

# Who are Dominant Communicators on Twitter? A Study of Korean Twitter Users

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## ABSTRACT

*This study explores how Twitter users perceive their socio-communication attitudes as well as those who users follow. From the theoretical perspective of communication styles in interpersonal communication, this study focuses on the positions and roles of users and their partners in Twitter conversations by conducting a survey and a content analysis. The results demonstrate that the respondents tended to perceive their communication attitudes to be more passive on Twitter than in the real world. In addition, they tended to perceive that their most trusted followees were more likely to show dominant communication attitudes than they did. These results indicate that ordinary users are more likely to play a role as listeners than as speakers on Twitter while entrusting several trusted users with the role of a dominant communicator and that their perception of their own and their followees' communication styles tends to influence their actual behavior on Twitter.*

**Keywords:** Communication Style, Dominant, Microblog, Twitter

## 1. INTRODUCTION

In recent years, diverse types of social media have changed the way in which people communicate. Twitter that allows its members to be interconnected and to engage in interactive communication is one example. Members post and exchange short messages (up to 140 characters). The limited length enables members to exert less effort and facilitates participation. With the increasing popularity of Twitter, scholars representing a wide range of academic fields have been examining its media characteristics and influence on social, political, and business activities [1]-[3]. In addition, its ability to rapidly distribute messages (information) has sparked a fierce debate over a wide range of social issues worldwide, even in countries where internet use is relatively low [4].

Most of the previous studies have analyzed Tweets in English or English-speaking users, despite the worldwide popularity of Twitter. Because most Twitter users are English speakers [5], studies of Tweets in English can provide

important insights into Twitter-mediated social phenomena. However, there has been intense debate over whether this reliance on the English-based cyberspace could limit a more detailed understanding of the Internet [6], [7]. In other words, although there has been growing interest in developed Internet cultures in Asia, few studies have examined the sociocultural role and use of the Internet, especially its recent services (e.g. twitter), in Korea and other regions in Asia [8, 9]. To this point, the present study aims to extend previous research on Internet service by exploring Twitter use by Koreans.

By considering Korean users, the present study sheds some light on the capacity of Internet as a global communication channel. Specifically, this study focuses on the use of Twitter (which has a number of features) and examines how Twitter users perceive their communication styles as well as those of their followees on Twitter. In doing so, this study aims to examine the effect of users' perception of communication styles on Twitter activity and further get a clue of the similarities and differences between global and local Twitter usage patterns. For this, this study surveys a sample of Twitter users in Korea and conducts a content analysis to supplement the self-reported survey data.

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## 2. RELATED WORK

### 2.1 Korea's Internet Use

Because of the Korean government's efforts to develop the country's Internet infrastructure, Koreans have enjoyed high-speed Internet access at home and school and in the workplace and other public areas since 1999. As of May 2010, there were approximately 37 million (77.8% of the population) Internet users in Korea (see [isis.kisa.or.kr](http://isis.kisa.or.kr)). The country's high-quality infrastructure, small territory, and high population density have accelerated the influence of the Internet on Korean society [10].

The growth of domestic Internet services such as Naver.com, however, is paralleled with the closeness of Internet services. Yahoo! and Google had relatively failed to secure a substantial share of the Korean market. On the contrary, Twitter was successfully launched in the Korean market. Twitter is run by the U.S. based company but its success in South Korea made us to examine research questions raised in current study. It is because domestic Internet services may have peaked in terms of their competitive advantage over foreign ones, implying the growing globalization in Korean society. Additionally, the Internet environment, which has been changed on the basis of social media, requires for understanding of local users, not U.S.-context understanding in domestic market more and more. In this regard, this study explores Twitter use in Korea to assess the unique usage in a local culture and general attributes of Twitter across cultures.

### 2.2 Types of Communication on Twitter

With the remarkable increase in the number of Twitter users worldwide, scholars have noted the various ways in which Twitter can influence social relationships or communication behavior. Given Twitter's ability to facilitate instant interactions among users when they are online, Twitter use has typically been classified into the following two categories: information distribution and socialization [5], [11].

