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ABSTRACT

Social network service (SNS) with the Web 2.0 concept embedded involves using multimedia to enable social interaction and information sharing. The objective of this study is to explore the antecedents of habit in the context of social network services. Though the combination of media synchronization theory, social capital theory, and collaborative information exchange, we conducted and examined a model of SNS effects on the habit. In the research model, social interaction capital is proposed as one formative second-order construct driven by social network, share goal, and social trust, and information interaction capital also is proposed as another formative second-order construct driven by breath and quality of information exchange. It is hoped that platform managers can benefit from the insights and implement more effective management of SNS use.

Keywords

Social Network Service, Social Capital Theory, Collaborative Information Exchange, Media Synchronization Theory, Habit.

INTRODUCTION

The earliest social media started from the Bulletin Board System (BBS) in 1978, in which it offered pure text content; whereas the new-generation social media in the 90s, such as the SixDegrees.com in 1997 that supported identification of various personal files through media tools, allowing users to create personal, professional and emotional profiles. The later Social Network Sites（SNSs）such as Friendster (2002), MySpace (2003) and Facebook (2004), have become one of the mainstream on Internet today. Thus, users own more social experiences of non-face-to-face participation in group communication through the Internet, e-mail and the World Wide Web. In 2005, the concept of Web 2.0 application was proposed by O'Reilly, which is an interactive Internet-based platform. The online user-generated content is popular among the public and an increasing number of users are participated in content creation instead of just content consumption (Agichtein et al., 2008). SNSs are based on such Web 2.0 core concept that uses Internet technology to co-create value through large-scale user participation (McLean et al., 2007). Hence, the study argued that SNSs promote group experience and accumulation of knowledge through mutual communication and exchange as well as information exchange.

Kaplan and Haenlein (2010) defined SNSs, one kind of social media, as a group that is based on Internet application established by Web 2.0 concept and technology, allowing users to arbitrarily generate content and exchange information. Following the advancement of readily accessible technical supports, the forms of online content-sharing differs from the past in which the capability of media offering supporting data transmission and data processing will determine the final synchronization (Dennis et al., 2008). Currently, social media is ubiquitous and if someone do not participate in Facebook, Youtube, Second Life or other social media, he or she is not part of cyberspace anymore (Kaplan and Haenlein, 2010). Thus, the study suggests the necessity of understanding of influence of using network social media on social interaction and information interaction.

In terms of social interaction, social network and community is the core of social media. According to Carter (2005), the interpersonal relationship based on network expands to the existing relationship network and such network relationship differs from traditional interpersonal relationship, but is a broader and assimilated relationship to daily life. Mashable published a survey from the research institute, Oxygen Media/Lightspeed, in July, 2010, whereas the result showed that modern young women are increasingly relying on social media and 34% of female aged 18-34 check their Facebook as the first thing they do after getting up from the bed. Teoa, Chana, Weib and Zhang (2003) emphasized on the necessity of virtual social network to be built on a basis of mutual communication. Users are provided with emotional and data support and exchange to share the benefits brought by sharing and communication, through the interaction in communication channels.

Low-level information participants are limited to access, affecting the benefits coming from communication (Teoa et al. 2003). The existence of interaction affects the continuation of virtual network and affect the results of interpersonal relationship and information exchange, or even affect the interests derived. Thus, the study suggests that socialization and interaction are the core values to be emphasized by social network service (SNS).

On the other hand, information interaction is also one key in SNS. The users exchange information with each other through interpersonal interaction and message sharing. Knowledge is re-integrated and re-allocated in order to generate new and more complex knowledge. The creation of new knowledge is based on existing knowledge and knowledge could continuously circulate and accumulate in anytime, anywhere and between anyone (Shang et al., 2011). Previous studies also showed the virtual social network relies on information acquisition to continue sustainable development (Teoa et al., 2003). Thus, the study claims that social media gathers internet, Web2.0, user-generated content, and composite media platforms to offer users with more quickly and diverse content, meeting people's information demand, information exchange, and information integration. Social media is offered with richer resources to achieve the overall capital of the group.

