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Why people use Twitter: social conformity and social value perspectives

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Abstract

Purpose – Based on social conformity and social value perspectives, the authors aim to empirically examine the critical role of social influences on Twitter user behaviour.

Design/methodology/approach – An integrative structural model is developed to explain how social influences, which are divided into social conformity and social values, work with other salient factors such as the utilitarian and hedonic values to affect the use of Twitter. The partial least square method was used to verify the proposed model with usable data from 204 adult Korean Twitter users.

Findings – Social conformity positively affects the frequent use of Twitter and it is mediated through perceived values such as the hedonic, utilitarian and social appearance values associated with Twitter use. While social appearance negatively affected the trustworthiness of information shared on Twitter, the social capital effect on Twitter use was insignificant.

Research limitations/implications – This study has some limitations for general applicability of the results: the samples include only adult users in Korea, and it is a cross-sectional study for a specific social networking service. This study theoretically disentangles the complicated nature of social influences by proposing two distinct constructs (social conformity and social values) and empirically verifying their significant roles in Twitter use.

Practical implications – Practitioners should recognise that the hedonic value of Twitter is the key factor that affects both the quantity and quality of information shared on Twitter. In addition user motivations for pursuing social appearance in SNSs might cause a user to distort the information that they produce.

Originality/value – This study provides unique implications related to the role of social conformity, social values and user behaviour on Twitter.

Keywords Social capital, Twitter, Social value, Social appearance, Social conformity,
Social networking service

Paper type Research paper

Introduction

Recently social networking services (SNSs) have been highlighted as a medium for information distribution and sharing (Lin and Lu, 2011). Twitter is a micro-blogging

service on which users can post text messages of less than 140 characters. Instead of a long paragraph containing rich information, the service is designed to generate short messages. This simple idea has attracted users from around the world; in May 2013 Twitter reported that it had more than 554.7 million registered users worldwide (StatisticBrain, 2013). Twitter has grown to become one of the most successful online services in recent years (Bulearca and Bulearca, 2010; Jansen and Zhang, 2009).

What is behind the success of this social networking service? This is our primary research question. Researchers in the field of information systems (IS) and information technologies have determined some critical success factors behind the diffusion of innovative systems. Rogers (1995) suggested five key success factors of a new technology: compatibility, trialability, observability, complexity, and relative advantage. Davis (1989) suggested that perceived usefulness and perceived ease of use were the key factors for information systems adoption. More recently the hedonic features of information systems and services have also been found to be critical for the success of new technologies in the market (Van der Heijden, 2004). Furthermore the hedonic factors have become more important for social networking services that are based on voluntary use (Kang *et al.*, 2009). However the utilitarian and hedonic value centric models often overlook the important role of social influences on IS use.

Few studies have investigated how social influences affect the adoption and use of information systems in voluntary use contexts (Kulviwat *et al.*, 2009; Venkatesh *et al.*, 2003). Most of these studies have adopted the subjective norm concept from the theory of planned behaviour as a factor that represents the social influence on IS adoption. Although subjective norms have been the focus of most social influence studies, there have been studies addressing other social factors that could affect IS usage: social image theory in psychology (Turel *et al.*, 2007), social identity theory in sociology (Stets and Burke, 2000), social capital theory (Chang and Chuang, 2011) and social tie theory (Li, 2007) in organisational behaviour, and network effect theory (Huang and Chen, 2006; Lim *et al.*, 2003) in economics.

Through a review of the literature, we formulated the hypothesis that social influences comprise two primary natures: one is a force applied by society to comply with norms and the other is a value pursued by members of the society. By integrating these different types of social influence with other salient factors in IS adoption, such as utilitarian and hedonic factors, we suggest an integrative research model that explains user behaviour on Twitter.

Literature review
Social influence: two forces
Venkatesh *et al.* (2003, p. 451) defined the role of social influence in IT use as "the degree to which an individual perceives that important others believe he or she should use the new system". They established three conceptual dimensions of social influence that had been frequently adopted in IS studies: subjective norms, social factors, and social image. The comprehensive study by Venkatesh *et al.* (2003) and other studies investigating the social influences on IS use have presented evidence that social influences have two different types of forces: one force pushes users to adopt a system and the other force pulls users to adopt a system. In the literature we found that while subjective norms or social norms represent the pushing force as pressure to comply

with others, other social factors such as social image, identity, social status gain, and social capital indicate the pulling force as a value to pursue.

Social conformity: influence as a social push
Cialdini and Goldstein (2004) divide social pressure into conformity and compliance; the former is based on the individual response to normative and mostly implicit requests by society in less compulsory contexts and the latter is based on individual responses to normative and explicit requests by society in relatively obligatory contexts. Social conformity is viewed as a pressure and it is considered to be uncontrollable external conditions that may both directly and indirectly affect user decisions. Under this external condition users decide whether or not they will adopt the normative values of a group or society. Prior theories that address the effect of subjective norms, network effects, and social ties in voluntary information system usage contexts present the role of social influences as social conformity.