Regarding information distribution, some studies have argued the equalization of information sharing and the realization of e-government as an alternative means of direct democracy [12]-[14]. On the other hand, other studies have suggested that only a small portion of Twitter users contribute to information creation [15], [16]. In addition, despite Twitter's potential to facilitate online social networks worldwide [17], some studies have provided evidence that people tend to subscribe only to those Tweets by personally or politically alike or like-minded followees [18]. These findings indicate a need for a better understanding of social networks on Twitter, particularly regarding the types of relationships it facilitates and the ways in which such relationships balance socio-communication power [19].

As a tool for broadcasting information, Twitter takes a one-to-many communication form, which results from asymmetric connections on Twitter. It is well known that Twitter is an open-system medium that allows users to connect to another user without having to secure any permission. That is, the relationship between followers and

followees is not necessarily mutual, and accordingly, the balance between these users can easily decay. Users with large numbers of followers can have more influence on their messages than those with fewer followers.

Regarding socialization, Twitter users disclose their personal information to engage in various activities [20]. Retweeting, which refers to forwarding a message to others, elicits social actions from those who sympathize or empathize with a topic or a social event [21] and can play an important role in information dissemination. *Replies* and *mentions*, which refer to a Tweet message designating a specific user with @ sign, involve users in interactive communication. Noteworthy is the role of the sign @ on Twitter. This sign not only invites a response to a specific user but also leads to collaborative efforts by connecting other users with a specific user or a related theme [5]. Thus, this sign is commonly observed in interactive communication.

In addition to interactive communication, users also employ Twitter to express the self without expecting a particular response. In this case, Twitter is a personal space in which one's life is recorded and reactions from others do not really matter [22]. Naaman et al. (2010) found that a majority of Tweets involve current activities of the user [16]. Given that Twitter basically asks users to answer the question of "what's happening?" on the front page, such results are not surprising. However, few studies have focused on this self-oriented use by the majority. This is because, in general, no interactive communication can accompany some distinguished social effects.

In general, the Twitter interface facilitates many-to-many communication [23]. Although users are interconnected through the follower-following system and share Tweets with one another, even nonmembers can access published messages. The many-to-many communication system tends to make it difficult for users to sustain a topic on the Twitter timeline. Some users designate specified receivers by using the @ sign [5], but anyone could interrupt the person-to-person exchange on the timeline and be instantly involved in the conversation. This noisy environment, however, does not negatively influence Twitter activities. In fact, users may expect interruptions by others because they would otherwise use direct messages, which represent the function of one-to-one communication.

Given such interactive communication on Twitter, the identity of the audience becomes important. Audiences determine conversational contexts and thus influence communication strategies [24]. However, Twitter's many-to-many communication system makes it difficult to define audiences. According to Marwick and Boyd (2010) [22], users adopt various communication strategies to address networked audiences. Although one cannot know the actual readers of one's Tweets, one can attempt to imagine certain audiences and build communication strategies accordingly. That is, despite the difficulty in defining the general audience, Twitter users typically attempt to have general ideas about their audiences and create communications strategies that cater to those audiences. In this regard, this study notes that there may be a wide range of dynamically induced communication behaviors in various contexts and considers

the following two key aspects of Twitter: a) the equalization of communication and information sharing and b) socialization with others beyond spatial limits.

### 2.3 Microblogging Use in Korea

In Korea, Twitter has attracted increasing attention from Internet users since some Korean celebrities (e.g., Yuna Kim, a world-class figure skater, and Lee Oi-Soo, a famous novelist) started to use Twitter in mid-2009 [25]. Political events such as local elections and the 2010 National Assembly elections accelerated Twitter use in Korea [26]. Recently, an increasing number of online news services have been using Twitter as an important news source, contributing to the continuing increase in the number of Twitter users. Thus, the rise of Twitter in Korea has been attributed largely to celebrities and political events. In addition, the dissemination of mobile communication devices (e.g., smartphones and tablet computers) has contributed to the increase in the number of Twitter users [2].