With the changes in the environment, antecedents of the habit on social network services not only help us to understand how and why related habit of social network service arises, but also provide useful practical guidelines to assist manager in effecting habit development. The past studies about habit have mostly focused on the health sciences (Lindbladh and Lyttkens 2002; Orbell et al. 2001; Ronis et al. 1989) as well as food consumption (Saba et al. 2000). Nonetheless, SNS can be regarded as a new kind of service, and few studies have explored the antecedents of its habit. Rauyruen et al. (2009) point out that habit is important predictor of repeat purchase intention. Therefore, the study attempts to explore that frequently performed behaviors of SNS to become habitual over time.

Many prior studies about SNS have emphasized on the user participating attitudes (Cassidy, 2006; Ellison et al., 2007; Lampe et al., 2006; Stern and Taylor, 2007; Boyd and Ellison, 2008; Park et al., 2009), the legal issues (such as interpersonal surveillance and Internet privacy, etc.) (Tokunaga, 2010, Stutzman, 2006; Tufekci, 2008), and commercial advertising or marketing behaviors (Marks, 2009; Shih, 2009). However, few studies have discussed the collective intelligence and relationship capital generated from SNS. How do these value capitals stimulate the habit of network members? Based on the above, the study intends to further explore the influence of SNS on the habit between social network members. The main objective of the study is summarized in the following three points:

(1)   How does the use of social media influence social interaction capital

(2)   How does the use of social media influence information interaction capital

(3)   How do social and information interaction capitals influence the habit of social network services member

LITERATURE REVIEW AND RESEARCH MODEL

The study makes discussion following the effect of media synchronization theory, social capital theory, collaborative information exchange on the habit of SNS members.

SOCIAL NETWORK SERVICE (SNS)

Social Network Sites (SNSs) are one of the most popular SNS in recent years. According to the elaboration on the definition of SNSs by Boyd and Ellison (2008), they are referred to a type of website service that utilizes media tools (including blogs, message boards, email, video et al) through common interests, language, ethnicity, religions, nationality, political stance, and activities, in order to share information (Pempek et al., 2009), maintain existing interpersonal relationship (Ellison et al., 2007; Lampe et al., 2006) and extend establishment of new interpersonal relationship. Stern and Taylor (2007) conducted a survey on 400 students using Facebook. Most students have reviewed personal information of other affiliated persons (i.e. wall, photos and blogs) to obtain activities and information on others as a means to maintain each other's relationship.

However not only social interaction, former studies also illustrated the quality and quantity of information (Hersberger et al., 2007) and results of information interaction (Chiu et al., 2006) is an important key to develop and maintain a strong virtual social network. The creation of knowledge originates from individuals; and as for organization, no knowledge could exist with the absence of people (Nonaka and Nishiguchi, 2001). SNS exchanges through interpersonal interaction, whereas knowledge is re-integrated and re-allocated to promote new and more complex knowledge, which continuously circulate and accumulate at anytime, anyplace and between anyone (Shang et al., 2011).

The study intends to verify whether if the communication process through media synchronization theory and the five abilities provided by media could facilitate the accumulation of information interaction capital and the social interaction capital. The

media tool provided by SNSs (Facebook) is used as the example to more clearly categorize and understand the relationship of media tools in SNS in addition to the influence and roles played in information exchange.

MEDIA SYNCHRONIZATION THEORY

Dennis, Fuller and Valacich (2008) proposed two communication processes equipped by people in the interpersonal relationship and cognition: conveyance and convergence process. Individual may conduct conveyance and convergence communication process through two procedures information conveyance (including preparing for conveyance of information, medium media and media accepting information) and data processing (comprehension to the information and integration into a collectively cognition) . They considered that the media capabilities can implement communication synchronization. According to the allocation of media power, the media provides the supporting data different from the supporting data transmission, which eventually supports synchronization. Dennis et al. (2008) divided media capability into five types:

Transmission Velocity (MST)

Refers to widely recognized as quickly and immediate (i.e. response) and interaction between transmitter and receiver., Message quickly transmits between transmitter and receiver, implying the two are continuously communicated and exchanged through better coordination and faster feedback. Higher transmission velocity will support synchronization and facilities the coordinating behavior and key points sharing during individual cooperation.

Parallelism (MSP)

Parallelism refers to the concurrently transmitted quantity. Parallelism implies messages from multiple different transmitters, which message could be concurrently transmitted. For transmitter and receiver, allowing multiple messages to be transmitted and accepted concurrently can reduce time consumed for transmission order to frequency traffic, therefore enhancing communication efficiency.