Subjective norms represent an example of viewing social influences as pressure. Venkatesh *et al.* (2003) demonstrated that subjective norms do not have significant functions in most cases, but have a significant effect on IS use only if the use is mandated or if the system is in an early stage of diffusion. That is, the effects of social influence as social pressure are not significant for most systems in voluntary contexts or for systems that have been widely adopted. However it is worthwhile noting that subjective norms reflect compliance under mandated system use or conformity in less compulsory use contexts.

Other studies have also supported this argument concerning the role of social conformity in voluntary information system use contexts. Huang and Chen (2006) described users' responses to social pressure as a type of herding effect. They demonstrated that online customers intend to choose a product that has been purchased and recommended by more people. They also suggested that online markets should exploit the power of the crowd. Hence the influences of the normative values of a society are proportional to the number of members who pursue such normative values. Furthermore economists have also explained this influential base using the network effect, which postulates that the value of a product as perceived by the user increases as the number of users increases (Sun *et al.*, 2004). Lim *et al.* (2003) demonstrated that the perceived volume of users of products and services, who largely rely on mutual communication through such media as telephones, email, instant messenger, or online games, is an important consideration for adoption decisions.

For users not only the number of people who use the product/service but also the identity of those users are important (Li, 2007). The theory of social ties addresses this issue. Researchers have examined the effect of the strength of social ties on the decision to purchase IS and it was found that users depend on word-of-mouth information from those with whom they have close and intimate relationships. The strength of a social tie is measured by the importance of the relationship, the intimacy of the relationship, and the frequency of contact (Rau *et al.*, 2008; Li, 2007): the greater the number of people with strong ties to an individual using a technology, the more likely that this individual will adopt this technology. If the spread of a product or service is based on the network effect, the influence of the strength of social ties in the network becomes stronger. When networks are dense, i.e. consisting of a large proportion of strong and direct ties between members, collective action is relatively easy to achieve (Wasko and Faraj, 2005).

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In summary prior studies have demonstrated that social conformity in voluntary information system use contexts affects user behaviour and is highly related to the normative values of a group or society, the volume of the participants complying with the values and the involvement of strong ties in the network.

Social value: influence as a social pull
Social value is another aspect of social influence. Unlike social pressure, however, social value is an extrinsic motivator actively pursued by users. Turel *et al.* (2007) defined social value as the emotional and psychological gain, or "take" component, of enhancing the social image or social status of users through use of particular systems. Previous studies have demonstrated that people are highly motivated to use information systems to obtain various types of social value such as social status gain, social image, social identity, and social capital.

According to the social exchange theory, individuals engage in social interactions based on the expectation that they will lead in some way to social rewards such as approval, status, and respect (Turel *et al.*, 2007). This suggests that one potential way an individual can benefit from active participation is the perception that participation enhances their personal reputation in the social network (Wasko and Faraj, 2005). The results from previous research on use of online networks are consistent with the social exchange theory and provide evidence that building reputation is a strong motivator for active participation. Wasko and Faraj (2005) found that an individual's motivation to improve their reputation and image inspires them to offer useful advice and information to others when using an intra-organisational knowledge sharing system. Individuals also perceived that they gain social status by answering frequently and intelligently while they are using extra-organisational knowledge sharing systems. Thus the perception that contributing knowledge will enhance their reputation and status in the profession may motivate individuals to contribute their valuable personal knowledge to others. Venkatesh *et al.* (2003) also found that individuals intend to obtain potential gains in social status by internalising the normative values of a society and by affirming their social identity through the use of social systems.

Social image theory is also relevant to social values. Social image theory is defined as the degree to which the use of an innovation is perceived to enhance one's image or status in one's social system. Venkatesh *et al.* (2003) argued that an individual is motivated to use information systems in order to respond to potential social status gains (Thatcher *et al.*, 2007).

While the social exchange and social image theories explain users' willingness to enhance their self-concept (Kang *et al.*, 2009), social capital theory focuses on the expansion and enhancement of an individual's social network, which potentially helps the individual by offering more resources, such as knowledge, manpower, or financial support (Adler and Kwon, 2002). For example communications-oriented services contribute to the building and enforcing of one's social capital by allowing users to reach more people and to keep in touch with others, which in turn leads to more intimate and trustworthy relationships (Chang and Chuang, 2011; Stets and Burke, 2000). Nahapiet and Ghoshal (1998) demonstrated that relational capital is enhanced when members identify strongly with the collective, when they trust others within the collective, when they perceive an obligation to participate in the collective, and when they recognise and abide by the collective's cooperative norms. Therefore we cannot

ignore the enhanced social value obtained from the use of information systems that manage and enhance users' relational capital in a group or society.

Research hypotheses and model
Relationships between perceived values and Twitter use
Perceived value is the consumer's overall assessment of the utility of a product or service based on their perceptions of what is received and what is given. Although the perceived value includes both a tangible (economic) and intangible (psychological) reward for a monetary investment, it is generally only associated with the tangible or economic reward (Park *et al.*, 2011). However in most cases, we expect an intangible return corresponding to the monetary investment in an information system or service. Three types of intangible returns or rewards are often discussed in IS research: utilitarian, hedonic, and social values (Shin and Shin, 2010; Turel *et al.*, 2007). When people perceive these values from using Twitter, they are likely to adopt and continuously use the service as long as reliable, accurate, and useful information is offered.