According to the Twitter Korean Index by OikoLab (<http://twkr.oiko.cc/>), a private research institute in Korea, the number of Korean users increased exponentially since April 2009, and as of May 04, 2012, there were approximately 6.4 million Twitter users in Korea. A vast majority of Twitter users are located in Seoul (the capital of Korea) and Busan (the second largest city), followed by major metropolitan areas (<http://blog.oiko.cc/post/1323057365/tki-map>). Recent reports have provided evidence of Twitter's impact on information dissemination and its ability to influence public opinion on critical social issues in Korea [27, 28]). Moreover, the potential demand for Twitter is very high in Korea [29].

Lee and Nai (2010) considered a sample of Korean Twitter users and found that male participants were more likely than female participants (80.9% and 19.1%, respectively) to use Twitter and that the average age of Twitter users was 31.51, which suggests that professional males account for a large portion of Korean Twitter users and that they tend to be confident in certain topics as a result of their professional background [30]. This is inconsistent with the findings of previous studies based on U.S. samples, which have typically reported that females are just as likely to use Twitter as males [16], [31]. Thus, there is a need for an analysis of the reasons behind such differences between Korean and the U.S. samples.

### 2.4 Dominant Communication Style

Norton [32] proposed nine dimensions (dominant, dramatic, animated, open, contentious, relaxed, friendly, attentive, and impression leaving) to represent communication styles, which he defined as the "way one verbally and paraverbally interacts to signal how literal meaning should be taken interpreted, filtered, or understood" [32, p. 99]. Accordingly, the communication style influences how one understands and responds to transmitted information [33]. The present study focuses on Twitter users' perception of their own and their followees' communication styles on Twitter because the communication style of actors can help analyze models of

new media use by revealing the adoption, use, and evaluation of new media [34].

Among the nine dimensions, the present study focuses only on the "dominant" dimension. As mentioned earlier, one of the major Twitter attributes is its ability to facilitate open and asymmetric connections. Unbalanced connections can influence Twitter interactions. For example, users with a large number of followers are more likely to play a role as information providers, and those with more followees than followers tend to be information subscribers [35]. Information providers often demonstrate their influence to set the conversational issues and topics despite their small portion of the total Twitter popularity; in contrast, the majority of Twitter users is information subscribers and also devotes to saying to themselves or random thoughts that are rarely involved with interactive communication [16], [36]. These roles in each position are not fixed and have been modified, cultivated, or reinforced through constant communication process. Using the concept of dominance, this study aims to understand how actors' perception of communication style affects and determines their communication position. This study argues that the "dominant" dimension of communication styles can be used to identify those users who tend to become information providers through their interactions on Twitter. Dominant communicators exercise their influence to lead the conversation, manage the conversation, form public opinion, and win the argument [37]-[39].

Several studies have examined dominant actors in computer-mediated communication (CMC) and suggested that reductions in nonverbal communication cues (e.g., vocal traits, facial expressions, and gestures) can soften the characteristics of such actors in CMC [40, 41]. However, there are communication environments in which dominant behavior becomes salient in CMC. First, speaking time, an indicator of dominant behavior, can parallel the number of posts on the Internet. If one reveals one's opinions more frequently than other users, one could assume a dominant position in the conversation. Typically, a small number of users shape the characteristics of the online community or those of corresponding web services through the power law effect [36]. Second, an increase in the number of alternative CMC cues that could replace nonverbal cues can increase one's social presence and indicate one's offline identity and social status [42]. Such alternative cues are typically included in user profiles and articulated from existing offline friends.

Although early studies of communication styles placed considerable emphasis on the behavioral aspects of communicators, Peña et al. (2007) paid more attention to the perception of communicators [43]. That is, by considering various communication situations, they explored how communicators perceive their own and their partners' communication styles. They found that CMC communicators from different geographic locations are less likely to exhibit a dominant communication style than those from the same location. In addition, those from the same geographic location are more likely to be attracted to those exhibiting the same communication styles. Peña et al. focused on CMC collaboration to find solutions to decision-making tasks.