Symbol Sets (MSS)

In fact, communication and language use symbols. Symbol sets could affect the overall message transmission and processing efficiency because some time must be spent conducting message coding and decoding. Sometimes the media prodders the use of specific sign sets to facilitate quickly and correct communication. The media provides symbol signs appropriate to the message, which will facilitate data transmission and data processing.

Rehearsability (MSRH)

Refers to the capability to rehearse slightly adjust message during the editing process before he message is sent out by the transmitter. Rehearsability facilitates the more precise processing of message for transmitter, therefore enhancing the comprehension level of receiver to the message.

Reprocessability (MSRP)

Refers to media capability to re-review and re-process upon receiving message and process of message, despite that communication has ended. The media provides storage and re-processing capability to allow users understand the past behaviors and in-interpret the message content. Hence, massive, complex and new massage content become relatively important. Reprocessability also helps message convergence into common comprehensible message and message processing.

Data transmission process is quite important for personal vie and experience sharing; nonetheless data convergence process plays a more important role in the gathering of personal data into a common concept (McGrath 1991; Kock 2004; Te'eni 2001; Tschan 1995; Dennis et al., 2008). The media is capable to shape user behavior through providing easier method for user exchange (Dennis and Reinicke , 2004); where media meeting user demand is more susceptible to adaptation by users (Dennis et al., 2008). SNS indeed provide the technology and platform for users to interact through these online or offline media tools, therefore to achieve communication and exchange with each other. Former studies showed that under the background of internet, media usage is a purpose-based choice to satisfy the psychological needs (i.e. information, convenience, entertainment, and sociality) (Katz et al., 1974; Ko et al., 2005; Y. Kim et al.2011). Some studies indicated that young people spend a lot of time on SNS mainly due to the adaptation of media. The use of media offers young people with important support in the development of social relationship (Roberts et al., 2005). The media contains a synergistic effect on SNSs. Media determines the richness of message processing and media richness facilitates the mutual exchange between the enterprises and within the organization (Daft and Lengel, 1986). Media richness refers to the capability of media in processing message. A good media richness can process the information from different sources of reference and supports

multiple-channel communication so the managerial staff could reconcile the differences between organizations and within (Dennis and Kinney, 1998). According to above, the study argued that media capability can assist Facebook users with more beneficial supports in the transmission of message and communication exchange.

Social Interaction Capital

Most studies of social capital were divided into three dimensions, namely the relationship aspect, cognitive aspect and structural aspect. Among those, several elements including internet connection, internet configuration, dedicated organization, trust, forms, obligations, recognition, common rules and language, common experience, and shared goals have been discussed (Coleman, 1988;Tsai and Ghoshal, 1998;Nahapiet and Ghoshal, 1998). According to the definition by Coleman (1988), he suggested that individuals do not exist alone but are interdependent for a specific purpose. The interaction between individual behaviors with others will lead to a social network, whereas social capital exists among the interaction of such interpersonal relationship (Okoli and Oh, 2007). Such social network relationship is an actual or potential resource accumulation, including the internet itself is a liquid assets on the internet (Nahapiet and Ghoshal, 1998). Hence, social networks can be regarded as interpersonal interaction between the virtual and realistic societies. People not only engage in emotional exchange through SNSs but also grow and accumulate gradually on these tangible and intangible assets in each transmission of message and receiving and processing message. Prior studies argue that all aspects of social capital will affect the knowledge sharing behavior for individuals in a virtual community (Chiu et al., 2006).

The study makes reference to concepts from prior studies (Nahapiet and Ghoshal, 1998; Chiu, Hsu, and Wang, 2006; Chow and Chan, 2008) and discusses the three aspects of social interaction capital: (1) Structural aspect. The study adopts the concept from social network to discuss the number of opportunities which social network offers to users so they could exchange ideas and share information. (2) Cognitive aspect. The study acquires the concept of common objective and discusses the common objectives to be implemented through cooperation and knowledge sharing. (3) Relationship aspect. The study adopts the concept of social trust and makes discussion on social trust being the critical factor of organization willing to share knowledge. The possession of trust will help users expect and be willing to share each other's information. The three aspects are defined in the follows:

Structural Aspect（Social Network, SN)

This concept involves society and network relationship, which relationship context defines people which the network connects with and helps members search for objects of assistance or cooperation (Nahapiet and Ghoshal, 1998; Putnam, 1995; Chow and Chan, 2008).

