. group various communicators, norms and netiquette, shared values, and a fixed border[18][23]. Meanwhile. some factors have been suggested to interfere the maintenance and development of virtual community in a complex manner, particularly anonymity and interactions. Anonymity increases uncertainty in the virtual world such that Internet users hold doubt toward the materials and the information they read online because the authors are unknown. On the other hand, anonymity may be beneficial as it allows liberal or contentious opinions to be expressed without restriction. Similarly, interactions in the virtual community can facilitate formation of group identification but may be harmful as well. Antisocial discourse and activities can take place in the virtual community, such as flaming, trolling, spamming, cyber-rape, and cyber-stalking.

complex and potentially deleterious The mechanism in the virtual community raises an important question: how online anonymity and interactions could be used to build cohesion and cooperation in virtual community? The current study is aimed to answer this question by exploring the formation mechanism of social trust in virtual community as a function of anonymity, persistency social identity. and in online interactions.

### 2. Literature Review

#### 2.1 Trust

The concept of trust has been studied in several disciplines with different perspectives. In general, studies on trust reflect three approaches: the personality theoretical perspective. the perspective, social socio-economic and the psychological perspective. First, the personality individual theoretical view focuses on characteristics pre-disposition. formed in orenvironment, to trust other people[16]. Second, the socio-economical view connects trust to reputation in a social organization or institution[5] and to opportunism among people in terms of transaction fee[15]. Trusting social institution or organization reflects stability in the society. Intra-organization or inter-organization can reduce transaction fee through trust because distrust among them might impose overwhelming deposit of money.

The social psychological perspective, adopted in

the present study, suggested that trust promotes cooperation, maintains stability, orders and fosters ethical expectations and social control, expresses and reinforces shared values among people[3]. In other words, trust is considered as formed through interaction, while there are separate definitions for perception of trust and trusting behaviors. Some argued that trustworthiness is an element enabling people to trust others and allowing for trust or trusting behavior, because trusting behavior may not be accomplished without conditions[6][29].

#### 2.2 Trustworthiness

Mayer, Davis, and Schoorman defined trustworthiness as perceived characteristics of the object (trustee), and such perception informs willingness and likelihood to take certain actions - trusting behavior in the face of uncertain situations [20].

In fact, trustworthiness has been defined and measured in ways. Earlier several scholars emphasized more on moral aspects of trustworthiness. For example, Hovland, Janis, and Kelley reported that credibility is influenced by the expertness and trustworthiness of the trustee[11]. In their work, trustworthiness was assessed indirectly by examining the motivation to lie so if a trustee obtained something by lying, he would be considered less trustworthy. Similarly. Rotter defined trustworthiness as perception of how others perform trustful acts, and he emphasized ethics and morals as measures of trustworthiness[28]. That is, ethical and moral people are perceived as trustworthy. Dasgupta also measured trustworthiness based on motivation and honesty[6].

Many other scholars examined trustworthiness

as a perception of people's characteristics. Three concepts that have been widely mentioned in literature as measurement for trustworthiness and used in the current study are: integrity, benevolence, and openness.

Integrity is the trustor's perception of the degree to which a trustee observes principles that the trustor thinks he or she can accept[4][17][20].

Benevolence is the perceived extent to which a trustee is believed to want to do good to the trustor, without any egocentric profit motive. It implies that a trustee has affection or intimacy for a trustor[13][20][30]. Benevolence is related to the recognition of positive orientation of a trustee to a trustor.

Openness is the perceived degree to which a person liberally communicates and expresses information or experiences[8]. It has been found to be influential for building interpersonal trust[4] and confirmed to be an element of the concept of trustworthiness[7][10][21].

The more trustworthiness of a trustee is perceived, the more trust or trusting behaviors will be, and the above variables serve good parameters for measuring trustworthiness. And since perceived trustworthiness of a trustee should be positively associated with trusting behavior, the present study poses the following hypotheses:

H1a: Perceived integrity will positively predict trusting behaviors.

H1b: Perceived benevolence will positively predict trusting behaviors.

H1c: Perceived openness will positively predict trusting behaviors.

Considering the context of virtual community, an extended research question that needs exploring is then what forces drive those perceptions of trustworthiness in online communication. Literature on computer-mediated communication offers good insights for answering the question.