Similarly, the present study focuses on communicators' perception of their own and their followees' communication styles. However, this study considers Twitter users who employ Twitter for information sharing and socializing, not for collaboration on a specific task.

By considering various communication situations, this study contributes to the literature by providing a better understanding of the effects of communication styles. This study is guided by the following research questions:

RQ1. In what ways do Korean users employ Twitter?

RQ2. How do Twitter users' perception of their own and their followees' communication styles influence their socio-communication attitude and behavior on Twitter?

### 3. METHOD

#### 3.1 Research Procedure

We conducted the survey in September 2010. We randomly collected IDs from the Twitter public timeline ([http://twitter.com/public\\_timeline](http://twitter.com/public_timeline)) and selected only those IDs using Korean characters. We repeated this process until we collected 900 accounts and then *followed* all of them during the third week. Of the 900 accounts, 286 followed our account back, and finally, a total of 159 users (56% of mutual followers) accepted the request for survey participation. Most of their responses were immediate and we waited for the rest of responses for one week and then the process was completed. Further, we collected profile information and Tweets by using the Twitter API (application program interface). We excluded 35 accounts (out of 159) from the content analysis because they did not allow the researcher to analyze their messages, and thus, we analyzed a total of 124 accounts.

#### 3.2 Participants

As shown in Table 1, 106 (85.6%) were male, and 18 (14.5%) were female (35 did not indicate their gender). Most of the participants were males. This may be because of the gender of the researcher whose account was used to send the survey link or because of gender differences in social interest in Twitter communication. In this regard, future research should further explore this issue. More than half of the participants (80.8%) were undergraduate or graduate students. Their age ranged from 16 to 50, and the average age was 32 ( $SD=9.279$ ). Most of the participants (84.8%) had their Twitter account for less than a year. Only 2.5 % opened their account before September 2009, when the number of Korean users started to increase sharply (Oikolab, <http://blog.oiko.cc/post/1139287720/153>).

Table 1. Descriptive Statistics for Participants

Participants		
	Male	Female
Gender	85.60%	14.50%

	(N=106)	(N=18)
Age	32	
Education level (college/postgraduate education)	80.8%	
Account creation within one year	84.80%	

#### 3.3 Measurement

We first collected general information on the participants, including their gender, age, income, educational level, motivation, and job as well as the length of Twitter use and the number of visits/Tweets/retweets/replies. We also collected information on the participants' following-back actions and *unfollow* actions; primary devices they used to access Twitter; and their use of Twitter and other social media. Regarding following-back actions, we extracted three factors with seven items by conducting a maximum likelihood factor analysis with Varimax rotation. Varimax rotation is an analytic criterion for rotation in factor analysis [51]. According to these factors, users follow back because of a) reciprocal communication, Cronbach  $\alpha=.726$ ; b) the partner's active use,  $\alpha=.749$ ; or c) the partner's social influence,  $\alpha=.616$ . We conducted a factor analysis of unfollow actions by using the same method and extracted four factors. According to these factors, users *unfollow* because of a) the use as personal channels,  $\alpha=.792$ ; b) discrepancies of political/social views,  $\alpha=.610$ ; or c) for calling followees' attention,  $\alpha=.481$ . Cronbach  $\alpha$  is a coefficient of internal consistency [52].

For the main variables, we measured the participants' attitudes toward socio-communication in the real world and on Twitter and the attitudes of their most trusted followees. For these measurements, we used the interpersonal dominance-submission scale from Burgoon et al. (1998) [37]. Of the items, 12 were measured with a five-point Likert-type scale ranging from 5=strongly agree to 1=strongly disagree. We analyzed these items by conducting a maximum likelihood factor analysis with Varimax rotation (refer to Tables 2 to 4). Based on these results, we omitted two out of the 12 items to enhance internal reliability. Regarding the most trusted followees, we determined the participants' perception of their followees by using 8 items measured with the same type of five-point Likert-type scale and factor analysis above. We extracted one factor—message influence—which was composed of seven items (Table 5).