Cognitive Aspect（Shared Goals, SG)

This aspect refers to the common culture and objectives that increase mutual understanding of the members, increase coherence and form a group through resource sharing (Nahapiet and Ghoshal, 1998; Putnam, 1995; Chow and Chan, 2008).

Relationship Aspect（Social Trust, ST）

This aspect describes the trust level in mutual development of network affiliated persons (Nahapiet and Ghoshal, 1998; Putnam, 1995; Chow and Chan, 2008).

Former studies argue that there is positive relevance between social capital and the interpersonal interaction of social network participants (Ellison et al., 2006). Chow and Chan (2008) suggested that social network, shared goals and social trusts directly affect the attitudes and intention of knowledge sharing. Based on the above discourse, the study argued that social capital will accumulate following network interaction and hence the concepts of social network, shared goals and social trusts form the second-order factor of social interaction capital. To discuss how the use of network relationship types and social media affect the accumulation of social interaction capital and the related hypotheses are developed below:

H1: The use of social media types is positively associated with social interaction capital.

H1a: Transmission velocity of social media is positively associated with social interaction capital.

H1b: Parallelism of social media is positively associated with social interaction capital.

H1c: Symbol sets of social media are positively associated with social interaction capital.

H1d: Rehearsability of social media is positively associated with social interaction capital.

H1e: Reprocessability of social media is positively associated with social interaction capital.

Information Interaction Capital

Malhortra, Gosain, and El Sawy (2007) described the behavior of collaborative information exchange (CIE) is mainly constituted by three elements, including breath of information exchange, quality of information exchange, and privileged information exchange. The available researches suggest that information exchange could be measured using information quality and quantity (Chiu et al., 2006; Yong Lu, Dan Yang, 2011). The study adopts the argument made by Malhotra et al. (2007) to define collaborative information exchange: Breath of information exchange, includes relevant information exchange of business activities between enterprises and the partners of different fields on the supply chain; Quality of Information Exchange refers to the information exchange with timeliness, accuracy, relevance, and value between the enterprises and the partners on the supply chain. Social media is an internet-based application established on the concept and technology of Web2.0, a group that allows users to generate content and exchange information (Kaplan and Haenlein, 2010). The following information exchange formed upon the two concepts will be discussed as the main factors:

Breath of Information Exchange (IEB)

Generally refers to the richness and diversity of information content offered from SNS.

Quality of Information Exchange (IEQ)

Generally refers to the timeliness, integrity and properness of information content offered from SNS.

The study addresses the breath and quality of information exchange collectively as information interaction capital. Communication and information sharing are the most important key component in developing and maintaining a strong virtual social network (Hersberger et al., 2007). Web 2.0 offers a technology platform for users to jointly collaborate and establish content and application services (Kaplan and Haenlein, 2010). Social internet Services provide users with synchronizing or non-sync interaction through online or offline means to achieve information exchange on knowledge and experiences; whereas knowledge will be re-integrated, derived and created at any time and any place through incessant circulation and accumulation (Shang et al., 2011). Such mutual communication and exchange will assist in information exchange and content improvement, and hence the quality and quality of information will substantially affect the results of individual information exchange in social networks (Chiu et al., 2006). Lu and Yang (2011) also conducted a study which suggested the significant influence of social network on information quantity; whereas social trust and shared goals have positively significant influence on information quality. Park, Kee, and Valenzuela (2009) also suggested in their study that under population control, life satisfaction and social trust, information requirement has positive relationship with the citizens of Facebook network. Based on the above discussion, the study infers the use of social media type will assist the accumulation of information interaction capital to provide users with useful information, and enhance information breath and quality. How the concepts of information breath and information quality form the second-order factor for information interaction capital, it leads to our second hypothesis:

H2：The use of social media type is positively associated with information interaction capital.

H2a: Transmission velocity of social media is positively associated with information interaction capital.

H2b: Parallelism of social media is positively associated with information interaction capital.

H2c: Symbol sets of social media are positively associated with information interaction capital.

H2d: Rehearsability of social media is positively associated with information interaction capital.

H2e: Reprocessability of social media is positively associated with information interaction capital.