Utilitarian value is a salient construct representing the extrinsic motivation for IS usage, while hedonic value is a typical example of intrinsic motivation. Utilitarian value is the expected external outcome that contributes to one's productivity and efficiency at performing certain tasks. An example of utilitarian value is perceived usefulness in the technology acceptance model. Users attain an increase in productivity for a specific task, or perceived usefulness, through the use of an information system or service (Shang *et al.*, 2005; Venkatesh and Davis, 2000). Twitter is used essentially as a tool for obtaining information from an individual's social networks and for sharing information with others. The simple design of Twitter provides a platform through which users can communicate information quickly on their computers and mobile devices. As a result individuals as well as public and private organisations have been creating Twitter accounts to communicate with people who are interested in their activities. That is, the convenience and usefulness of Twitter has led many to use Twitter. In light of the importance of the utilitarian value, we propose the following hypotheses:

H1. The utilitarian value of Twitter directly influences the use of Twitter.

H1a. If Twitter is useful for information acquisition, distribution, and sharing, users will use it frequently.

H1b. If Twitter is useful for information acquisition, distribution, and sharing, users will share trustworthy information.

Hedonic value is another significant component of perceived value. Hedonic value is defined as the perceived value of enjoyment, playfulness, or fun of using IT. Since it is attained while using the IS, it is an intrinsic motivator that stimulates user involvement and participation (Lin and Lu, 2011; Van der Heijden, 2004). The significant effect of the hedonic value of an IS on its adoption and continuous use has been reported in numerous studies (Shin and Shin, 2010; Van der Heijden, 2004). Some studies have shown that Twitter users experience fun and excitement when they use the service (Bulearca and Bulearca, 2010; Chen, 2011; Fischer and Reuber, 2010). People generate or share tweets about news, personal feelings, and other useful information. By doing

so they believe that they enhance the knowledge and enjoyment of their social group and they enjoy watching others' reactions such as positive replies to or retweeting of the posts. Therefore they are motivated to share reliable, useful, and enjoyable information and to avoid behaviours including distorting information or generating malicious content which may cause negative or harmful effects in their social groups. According to this view we suggest these hypotheses:

H2. The hedonic value of Twitter directly influences the use of Twitter.

H2a. If Twitter is enjoyable, users will use it frequently.

H2b. If Twitter is enjoyable, users will share trustworthy information.

Finally social value can be achieved after using an information system or service (Sweeney and Soutar, 2001). In the literature social value is further divided into social appearance and social capital. Social appearance is one's self-image and identity in a society or group to which one belongs, while social capital represents the actual and potential resources that are embedded within, available through, and derived from the network of relationships of an individual or social unit.

With regard to social appearance Turel *et al.* (2007) considered social value as a key factor that comprised the overall perceived value of mobile services. If people believe an innovation or new product fits what society recommends, they quickly acquire it in order to reveal themselves as a desirable, or better, person in society (Rogers, 1995).

When people are more conscious of their social appearance, they are more likely to adopt state-of-the-art social networking services such as Twitter in order to express their innovativeness and competency in new technologies. By actively using the features of Twitter, they try to share useful, enjoyable, and reliable information more frequently with others in their social network. They perceive that this type of behaviour helps to form intimacy and credibility, which in turn creates a better social appearance to others. Hence we suggest the following hypotheses:

H3-1. Perceived social appearance on Twitter positively influences the use of Twitter.

H3-1a. Perceived social appearance on Twitter positively influences the frequency of information sharing on Twitter.

H3-1b. Perceived social appearance on Twitter positively influences the trustworthiness of information shared on Twitter.

With respect to social capital, social networking services are generally regarded as useful tools for reaching new people and maintaining relationships with closed groups. For example Twitter provides a functionality called "following" that allows subscribers to connect to any other user. If users "follow" a celebrity, they can see updated information on the celebrity in real time. If close friends use Twitter, they can share personal information or feelings through tweets and by following each other. In general SNSs offer opportunities to make new relationships and enhance current relationships through frequency of information sharing activities. The motivation to enhance the quantity and quality of social capital that can be obtained through Twitter influences the use of Twitter. Thus we suggest the following hypotheses:

H3-2. The perceived social capital of Twitter positively influences the use of Twitter.

H3-2a. The perceived social capital of Twitter positively influences the frequency of information sharing.

H3-2b. The perceived social capital of Twitter positively influences trustworthiness of information shared on Twitter.

Social conformity refers to the degree of an individual's motivation to change their behaviour to match the responses of others, particularly in less compulsory situations (Cialdini and Goldstein, 2004). Previous studies have recognised subjective norms as a primary construct representing the external force of a society or group (Hsu and Lin, 2008; Song and Kim, 2006; Venkatesh *et al.*, 2003; Wang and Lin, 2011). Since people who strongly pursue social gains are sensitive to new fashions, trends, and innovations, the normative influence of social conformity has a function as the primary motivational force to cause people to participate in state-of-the-art technologies (Hsu and Lin, 2008; Venkatesh *et al.*, 2003).