Table 2. Participants' Communication Attitudes in the Real World

Factor	Items
Influential communicator (Cronbach $\alpha=.822$ , $M=3.32$ )	Opinion leader No skill to lead to conversation (reversed) Winner of argument Expressive conversation Paid attention by others Comfortable conversation Ability to persuade others

Active communicator (Cronbach $\alpha$ =.724, $M$ =3.18)	Leading conversation Speaker rather than listener Following others' conversation (reversed)
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Table 3. Participants' Communication Attitudes on Twitter

Factor	Items
Communication leadership (Cronbach $\alpha$ =.713, $M$ =2.59)	Leading conversation Opinion leader Speaker rather than listener Talkative alone Winner of argument Paid attention by others
Conversation power (Cronbach $\alpha$ =.732, $M$ =3.26)	No influence on others (reversed) No skill to lead to conversation (reversed) Expressive conversation Comfortable conversation Ability to persuade others
Passive attitude ( $M$ =3.82)	Following others' conversation

Table 4. The Most Trusted Followees' Communication Attitudes on Twitter

Factor	Items
Skilled communicator (Cronbach $\alpha$ =.836, $M$ =4.04)	Opinion leader Winner of argument Expressive conversation Paid attention by others Comfortable conversation Ability to persuade others
Passive communicator (Cronbach $\alpha$ =.849, $M$ =2.44)	No influence on others No skill to lead conversation
Dominant speaker (Cronbach $\alpha$ =.741, $M$ =3.82)	Leading conversation Speaker rather than listener Talkative alone

Table 5. Perception of the Most Trusted Followee

Factor	Items
Message influence (Cronbach $\alpha$ =.909, $M$ =3.78)	Socially famous Lots of followers Professional Social influence of the current job A high level of social status Obviously identifiable profile photo Numbers of tweets
Reciprocal connection ( $M$ =3.99)	Following each other

3.4 Coding Process

For the coding, we employed two undergraduate students who performed data-coding independently. They were trained by coding Tweets from one Twitter user. After the test, the coders and the researcher checked the results and established specific standards for confusing cases. Nine coding categories from Naaman et al. (2010) were adjusted considering Korean context [16].

We randomly selected 10 Tweets (excluding replies) for each user. We excluded Tweets by 13 users because of the lack of Tweets. A total of 1,120 Tweets were coded. We did not allow the coders to assign multiple categories to any Tweet. The internal reliability was high for most items (Cohen's kappa=.806).

4. RESULTS

4.1 General Usage

We determined the types of devices (desktop, laptop, and smartphones) typically used by the participants to access the Twitter timeline. The participants were allowed to choose more than one device. As shown in Graph 1, 64.5% of the participants used smartphones, followed by desktop (41.3%) and laptop (27.2%). If the participant used mainly a smartphone to access Twitter, then the user was less likely to use a desktop computer ( $r(146)=-.337, p<.01$ ). As shown in Table 6, there was no correlation between the two mobile devices (laptop and smartphone) and between the two types of computers (laptop and desktop).

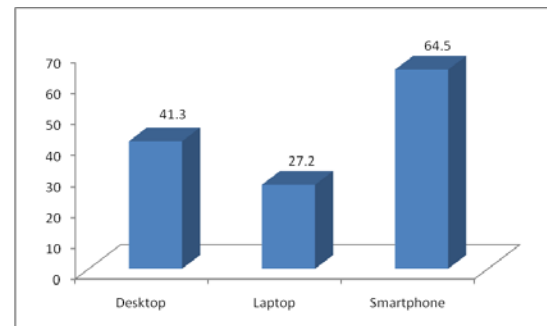


Fig. 1. Primary Device for Accessing Twitter

Table 6. Correlations among Communication Devices for Accessing Twitter

	Laptop	Smartphone
Desktop	-.031	-.337**
Laptop		.035

\*\*  $p<.01$ .