Habit

Prior studies related to habit mostly discussed the in social psychology (Bargh et al. 2001; Ouellette and Wood 1998; Triandis 1980; Verplanken and Aarts 1999); health sciences (Lindbladh and Lyttkens 2002; Orbell et al. 2001); food consumption (Saba et al. 2000), marketing/consumer behavior (Bargh 2002), and organizational behavior (Louis and Sutton 1991; March and Simon 1958).

Habits are commonly understood as "learned responses to some kind of stimulus."(Verplanken et al., 1997). Some scholars (Orbell et al., 2001; Aarts et al., 1998) strongly believe that the development of habits requires a certain amount of repetition or practice. A stable context promotes habit formation in that it only requires a minimum of the individual's attention in

reacting adequately to certain situations. Past research show the 45% activity that people do routine job at the same place every day. From the review of past habit literature, it point out evident that there are two primary antecedents to habit development including frequent repetition of behavior, relatively stable context.

Therefore, this study argued that SNS stress on the information exchange of experience between users, and the communication exchange of interpersonal relationship, to provide the environment for users to be in a stable context, and mutually interact and exchange. The social network, shared goals and social trust form the second-order factor of social interaction capital in attempt to discuss how the SNS on network interaction accumulate the value and thereby explores how social interaction capital affect the habit of users use SNS. This lead to our third hypothesis:

H3： Social interaction capital is positively associated with habit.

Tyre and Orlikowski (1994) suggested that "as user gained experience, they established stable routine, cognitive and habits for using the service." there is a positive correlation between the information and habit. The information that user is interested in can attract user using social network service frequency, such as the well-known game "Restaurant City" on Facebook. In sum of the foregoing discussions, we infer that a habit can be derived from a friendly social relationship and environment of information exchange. And the concept of breath of information and quality of information as the second-order factor forming information interaction capital, and thereby discusses how information interaction capital affects and supports the habit of SNS users. The study argues that the integration of a collective information interaction capital will contribute to the generation of habit. This lead to our fourth hypothesis:

H4： Information interaction capital is positively associated with habit.

Habit is hence generated under such influence of continue interaction. Social media has provided users with functions in contact and information sharing. The study intends to examine the media tools offered by social media based on media synchronization theory, to clearly categorize the role played by media tool in SNS and to discuss the influence of social interaction capital and information interaction capital through user interaction in social media. Thus using social network service will become a new kind of habit through the accumulation and impact on the relationship and information resources.

RESEARCH METHODOLOGY

Measurement Development

The study applies Facebook users in Taiwan as the main objects in discussion. Facebook was founded in the campus of Harvard University in 2004, a campus social network website for peers to develop international relationship. The network later extended to other school networks (Cassidy, 2006). It is clustered into a network (Ellison et al., 2006；Park et al., 2009) due to the availability of providing various needs (i.e. interests, political stance, information, social relation, peer pressure, and entertainment). Users may communicate and exchange with each other via online (synchronization) and offline (non-synchronization) (Ellison et al., 2006). TIME Magazine once forecasted that the total number of global registered members to Facebook will reach 1 billion people by 2012. Such scale of population is only second to the population of mainland China (1.34 billion) and India (1.2 billion); it can be practically treated as the world's third largest nation. Based on the above, the study takes Facebook as the more representative example of SNS.

The study conducted a pretest to evaluate the correctness and propriety of the terms and content of the questionnaire. Based on prior studies, we evaluated and modified the questionnaire and conducted a pilot test with 640 valid questionnaire obtained. These individuals were asked to fill in the questionnaires and give their opinions of the content of the questionnaire. After the pretest and pilot test, Cronbach's α exceeded 0.66 for all construct, and factor loadings of the items all exceeded 0.5, demonstrating acceptable reliability and validity of the questionnaire.

Measure	Items	Freq.	Percent	Measure	Items	Freq.	Percent
Age	< 15	1	0.156	Gender	Male	271	42.344
	15–19	31	4.844		Female	369	57.656
	20–29	506	79.063				
	30–39	93	14.531				
	40~	9	1.406				
Education	Secondary or High School	26	0.041	Job	Computer/ Engineering	84	13.125
	Undergraduate degree	426	0.666		Service	126	19.688
	Graduate degree	188	0.294		Military/Educator/ Official	77	12.031
					Student	293	45.781
					Others	60	9.375
Facebook experience (in years)	< 1	76	11.875	Hours of Facebook use per day	< 1	127	19.844
	1–2	264	41.25		1–2	239	37.344
	2–3	219	34.219		2–5	193	30.156
	3–5	70	10.938		5–8	51	7.969
	5~	11	1.719		8 ~	30	4.688