Thus social conformity leads people to join online social networks such as Twitter. Once they begin to use Twitter, they are involved in information sharing activities on Twitter and they tend to actively participate in online activities in order to build positive social images and identities in their social group. Therefore we suggest the following hypotheses:

H4. Perceived social conformity positively influences the use of Twitter.

H4a. If users feel higher social conformity, they are likely to frequently participate in information sharing activities on Twitter.

H4b. If users feel higher social conformity, they are likely to keep sharing trustworthy information on Twitter.

Since social conformity is based on explicit or implicit consensus among group members, it is perceived as an important source of information. This is the informational influence of social norms (Cialdini and Goldstein, 2004). In this case the volume of participants in the reference group and the strength of relationships among the participants are important. When more participants accept or comply with the norms, this signals that the norm is valuable to accept. For example when users observe that more people use Twitter and recommend that others use it, they perceive it as an effective tool for communication with convenient features for accessing a variety of information from a range of information sources. Hence we the following hypothesis is proposed:

H5a. If a user feels higher social conformity, it positively affects the utilitarian value of Twitter.

Similarly users can experience fun while using Twitter itself because people are intrinsically motivated to learn a new technology (Shang *et al.*, 2005). Moreover they experience the hedonic value of Twitter while connecting to new people and watching other users' reactions to their posts or messages on Twitter. Therefore the level of

expected hedonic value increases when the user's perceived social conformity increases as more people join the Twitter network. Therefore we suggest the following hypothesis:

H5b. If a user feels higher social conformity, it positively affects the hedonic value of Twitter.

Finally people regard the use of Twitter as socially desirable and encouraged when more people adopt it. In this situation people perceive high levels of social conformity; thus they choose to adopt Twitter rather than avoid it. Furthermore people actively learn to use Twitter and take full advantage of it in order to reveal their innovativeness or competency image. Thus one's perceived social conformity in using Twitter influences one's positive social appearance through the use of Twitter. Hence we suggest the following hypothesis:

H5c. If a user feels higher social conformity, it positively affects their social appearance in Twitter.

Moreover the perceived social conformity of Twitter use affects one's expectation of the level of social capital that can be achieved through using Twitter. High levels of perceived social conformity imply that Twitter is an effective online platform for networking an individual's offline relationships and for making new online relationships. The characteristics of prompt communications and various representations of information cause people to expect enhancements of the quantity and quality of their social capital. Thus the following hypothesis was developed:

H5d. If a user feels higher social conformity, it positively affects the user's social capital on Twitter.

The proposed research model in Figure 1 presents all hypotheses discussed in this paper.
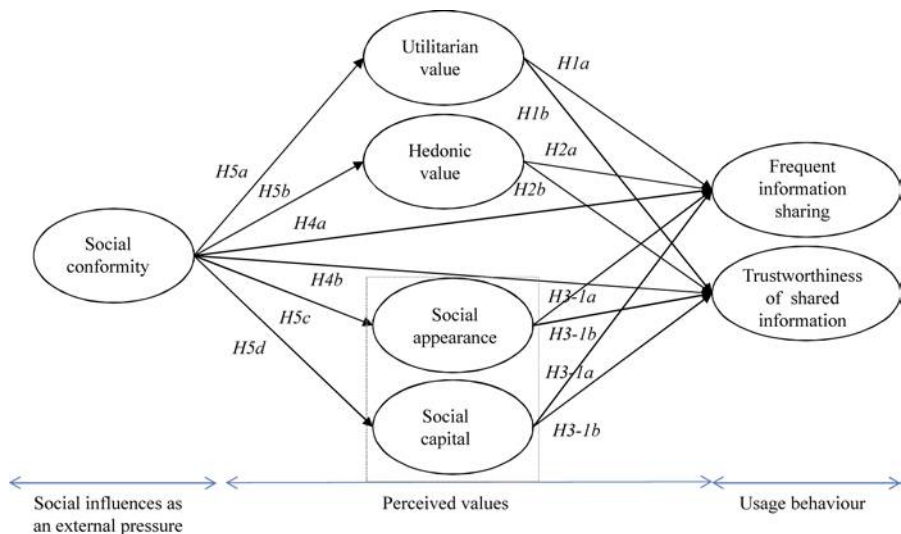

Figure 1.
Proposed research model

Research method

Data collection

The samples used in previous studies on social networking services have been inconsistent in terms of age distribution. While some studies have used both teenagers and adult samples (e.g. Hsiao, 2011; Lin and Lu, 2011), other studies only included teenagers (e.g. Mäntymäki and Salo, 2011; Baker and White, 2010) or only included adults (e.g. Lee *et al.*, 2011). Moreover Pfeil *et al.* (2009) contrasted the usage behaviour of MySpace between teenagers and people aged over 60, i.e. teenagers and adults (Pfeil *et al.*, 2009). Furthermore the literature has demonstrated that teenagers have distinct characteristics in their use of social networking services, including being more strongly relationship-centric, focused on the extension of offline relationships into online spaces, and frequent use.