Recent computer-mediated communication literature explanations how people interact and develop group identity online using the social identification/ deindividuation theory (SIDE)[14]. The SIDE theory first proposed two distinct processes of social and personal identification in virtual community: social identification refers to the process where people become to identify with certain groups, while personal identification refer to the process where people hold on to their own unique attributes and isolate themselves from others.

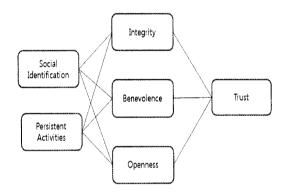
The theory further suggested that social identify is enhanced by deindividuation processes in online environments. The intra-group differences become less distinct in online environment where exist physical isolation and visual anonymity. The social identity reduces inter-group conflicts and the similarity between self and others, in turn, reinforces group identity and fosters a willingness to be amicable, friendly, or intimate toward the group members (Walther, 1997). Because social identity may positively influence people's perception of trustworthiness to other people, the present study proposes:

H2: Social identity will positively predict trustworthiness (integrity, benevolence, and openness) in virtual community.

Another important factor in understanding the formation of trustworthiness in online community is members' interaction through the Internet or their persistency in conducting communication activities in the virtual space. Just like frequent encountering in everyday life can increase trust

between people, persistent online communication activities may help to facilitate relational cues in hyperpersonal and social information processing, and reduce uncertainty and form increasingly developed impressions about other members[32]. Thus, the following hypothesis is proposed:

H3: Persistent activities in a virtual community will positively predict trustworthiness (integrity, benevolence, and openness). [Figure 1] presents the relations among variables described above.



[Figure 1] The Model of Forming Trust

#### Method

A survey was conducted among undergraduate students from several general education classes in one university in South Korea. One hundred twelve six respondents who were members in four popular portal sites in South Korea: Naver, Freechal, and Daum. These sites have formed virtual communities where a large volume of cyberspace is freely provided for various purposes: information exchange. communication, entertainment, making friends. The proportion of men and women in the sample was 60% and 40%, respectively. The majority of the sample werein their twenties (about 97%). Freshman composed about 9% of the sample, whereas the distribution of sophomores, juniors, and seniors was roughly equal (about 30% each).

#### 3.1 Measurement

The questionnaire measured trustworthiness, social identification, persistency of activities and trusting behaviors in the virtual community. To examine trustworthiness, the survey contained 11 questions on seven-point Likert scales of

agreement (Mayer, David, & Schoorman, 1995). Three factors were extracted from the factor analysis of the perception of the characteristics of the trustee (trustworthiness) (see < Table 1>). Cronbach's Alpha was calculated to verify the reliability of the items: the integrity index was .92, the benevolence index was .89, and the openness index was .70.

The survey measured social identification with the community by asking to what extent respondents agreed with the following four

<Table 1> Factor Analysis for Trustworthiness

Items	Factor I Integrity	Factor II Benevolence	Factor III Openness
I believe that the members in the Web site do not use profanity words.	.92		
I believe that the members in the Web site do not express vulgar language.	.91		
I believe that the members in the Web site do not send a slanderous email.	.87		
I believe that the members are not obstinately stuck to their own opinions.	.76		
I believe that the members in the Web site like me.		.88	
I believe that the members in the Web site like to hear my story.		.84	
I believe that the members in the Web site like to hear my concern.		.79	
I believe that the members in the Web site are honest and open.			.75
I believe that the members in the Web site like to share personal information.			.72
I believe that the members in the Web site like to share valuable information.			.67
I believe that the members in the Web site do not hurt me.			.61
Eigen value	3.41	2.49	2.20
% of Variance	31.05	22.63	20.00

statements, again using a 7-point Likert-type scale from 1 (not at all) to 7 (very much): "I feel unity for my community," "I feel my community has a specific character different from other communities." "T feel attachment to the community," and "I feel the community has a strong group inclination instead of an individual inclination." One factor was extracted from the factor analysis and Cronbach's Alpha for reliability of the items was .88.