Table 1 Demographic Information of Respondents (N = 640)

Measurement Model

Second order constructs (i.e. social interaction capital) was approximated using the approach of repeated indicators (or repeated manifest variables) that observed variables for all the first order constructs(Chin et al., 2003). All items of the three dimensions (social network, shared goals, and social trust) were coded to represent dimensions that form social interaction capital. All items of the two dimensions (breath of information exchange and quality of information exchange) were coded to represent dimensions that form information interaction capital. PLS (partial least squares, SmartPLS version 2.0) provides the analysis of both a measurement model and a structural model. Chin suggests that the method of repeated manifest variables will cause the R-square for the second-order construct to end up as 1.0 (Chin et al., 2003).

Fornell and Larcker (1981) suggested that the convergent validity of the scales will be verified by using two criteria : (1) all indicator loadings should be significant and exceed 0.7 and (2) average variance extracted (AVE) by each construct should exceed the variance due to measurement error for that construct (i.e., AVE should exceed 0.50). Reliability was examined using the composite reliability values. Table 2 shows that all the values were above 0.7, satisfying the commonly acceptable level and all the AVEs (i.e., AVE should exceed 0.50) ranged from 0.66 to 0.81. Table 4 shows that all items exhibited a loading higher than 0.7 on their respective construct. Thus, satisfying both the conditions for convergent validity.

The following three tests will be used to test discriminant validity. First, an examination of cross-factor loadings (Table 4) indicates good discriminant validity (Chin, 1998). Second, the correlations among all constructs are all well below the 0.85 threshold. (Kline, 1998) Third, the square root of the AVE from the construct is much larger than the correlation shared between the construct and other constructs in the model (Table 3) (Fornell & Larcker, 1981). In this study, three conditions for discriminant validity were met.

	AVE	Composite Reliability	Item	Mean (STD)
Habit(HA)	0.811	0.928	3	5.329 (1.59)
Breath of Information Exchange(IEB)	0.734	0.892	3	4.906 (1.285)
Quality of Information Exchange(IEQ)	0.740	0.896	3	4.877 (1.284)
Paralleism(MSP)	0.790	0.918	3	5.555 (0.911)
Rehearsability(MSRH)	0.790	0.918	3	5.172 (1.086)
Reprocessability(MSRP)	0.773	0.911	3	5.300 (1.167)
Symbol Sets(MSS)	0.715	0.883	3	5.230 (1.129)
Transmission(MSTR)	0.814	0.929	3	5.580 (0.950)
Shared Goals(SG)	0.702	0.876	3	5.263 (0.963)
Social Network(SN)	0.667	0.857	3	5.049 (1.236)
Social Trust(ST)	0.783	0.915	3	4.648 (1.241)

Table 2 Descriptive Statistics of constructs

	HA	IEB	IEQ	MSP	MSRH	MSRP	MSS	MSTR	SG	SN	ST
HA	**0.901**										
IEB	0.448	**0.857**									
IEQ	0.591	0.518	**0.860**								
MSP	0.499	0.402	0.411	**0.889**							
MSRH	0.462	0.517	0.475	0.584	**0.889**						
MSRP	0.409	0.389	0.385	0.566	0.685	**0.879**					
MSS	0.399	0.415	0.375	0.640	0.596	0.490	**0.845**				
MSTR	0.460	0.391	0.455	0.681	0.523	0.503	0.568	**0.902**			
SG	0.406	0.449	0.466	0.482	0.464	0.434	0.407	0.552	**0.838**		
SN	0.612	0.556	0.543	0.483	0.513	0.427	0.441	0.511	0.525	**0.816**	
ST	0.410	0.458	0.494	0.344	0.386	0.329	0.323	0.378	0.601	0.552	**0.885**