The participants articulated their perception of the importance of other social media relative to Twitter (Table 7). Most of the participants considered Facebook (78.9%), blogs (87.9%), and discussion boards (87.9%) to be important regardless of their Twitter use. By contrast, they were not likely to consider other microblogging services, including me2day (41.7%) and Yozm (38%), to be important. 51.1% of the participants still considered Cyworld to be important.

Table 7. Relative Importance of Other Social Media

Compared with Twitter	Importance (%)	
	Important	Unimportant
Cyworld	51.1	48.9
Facebook	78.9	21.1
Blog	87.9	12.1
m2day	41.7	58.3
Yozm	38	62.0
Discussion boards	87.9	12.1

Regarding their motivation to use Twitter, the participants were more likely to reveal their intention to use Twitter as an information channel ( $M$ =3.36,  $SD$ =.968). That is, they regarded Twitter as an important information resource and a key channel for information distribution. The participants

were not likely to be inspired by others' Twitter use ( $M=2.57$ ,  $SD=.893$ ). The purchase of a smartphone was not a significant determinant of Twitter use ( $M=2.84$ ,  $SD=1.511$ ).

#### 4.2 Disclosure of Personal Information on Profile

As shown in Figure 2 (which shows the participants' disclosure of personal information on the profile page), 73% of the participants disclosed information on their hobbies and interests, followed by information on their job and social status (49%). Regarding the profile image, most (73%) used a photo of themselves; 23.8%, a photo of others; and 3.2%, a less recognizable photo of themselves (Figure 3). Only 28.9% used a nickname or another ID instead of their real name. A majority (41.9%) disclosed their full name in English, 20.9% used Korean, and 9.3% used both (Figure 4).

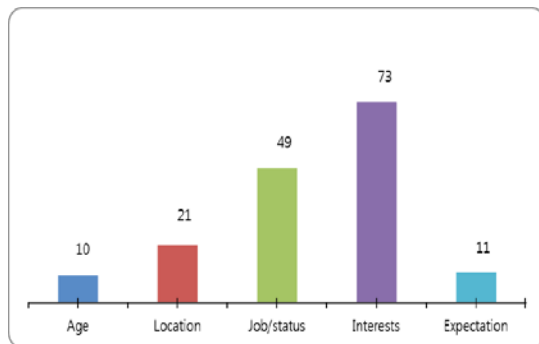


Fig. 2. Personal Information on the Profile (%)

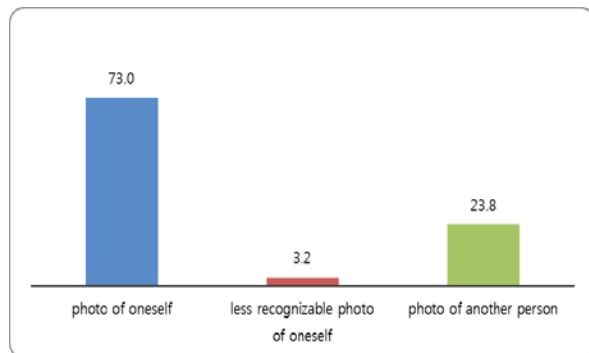


Fig. 3. Profile Photo (%)

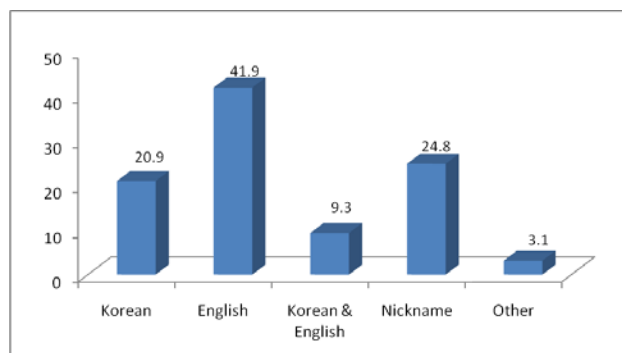


Fig. 4. Name (%)