Persistency of activities was assessed with three questions: "how long have you been a member in the community," "how long do you connect to the community in a single sitting," and "how frequently do you connect to the community?" Considering the length of membership in the community, less than 3 months was the most frequent response (about 51%), whereas more than 1 year was about 11%. In terms of connection frequency to the community, very often was the most frequent response (about 30%), and never was the least (about 7%). Considering the time spent connected in a single sitting, 21% responded with less than 10 minutes, and 37% reported more than 10 minutes and less than 20 minutes.

To measure trusting behaviors participants were asked to rate the following four statements on a 7-point scale of agreement: "I can talk about my private concerns to community members," "I can talk about important matters and problems with them even though I cannot see them and meet them off-line," "I can disclose my private information to community members even though I know that the information can be misused," "Whatever I talk about, the community members will try to understand instead of abusing and humiliating me"[20][29]. One factor was extracted

from the factor analysis and Cronbach's Alpha for reliability was .87. Correlation analysis and multiple linear regression analysis were performed in the data analysis.

#### 4. Results

First of all. social identification in the community significantly was found to be positively correlated with the three trustworthiness measurements: integrity (r= .25, p< .01), openness(r = .46, p< .01), and benevolence (r = .59, p< .01). Similarly, the time connecting to the virtual communication as a measurement of persistent online activities was also positively correlated with integrity (r = .17, p < .01), openness (r = .20, p <.01), and benevolence (r = .24, p < .01). The three trustworthiness measures then all hold positive relationship with trusting behaviors, with significant correlation coefficients (integrity, r = .19, p< .05 openness, r = .60, p< .001) benevolence, r =.63, p< .001).

For H1a, H1b, and H1c, multiple regression analysis was performed to test the relationships between trustworthiness measurements and trusting behaviors while controlling for other demographic variables (see <Table 2>). H1a asked the relationship between perceived integrity and trust, and the results showed that perceived integrity failed to be a positive predictor of trusting behaviors (r = -.17, p= n.s.). So H1a was not supported. H1b asked about the effect of perceived benevolence on trusting behaviors, and the hypothesis was supported (r = .47, p< .001). H1c proposed that perceived openness positively predicted trusting behaviors. This hypothesis was

also supported (r = .38, p<.001). The overall results confirmed that perceived characteristics of other members influence people's trusting behaviors in the

persistent activities and trustworthiness. This hypothesis was partially supported. The length of membership (in months) and connection time were

<Table 2> Regression Analysis between Trustworthiness & Trust

Independent Variable _		1	$\mathbb{L}$ $\mathbb{R}^2$	
		В	Beta	
Trustworthiness	Integrity	17	17	
	Benevolence	.54***	.47***	.51***
	Openness	.50***	.38***	

<sup>\*</sup>p <.05, \*\*p <.01, \*\*\*p <.001

<Table 3> Regression Analysis of Social Identification & Trustworthiness

Independent Variable _	Integrity		Benev	volence	Openness		
	В	Beta	В	Beta	В	Beta	
Social Identification	.25**	.25**	.57***	.59***	.33***	.46***	
$ m R^2$	.06**		.35**		.21**		

virtual community.

<Table 3> shows the regression analysis for H2, which asked about the effects of social identification with members in the virtual community on trustworthiness. The hypothesis was supported. Social identification was found to be a good predictor for integrity (r = .25, p< .01), benevolence (r = .59, p< .001), and openness (r = .46, p< .001).</p>

That is, community members who identified more with the online social groups were more likely to expect that other members will follow the norms, be amicable, and supply or disclose their public or private information.

<Table 4> shows the result of testing H3,
which proposed positive relationships between

not found to hold significant effect on the perception of trustworthiness, but connection frequency was found to influence perceived benevolence (r = .20, p < .01) and openness (r = .18, p < .05), in a positive direction.

#### Discussion

#### 5.1 Implications for Research

Overall, the study demonstrated online trust is a viable concept and that it could be forged in a situation of anonymity. The findings suggested that identification with an online group as well as frequent computer mediated communication

activities facilitate positive perceptions about other members in a virtual community, which in turn fosters beliefs in shared values and cooperation behaviors.