Table 3 Correlation among Constructs and the Square Root of the AVE

	HA	IEB	IEQ	MSP	MSRH	MSRP	MSS	MST	SG	SN	ST
HA1	0.902	0.360	0.471	0.455	0.374	0.348	0.339	0.444	0.368	0.536	0.339
HA2	0.934	0.381	0.525	0.521	0.440	0.398	0.396	0.491	0.402	0.575	0.352
HA3	0.866	0.463	0.593	0.374	0.431	0.355	0.342	0.312	0.326	0.541	0.411
IEB1	0.387	0.868	0.446	0.383	0.467	0.362	0.405	0.384	0.413	0.520	0.381
IEB2	0.407	0.887	0.434	0.372	0.473	0.334	0.366	0.355	0.421	0.476	0.414
IEB3	0.356	0.815	0.456	0.268	0.380	0.301	0.286	0.254	0.311	0.430	0.383
IEQ1	0.530	0.482	0.894	0.314	0.406	0.312	0.305	0.328	0.362	0.473	0.423
IEQ2	0.512	0.391	0.829	0.452	0.408	0.368	0.363	0.516	0.466	0.492	0.408
IEQ3	0.478	0.467	0.858	0.280	0.409	0.308	0.293	0.312	0.365	0.432	0.447
MSP1	0.443	0.389	0.379	0.870	0.538	0.503	0.568	0.588	0.410	0.431	0.301
MSP2	0.443	0.344	0.342	0.902	0.519	0.485	0.560	0.575	0.415	0.427	0.307
MSP3	0.445	0.339	0.373	0.894	0.499	0.519	0.578	0.651	0.459	0.431	0.310
MSRH1	0.377	0.442	0.403	0.449	0.875	0.621	0.460	0.391	0.382	0.403	0.297
MSRH2	0.419	0.489	0.434	0.493	0.924	0.604	0.523	0.450	0.406	0.478	0.345
MSRH3	0.433	0.445	0.427	0.607	0.866	0.601	0.598	0.543	0.446	0.481	0.382
MSRP1	0.364	0.358	0.341	0.543	0.611	0.905	0.481	0.481	0.384	0.377	0.304
MSRP2	0.330	0.373	0.333	0.480	0.649	0.905	0.438	0.416	0.367	0.347	0.280
MSRP3	0.382	0.294	0.339	0.467	0.543	0.824	0.372	0.428	0.394	0.400	0.283
MSS1	0.303	0.370	0.318	0.448	0.499	0.388	0.830	0.376	0.296	0.346	0.278
MSS2	0.331	0.352	0.295	0.555	0.502	0.387	0.872	0.477	0.320	0.376	0.259
MSS3	0.375	0.331	0.335	0.613	0.509	0.463	0.833	0.577	0.409	0.393	0.281
MST1	0.414	0.362	0.416	0.571	0.464	0.429	0.489	0.899	0.460	0.455	0.329
MST2	0.420	0.333	0.423	0.620	0.487	0.454	0.518	0.924	0.502	0.472	0.354
MST3	0.411	0.364	0.392	0.651	0.463	0.477	0.528	0.883	0.530	0.455	0.340
SG1	0.295	0.377	0.366	0.407	0.387	0.363	0.332	0.474	0.859	0.433	0.516
SG2	0.338	0.363	0.390	0.421	0.397	0.393	0.361	0.491	0.880	0.442	0.517
SG3	0.384	0.389	0.414	0.382	0.381	0.333	0.327	0.419	0.770	0.441	0.476
SN1	0.485	0.434	0.417	0.488	0.467	0.373	0.428	0.529	0.540	0.846	0.454
SN2	0.564	0.511	0.518	0.286	0.405	0.288	0.316	0.293	0.335	0.801	0.506
SN3	0.452	0.420	0.398	0.403	0.381	0.384	0.329	0.419	0.398	0.803	0.391
ST1	0.344	0.411	0.452	0.270	0.309	0.270	0.249	0.295	0.511	0.472	0.868
ST2	0.359	0.406	0.436	0.349	0.370	0.320	0.309	0.355	0.547	0.497	0.874
ST3	0.382	0.399	0.427	0.292	0.342	0.282	0.296	0.349	0.536	0.496	0.911