#### 4.3 Socio-communication attitudes

We determined the participants' attitudes toward socio-communication in the real world (Table 2). For this, we conducted a factor analysis and extracted the following two factors: a) the influential conversationalist ( $\alpha=.822$ ,  $M=3.32$ ) and b) the active communicator ( $\alpha=.724$ ,  $M=3.18$ ). The factors showed mid-range mean scores. That is, the participants located their socio-communication attitudes slightly toward active and influential extremes (which indicate dominant communication styles) than toward passive and uninfluential ones.

In addition, we determined their socio-communication attitudes on Twitter (Table 3) and extracted the following three factors: a) communication leadership ( $\alpha=.713$ ); b) conversation power ( $\alpha=.732$ ); and c) passive attitudes (composed of one item). We calculated the mean scores for each factor: *passive attitudes* provided the highest mean score ( $M=3.82$ ), followed by *conversation power* ( $M=3.26$ ) and *communication leadership* ( $M=2.59$ ). Passive attitudes are directly opposite to active and dominant communication styles, whereas the other two factors reflect those styles.

We determined the participants' perception of socio-communication attitudes of their most trusted followees by conducting a factor analysis, extracting the following three factors: a) the skilled communicator ( $\alpha=.836$ ); b) the passive communicator ( $\alpha=.836$ ); and c) the dominant speaker ( $\alpha=.741$ ). The participants tended to perceive that their most trusted followings were skilled communicators ( $M=4.04$ ) or dominant speakers ( $M=3.82$ ), followed by passive communicators ( $M=2.44$ ). Their assessment of the most trusted followings was indicated by one major factor—message influence ( $\alpha=.909$ ,  $M=3.78$ )—which was composed of seven items (Table 4).

The participants tended to perceive that their most trusted followees were socially famous ( $M=3.32$ ,  $SD=1.533$ ), were professionals ( $M=4.15$ ,  $SD=1.267$ ), and had socially influential jobs ( $M=3.69$ ,  $SD=1.347$ ) and high social status ( $M=3.33$ ,  $SD=1.424$ ). The participants also thought that their most trusted followees were active Twitter users with many followers and Tweets ( $M=4.10$ ,  $SD=1.174$ ). Table 5 presents the measured items. This users' perception of their most trusted followees will contribute to reinforcing dominant attitude of the partners more and more, regardless of the followees' actual influence on communication and even society.

#### 4.4 Analysis of Tweets

We analyzed the content of Tweets collected from the participants' timelines. Their Tweets were classified based on nine themes. As a result, 25.9% of the Tweets were classified as *statement/random thoughts*; 19.0%, as *opinions/complaints*; 17.9%, as *information sharing*; and 17.3%, as *me now*. Figure 5 presents these categories with sample messages. Given that dominant communicators tend to lead conversations and arguments and form public opinion, the results of the content analysis suggest that ordinary Twitter users are more likely to show neutral or passive attitudes. For



example, the largest category—*statement/random thoughts*—reveals that most of the participants posted Tweets about their own thoughts and episodes regardless of whether they received a response. The *information sharing* category (which refers to active communication actions such as the provision and delivery of information) was the third largest category, which can be explained by Twitter's important role as a channel for distributing information.