Meanwhile Twitter is an information-oriented SNS rather than a relationship-centric SNS and it is used primarily by adults, with the majority of users aged in their 20s to 40s (Pingdom, 2012). Accordingly we collected data from the adult users of Twitter (i.e. aged over 20) and excluded teenagers due to the possible biases in the results caused by their distinct characteristics in their use of SNSs.

In order to collect the data we conducted an online survey using Embrain.com, which is a professional survey agency that has the largest number of online panels in Korea, and 204 sets of usable data were obtained over a period of one week in December 2010. The profile of the surveyed users is summarised in Table I.

The male respondents slightly outnumbered the female respondents. More than 77 per cent of the respondents had a bachelor's degree. More than 50 per cent were white-collar workers and 15 per cent were engaged in professional occupations. The age of the respondents ranged from 20 to 49; those in their 20s and 30s accounted for more than 70 per cent of the total participants.

Measurements

We adopted the measurement items that were used in previous studies and aggregated the items into the relevant constructs in the proposed model. The questionnaire items for utilitarian value were adapted from Venkatesh and Davis (2000), and the scales for hedonic value were adapted from Van der Heijden (2004) and Turel *et al.* (2007). The scales for social appearance consisted of the measurement items for social image in Venkatesh *et al.* (2003), social identity in Turel *et al.* (2007), and social belongingness in Hsu and Lin (2008). The scale for social capital was adapted from Nahapiet and Ghoshal (1998). The measurement items for social conformity were developed from the scales related to subjective norms, social ties, and network effects in Venkatesh *et al.* (2003), Wasko and Faraj (2005), and Huang and Chen (2006), respectively. Finally the usage behaviour was measured using two constructs: the frequency of information shared indicates how actively a user works with Twitter and the trustworthiness of shared information indicates a user's willingness to generate reliable information. The items for each construct were adapted from Chen (2011) and Fischer and Reuber (2010), respectively. All items were measured on a seven-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7). Table II summarises the measurements used in the analyses.

The data analyses were performed using the partial least square (PLS) method for the assessment of both the measurement model and the structural model. The PLS method has been increasingly used in information systems studies, particularly those in the early

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	Frequency	%
Gender		
Male	118	57.8
Female	86	42.2
Age		
20-29	74	36.3
30-39	69	33.8
40-49	61	29.9
Level of education		
Less than secondary school	16	7.8
Bachelor's degree	158	77.5
Higher than bachelor's degree	30	14.7
Occupation		
Professional	31	15.2
White collar	107	52.5
Blue collar	8	3.9
Student	30	14.7
Homemaker	18	8.8
Other	10	4.9
Monthly income		
Less than US$1K	34	16.7
$1K-$2K	50	24.5
$2K-$3K	41	25.0
$3K-$4K	34	16.7
More than $4K	35	17.2
Total	204	100

Table I.
Respondents' profile

Note: $n = 204$

stage of theory development. The PLS method places minimal restrictions on the measurement scales, sample size, and residual distributions (Hsiao, 2011); thus it is well suited for exploratory studies that involve new scales (Wang and Lin, 2011) and is useful for identifying path coefficients between independent and dependent variables (Lee *et al.*, 2011). Given the relatively small sample size ($n = 204$) and the primary motivation of identifying the causal relationships between the proposed constructs in our research model, the PLS method is an appropriate analysis technique for this study.

Results

Measurement model

To verify the construct reliability, convergent validity, and discriminant validity, confirmatory factor analysis was performed using Smart PLS 2.0 (Gefen and Straub, 2005). The significance level and stability of the estimates were assessed using a bootstrapping re-sampling procedure.

Composite reliability (CR) and Cronbach's alpha were used to assess the reliability of the items of each construct. The minimum values of CR and Cronbach's alpha were 0.882 and 0.778 respectively (see Table III). Each value is higher than the recommended value of 0.7, suggesting that all constructs were reliable.

Construct	Measurement	Literature
Utilitarian value	Twitter is useful for obtaining needed information in an easy and convenient way Twitter is useful for disseminating information quickly and easily	Venkatesh and Davis (2000) Shang et al. (2005)
Hedonic value	I have fun when I use Twitter It is interesting to use Twitter I feel bored when I use Twitter (reverse coded)	Van der Heijden (2004) Turel et al. (2007) Lin and Lu (2011)
Social appearance	People who use Twitter look better than people who do not People who use Twitter have a high profile People who use Twitter look nice By using Twitter, I am not lagging behind the fashion If I do not use Twitter, I feel isolated from others I feel belongingness to a group using Twitter	Venkatesh et al. (2003) Venkatesh et al. (2003) Venkatesh et al. (2003) Turel et al. (2007) Hsu and Lin (2008) Turel et al. (2007)
Social capital	I can connect with a greater diversity of people using Twitter I can make new relationships with more people By using Twitter, I feel more intimate with other Twitter users Using Twitter, the trust between users becomes enhanced	Nahapiet and Ghoshal (1998)
Social conformity	My family and friends are using Twitter People whom I frequently contact are using Twitter My colleagues are using Twitter People who are important to me think that I should use Twitter People who influence my behaviour think that I should use Twitter Many people around me are using Twitter	Venkatesh et al. (2003) Wasko and Faraj (2005) Huang and Chen (2006) Li (2007)
Frequent information sharing	I post comprehensive information about me on Twitter I often post tweets about my daily life and personal opinions I use Twitter whenever I want to say something	Chen (2011) Fischer and Reuber (2010)
Trustworthiness of shared information	My tweets are always true I am honest in my Twitter content	Chen (2011) Fischer and Reuber (2010)