Table 4 Confirmatory Factor Analysis and Cross-loadings

Structural Model

In PLS analysis, examining the structural paths and the R-square scores of endogenous variables assesses the explanatory power of a structural model. Paths exhibiting a P-value less than 0.05 will be considered significant. Bootstrapping of the 640 cases was done with 500 samples for significance testing. There is partial support for Hypothesis 1, as most of the paths from the use of social media types is positively associated with social interaction capital including Transmission velocity to social interaction capital ($\beta= 0.324$, $p < 0.001$), parallelism to social interaction capital ($\beta= 0.092$, $p < 0.01$), rehears-ability to social interaction capital ($\beta= 0.250$, $p < 0.001$), and reprocess-ability to social capital ($\beta= 0.068$, $p < 0.05$). The one which is non-significant is symbol sets to social interaction capital ($\beta= 0.044$, N.S.). There is also partial support for Hypothesis 2, as most of the paths from the use of social media types is positively associated with information interaction capital including transmission velocity to information interaction capital ($\beta= 0.207$, $p < 0.001$), symbol sets parallelism to information interaction capital ($\beta= 0.067$, $p < 0.05$), and rehears-ability to information interaction capital ($\beta= 0.374$, $p < 0.001$). The two which are non- significant is parallelism to information interaction capital ($\beta= 0.052$, N.S.) and reprocess-ability to information interaction capital ($\beta= 0.021$, N.S.). Social interaction capital has positive effect on habit ($\beta= 0.309$, $p < 0.001$) providing support of Hypothesis 3. Last but not least, Hypothesis 4 is supported as information interaction capital has a significant effect on habit ($\beta = 0.383$, $p < 0.001$).Nine out of twelve paths exhibited a P-value less than 0.05. Overall, the base model accounted for 41% of the variance of habit. Thus, the fit of the overall model is fairly good.

DISCUSSION AND IMPLICATIONS

The objective of study is to explore the antecedents of social member habit through the social interaction capital and information interaction capital accumulated from the types of media use, which contains supportability and relevance to the habit of network members. The results of this study show almost use types of social media are significantly associated with social interaction capital and information interaction capital, except symbol sets, parallelism, and reprocess-ability are partially significant influences on these capitals.

Firstly, symbol sets of social media are not significantly associated with social interaction capital. Dennis et al. (2008) considered that certain symbol sets can affect overall information transmission and processing efficiencies because it takes too much time to encode and decode the symbol set. Therefore, media incorporating these symbol sets have greater capability to support synchronicity that is slower to encode (and decode). Symbol sets may have detrimental effects for social interaction. Hypothesis 1c was not supported.

Secondly, parallelism of social media is not significantly associated with information interaction capital. Parallelism enables multiple simultaneous conversation threads by allowing for multiple simultaneous transmissions (Herring, 1999). Several discussions can become intertwined, so that rather than focusing on one topic at a time, the discussion interleaves messages. Parallelism reduces the interactional coherence of the discussion and impairs the ability of the users to develop a shared focus (Erickson et al. 2002; Herring, 1999; 2003; Simpson, 2005, Dennis et al., 2008). Thus parallelism acts reduce information interaction capital. Hypothesis 2b was not supported.

Lastly, reprocessability of social media is not significantly associated with information interaction capital. While reprocessability allows individuals to revisit messages to support information processing and understanding development (Weick and Meader, 1993), it is not a primary driver for communication performance due to the importance of shared focus and interaction (Dennis et al., 2008). Dennis et al. suggested that reprocessability may lead to delays in information transmission because receivers could take longer to review and deliberate on previously received messages. Therefore, reprocessability may reduce the benefit of information interaction capital. Hypothesis 2e was not supported.

The results further indicate that social interaction capital and information interaction capital had significant effects on habit of SNS members. In the research model, social interaction capital is proposed as a formative second-order construct driven by social network, shared goals and social trust. And information interaction capital is proposed as a formative second-order construct driven by breath of information exchange and quality of information exchange. This study indicated that both social interaction capital and information interaction capital affect the habit of users. Hypothesis 3 and 4 were supported.

A major contribution of this study lies in exploring the habit deriving from cluster effect on SNS. The study establishes habit architecture of SNS. This result reflects the relationship among media capability, social interaction capital, information interaction capital, and social member habit through the social interaction capital and information interaction capital accumulated from the types of media use, which contains supportability and relevance to the habit of network members. The

findings show that the SNS based on information exchange and social Interaction is significant related to the SNS members' habit.

On the other hand, corporate managers with intention to develop SNS may use this study results as the reference for developing new thinking of commercial services. When online network relationships exist and are assimilated to users' daily life, we argue that this model could be used to establish the use of social media contributing the socialization of users (relationship communication and information exchange), in addition to providing SNS industries with further reflection on user demand and functional integrity of social media.

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