The previous conceptualizations of trust and

community than expectations of individual's observation of ethical principles are. This also indicates that the fear that some members may not obey the social norms may have been overcome by strong identification with and beliefs in the virtual

<table 4=""> Regression</table>	Analysis o	f Persistent	Activity 8	& Trustworthiness
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July what Valle		Integrity		Benevolence		Openness	
	Independent Variable	В	Beta	В	Beta	В	Beta
Persi	Joining Months	01	12	01	09	00	09
stent	Connection Frequency	.02	.01	.21**	.20**	.14*	.18*
Activ ities	Connection Time	00	02	00	11	.00.	.16
	$R^2$	.01		.04*		.03*	

trustworthiness generally hold in the virtual community because the results confirmed positive relationships between

trustworthiness and trusting behaviors. However, it is worth discussing why integrity measurement did not well predict trusting behaviors while benevolence and openness measurements did. Generally, integrity is considered important at an early stage of relational development and should have been established before benevolence and openness are formed among the members in the virtual community[20]. So it could be because perception of integrity was already formed when members initially connected to the community and thus no longer served as powerful predictor for trusting behavior at a later stage as in the present survey. Or, it may also be possible that perceptions of benevolence and openness are more essential to online trust than perception of integrity. That is, feelings of affection and intimacy, as well as liberal expression and information disclosure are much more meaningful in trusting others in the online community.

Findings on social identification confirmed that the more a member identifies with the virtual community, the more likely he/she will project positive perceptions of trustworthiness on other members. Such emotional attachment and deindividuation effects in the online communication process appeared to be extraordinarily instrumental in forging perceptions of trustworthiness and trusting behaviors on the Web.

Another important variable found to influence the perception of online trustworthiness communication activities related to the virtual social community. According to information processing theory, persistent activity refers to the temporal factors. There were three subsets of persistent activities in the study (i.e., length of membership, connection frequency, and connection time), and the findings showed that connection frequency was the only influential factor that predicted perception of trustworthiness. In other words, length of membership and duration of connection activity were much less important in predicting members' involvement, social identity or trust in the virtual community. At a close examination of the data, it was shown that there were some respondents who have joined the virtual community for a long period of time but rarely conducted activities. It was also indicated that there were some people who might connect to an online community and then leave it open while doing other things.

The positive effect of connection frequency shows the importance of frequent contact online in building trust. This finding is consistent with past arguments that frequent connection, such as day-to-day meetings, is the most effective way for relational development and close relationship [9][22][33]. Considering these, we may conclude that length of membership and duration of connection are less reliable tools for assessing beliefs in the value of membership and predicting perceptions of online trust.

It should also be noted that the relationship between connection frequency and social identification was statistically significant in a positive direction. It may suggest that higher connection frequency reinforces social identification, which may again increase frequency of connection to the virtual community, forming a cycle that works to make possible the process of developing trust and close relationships online.

#### 5.2 Applications

Besides the theoretical implications, the findings in the current study have two major practical implications. First, building trust in virtual community is possible and important. In particular, data showed that it is essential to create a sense of benevolence and openness in an online community. Thus, communication practitioners who design or manage virtual communities should carefully consider measures that can increase members' identification with the community, such as emphasizing the values of community in their mission statement and other messages, and utilizing Web features that allow members to interact and openly share thoughts.

Second, frequent site visits are also important. As the study showed that this online activity could greatly contribute to the perception of trust and sense of community, communication practitioners should consider strategies that encourage community members to return to visit the Web sites more often. Potential measures could be updating information frequently, providing current or real-time information, and applying programs that reward members for more participation in activities.

#### 5.3 Future Research

There were a few limitations with the current study, and future research can consider these aspects for further exploration. First of all, the collected data did not contain information pertaining to details and features of the communities participated by the respondents. Future studies may look at communities' features in conjunction with people's motivations to participate in a virtual community because different motivations can have impact on their online activities and social identification with the virtual community. Interested researchers can categorize varying communities and explore motivations of uses. Another constraint in

the current study is that the sample was limited to young college students in South Korea. Age, educational level, and even the cultural context and development stage of the technology need to be considered when interpreting our findings. Research questions in our study may be replicated and tested in other countries for comparisons; in addition, interested scholars can also try to incorporate culture-related or other contextual factors in understanding and modeling the concept of online trust.

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