Construct	CR	Cronbach's α	AVE
UV	0.906	0.793	0.828
HV	0.936	0.897	0.830
SV$_c$	0.911	0.871	0.719
SV$_a$	0.931	0.910	0.692
SC	0.908	0.874	0.664
Freq_Use	0.882	0.799	0.715
Trust_Use	0.900	0.778	0.817

Notes: UV: Utilitarian value; HV: Hedonic value; SV$_C$: Social capital; SV$_A$: Social appearance; SC: Social conformity; Freq_Use: Frequent information sharing activities; Trust_Use: Trustworthiness of shared information

Table III.
Reliability of each construct and convergent validity

To test the convergent validity, we assessed the average variance extracted (AVE) and factor loadings of each construct. For convergent validity it is recommended that the AVE should be greater than 0.5 and the factor loading of each indicator of a construct should be higher than 0.7 (Gefen and Straub, 2005). In our model the minimum value of AVE of a construct was 0.664 and all factor loadings of their respective constructs also satisfied the recommended level for convergent validity.

Discriminant validity can be tested using the cross-loadings of each indicator and the square root of the AVE of each latent variable. For the measurement model to have discriminant validity, the item loadings belonging to a construct should be higher than the correlations between the construct and other items (see Tables III and IV); the square root of the AVE of a construct should be higher than the correlations between the construct and all the other constructs (see Table V). Cross-loadings of their respective constructs are highlighted and are greater than 0.7. The results support the discriminant validity of this measurement model.

ST1 was dropped after confirmatory factor analysis because its factor loading in the structural model (0.6) was not enough for the recommended value (0.7).

Hypotheses testing
The results of the structural model shown in Figure 2 indicate that the hedonic value is the only significant factor among the perceived values that affects both quantitative $(\beta = 0.290, t = 3.592)$ and qualitative $(\beta = 0.319, t = 3.637)$ aspects of the information sharing activities on Twitter. Outside of the perceived values, social conformity $(\beta = 0.462, t = 6.011)$ also directly influenced the amount of information generated by users on Twitter.

In contrast the three perceived values affected the trustworthiness of information shared on Twitter, that is: utilitarian value $(\beta = 0.188, t = 2.116)$, hedonic value $(\beta = 0.319, t = 3.637)$ and social appearance $(\beta = -0.263, t = 3.213)$. A negative relationship was found between the trustworthiness of information and social appearance. Social capital did not have a significant effect on user information sharing behaviour. Among the antecedents of actual use of Twitter, social conformity showed a relatively stronger effect on the social values – social capital $(\beta = 0.569, t = 10.302)$ and social appearance $(\beta = 0.562, t = 12.178)$ – compared to its effect on hedonic $(\beta = 0.511, t = 8.311)$ and utilitarian values $(\beta = 0.248, t = 3.198)$. The influence of

	UV	HV	SC	SV$_A$	SV$_C$	B_Amt	B_trust
UV1	0.921	0.493	0.226	0.209	0.426	0.241	0.353
UV2	0.899	0.428	0.225	0.191	0.440	0.220	0.295
HV1	0.474	0.938	0.484	0.466	0.517	0.485	0.346
HV2	0.463	0.917	0.438	0.431	0.471	0.485	0.369
HV3	0.450	0.877	0.474	0.422	0.576	0.472	0.354
SC_ST1	0.203	0.414	0.805	0.330	0.418	0.498	0.196
SC_ST2	0.179	0.389	0.787	0.349	0.496	0.510	0.260
SC_SN1	0.231	0.443	0.855	0.592	0.486	0.509	0.158
SC_SN2	0.262	0.446	0.835	0.599	0.468	0.555	0.131
SC_NE	0.117	0.383	0.789	0.370	0.449	0.425	0.170
SV$_A$_IM1	0.132	0.409	0.535	0.810	0.450	0.314	0.000
SV$_A$_IM2	0.192	0.400	0.431	0.891	0.523	0.334	0.052
SV$_A$_IM3	0.185	0.411	0.468	0.887	0.543	0.343	0.035
SV$_A$_IM4	0.301	0.448	0.368	0.757	0.572	0.291	0.171
SV$_A$_ID1	0.115	0.348	0.445	0.784	0.441	0.299	−0.030
SV$_A$_ID2	0.194	0.398	0.528	0.852	0.541	0.385	0.020
SV$_C$_1	0.388	0.495	0.382	0.436	0.808	0.322	0.218
SV$_C$_2	0.442	0.493	0.406	0.407	0.821	0.345	0.230
SV$_C$_3	0.396	0.471	0.558	0.590	0.880	0.445	0.197
SV$_C$_4	0.396	0.494	0.552	0.611	0.881	0.390	0.226
B_freq1	0.119	0.282	0.449	0.363	0.313	0.737	0.234
B_freq2	0.237	0.434	0.544	0.310	0.404	0.904	0.328
B_freq3	0.264	0.578	0.560	0.347	0.408	0.885	0.381
B_trust1	0.289	0.353	0.270	0.093	0.204	0.394	0.890
B_trust2	0.354	0.355	0.140	−0.005	0.254	0.300	0.918

Notes: HV: Hedonic value; UV: Utilitarian value; S$_{Conf}$: Social conformity; S$_{App}$: Social appearance; S$_C$: Social capital; B_freq: Frequent information sharing; B_trust: Trustworthiness of information shared

Table IV.
Cross-loadings

Construct	UV	HV	SV$_c$	SV$_A$	SC	Amount	Trustworthy
UV	0.910[*]						
HV	0.508	0.911[*]					
SV$_c$	0.475	0.572	0.848[*]				
SV$_A$	0.221	0.483	0.613	0.832[*]			
SC	0.248	0.511	0.569	0.562	0.815[*]		
Freq_Use	0.254	0.528	0.448	0.397	0.616	0.846[*]	
Trust_Use	0.358	0.391	0.255	0.045	0.221	0.380	0.904[*]

Notes: [*]Each diagonal element is a square root of the AVE; UV: Utilitarian value; HV: Hedonic value; SV$_C$: Social capital; SV$_A$: Social appearance; SC: Social conformity; Freq_Use: Frequent information sharing activities; Trust_Use: Trustworthiness of shared information

Table V.
Correlations and square
roots of AVE

social conformity on the hedonic value of Twitter was greater than that on the utilitarian value, but less than that on the social value.

Discussion
In this study we have attempted to disentangle the mixed and complicated nature of social influences. The results of our empirical study indicate that social influence can
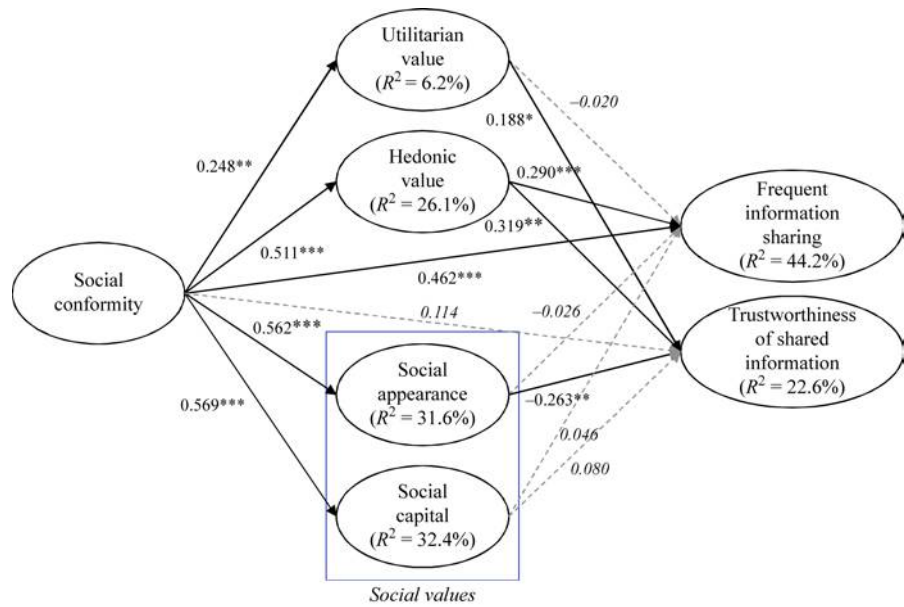
Figure 2.
Results of structural
equation model

Note: *$p < 0.05$, **< 0.01 and ***< 0.001

be divided into social values and social conformity in voluntary use contexts. We will
discuss the theoretical and practical implications of this study in the following sections.

Theoretic implications
First we found that social influences in the use of Twitter can be conceptually divided
into two facets: social values to yield and social pressure to comply. An individual's
Twitter use is not only affected by the value that can be obtained through using the
service, but also by the external forces of the society that the user belongs to. Social
values consist of the user's expectation of an enhanced image and identity, together
called social appearance, and the quantitative and qualitative expansion of one's social
network, known as social capital. Our empirical results demonstrate that social values
and social conformity are distinct constructs.

Second the mechanisms used to respond to social conformity and social value differ
theoretically. Extrinsic motivation applies when users pursue a gain of social value
whereas conformity causes users to accept external pressure. For example the
enhancement of social relationships and self-image within a group can be viewed as an
outcome of using a system, and thus social value presents extrinsic motivation (Turel
et al., 2007). Unlike social value, social conformity is the users' response to an
uncontrollable external force. Therefore different constructs have different functions in
the process of SNS use. In short social conformity increases the perceived value of
Twitter. Thus the more people consider an innovation to be acceptable or
recommendable, the more the intrinsic and extrinsic motivation to use the
innovation increases. Social conformity as an external condition not only directly
affects the perceived value of Twitter for the user, but also influences the information

sharing activities on Twitter. However social conformity only affects the frequency of information sharing activities, not the trustworthiness of the information shared. Because social conformity depends on the number of participants in the network and a user's willingness to comply with the normative values or culture of the society, social conformity is more likely to have a quantitative outcome, rather than a qualitative effect on SNS use.

Third we found that social values are composed of two key constructs: social appearance and social capital. Social appearance includes measurements of both social image and social identity. Social image and social identity have a common theme in that both one's image and one's identity depend on self-judgement or others. A user's social image and social identity tell them who they are and how they are perceived in the social system. In general people desire an image that is acceptable and similar to that pursued by others in their group or society. Our results demonstrate that the need to gain a positive social image and social identity in a society can be categorised into a single dimension. Contrary to our expectation, the empirical results demonstrated a negative relationship between social appearance and the trustworthiness of information shared on Twitter. This implies that individuals have a motivation to hide or conceal information if hiding or concealing that information is helpful in maintaining a positive image or identity in the group. This type of deceptive behaviour should be understood by also considering the cultural contexts (Kim *et al.*, 2011; Nosko *et al.*, 2010). Despite social capital not exhibiting a significant effect on the usage activities in Twitter, we verified that social capital includes the indicators that represent the expansion and enhancement of the individual's human networks, such as frequent interactions, new connections, trust, and intimacy.

Practical implications
First practitioners must understand users' desire to enhance their social appearance through SNSs. This desire affects the quality of the content that a user generates and shares. Our findings demonstrate that users have an incentive to provide untrustworthy information if it gives them their desired social image and social identity in an online space. That is, there could be a trade-off between the increase of social value and the quality of information shared. Providing functions or tools to express user identity or emotions, such as avatars (Song and Kim, 2006), improves the social value of SNSs, but could simultaneously increase the chances of users generating fictitious information.

Second our results demonstrate that each component of perceived value had varying effects on the quantity and quality of the information shared by users. Thus practitioners must understand the primary motivation behind the use of the SNS of interest. We found that hedonic value, which is the intrinsic motivation for using the SNS, contributes to increasing both the quantity and quality of information. The utilitarian value of the SNS increased the quality of information. Finally social appearance, which is a social value, negatively influenced the quality of information. As a result, if a user places more significance on the utilitarian value or hedonic value of an SNS, they are more likely to generate and share more trustworthy content. However if a user is primarily interested in the social value of using the service, the information produced by the user could be less trustworthy.

Third the primary motivation of users can differ among different SNSs. Since Twitter is an information-oriented SNS, the primary motivation for using Twitter is the

utilitarian value of the service (Chen, 2011). Therefore the potential problem of the lower quality of the content generated by social value-oriented users will be less likely than that for SNSs that are dominated by social value-oriented users. Users of relationship-oriented SNSs (e.g. Facebook and MySpace) are more likely to seriously degrade information because the primary goal of those SNSs is self-expression, rather than sharing useful information through the network (Nosko *et al.*, 2010). Degradation indicates not only the intentional distortion of information or active distribution of malicious content, but also the partial or incomplete disclosure of information sensitive to user privacy. Therefore the developers of relationship-oriented SNSs provide measures to prevent or minimise the degradation of information shared and must address privacy concerns.

Limitations and further studies
This study has some limitations in the generalisability of the results. First the data used for the analyses only involved adult Twitter users. Thus the sample might be biased in terms of age. In order to complement this weakness, further studies that investigate age differences in the usage behaviour on Twitter are encouraged. As Pfeil *et al.* (2009) found, a social capital divide exists between teenagers and adult users in MySpace, and empirical studies that focus on the age differences in Twitter use will provide unique theoretical and practical implications.

Second the proposed research model should be empirically validated for various information systems or services including different types of SNSs. We chose Twitter, an information sharing service, as the target SNS for our study; however there are numerous other types of SNSs such as relationship-oriented services (e.g. Facebook) or communication-oriented services (e.g. online instant messengers). Studies on these types of SNSs will be helpful in validating and improving the reliability and general applicability of the findings of this study.

Third cross-cultural studies are highly recommended for better interpretation of the results in a global context. This study is limited in the generalisability of its results because the sample was restricted to Korea, where people prefer to create deep and strong relationships offline and use online spaces to maintain relationships from offline networks (Kim *et al.*, 2011). Individualist cultures where people place stronger emphasis on information and entertainment seeking through SNSs may present different results to those in this study as Korea has a collectivist culture. Thus the primary purposes and perceived values of using SNSs in different cultures, countries, or regions are likely to be different. Investigation of cultural differences in perceived value and usage behaviours could offer new insight for global SNS companies such as Twitter, Facebook, and Google.

Finally further studies are required in order to examine any changes in the effect of social influences across time. The normative influence of social conformity may not be sustainable over time as more people take it for granted. However the informational influence of social conformity and social value may have a stronger impact on the use of SNSs because people perceive more certainty based on the agreed opinion from the collective and because social values can be accumulated from social interactions. Further studies should focus on longitudinal changes in the influence of the different kinds of social influences.

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