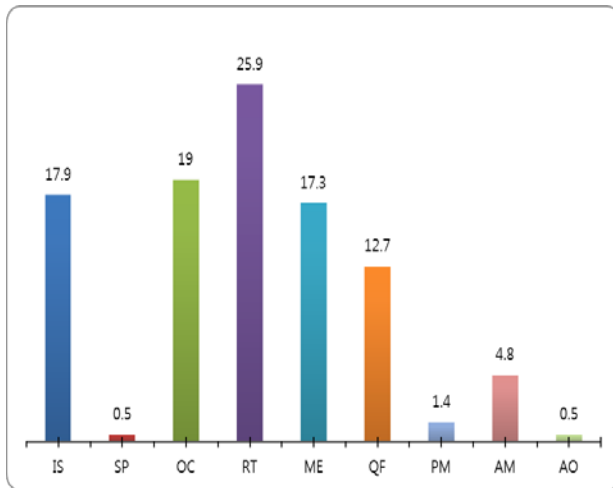


Fig. 5. Types of Tweets by Korean Users (%)

\* IS: information-sharing; SP: self-promotion; OC: opinions/complaints; RT: statements/random-thoughts; ME: me-now; QF: questions-to-followers; PM: presence-maintenance; AM: anecdote-me; AO: anecdote-others.

## 5. DISCUSSION

### 5.1 General Use

In this study, we investigated general Twitter use in Korea. The social media environment has been changing rapidly, and thus, there is a need for a better understanding of the ways in which new communication technologies could be adopted. As Rice et al. (1992) [34] suggested, communication styles indicate how new media are adopted, used, and evaluated. For this, we not only examined Twitter use by Koreans but also determined Twitter users' perception of their own and their followees' communication styles on Twitter.

First, the results of this study suggest that Korean Twitter users who tend to primarily use smartphones to access Twitter are less likely to use fixed devices such as desktop computers and vice versa, suggesting the existence of two types of Twitter users: mobile users (e.g., salespersons) and *fixed* users (those who stay put most of the time). The dramatic growth of Twitter use is expected to continue because of the increasing availability of mobile communication tools such as smartphones and tablet computers [2].

Regarding the coexisting social media, the results demonstrated that media users tend to adopt a wide variety of channels to deliver their opinions and personal episodes and communicate with others rather than using a couple of primary media. Each channel has an advantage over another

in communication. Twitter makes it easier for users to maintain a wide range of information resources. Compared with Twitter, Facebook may be better for socializing with mutually connected friends. Blogs are designed for reporting well-written arguments and episodes. Discussion boards enable users to discuss with members who share similar interests. Thus, each channel is specialized and compatible with other channels, and for users, the use of multiple channels can facilitate communication in various contexts.

By contrast, the participants did not consider domestic microblogging services (e.g., me2day and Yozm) to be important media, indicating that, given the same type of social media channel, users are more likely to pay attention to the primary channel than to others. Just as Twitter users are less likely to use other microblogging services, me2day and Yozm users may be less likely to use Twitter. These results suggest that individuals willingly adopt multiple media if they can obtain unique benefits from each. However, if benefits overlap, they may willingly choose only one channel and be loyal to it.

In this regard, noteworthy is the participants' perception of Cyworld. Cyworld, despite its recent stagnation, has remained meaningful as a social networking site for communicating with friends, and Facebook, despite its rapid growth in Korea, has yet to overtake Cyworld. This result is consistent with the findings of Ko et al. (2010) [44], who found Cyworld to be the most influential social networking site in Korea, despite the substantial social effect of global social media on Korean society. Given the complexity of Cyworld, the current market status of Cyworld indicates that it may be a mature "killer application" (which refers to a web service that most users employ and induces critical changes in the Internet landscape during a certain period). Similar to the email, more than 70% of all Koreans have an account, and its usefulness remains valid regardless of the amount of time spent on Cyworld by users.

### 5.2 Disclosure of Personal Information on Twitter and Communication Purposes

Even though they were not required to do so, the participants tended to disclose personal information on their Twitter profile, such as their age, location, hobbies/personal interests, and job/social status. Such self-disclosed information on social media sites implies the user's communication purpose and can initiate and facilitate interactions and relationships among users [22, 45]. For example, the participants were most likely to disclose information on their hobbies and interests, followed by their job and social status. Such information allows one to provide other users with a better understanding of oneself and can empower one to shape public opinion, lead the debate, and take a dominant position in certain topics of conversation by employing one's expertise. In addition, the participants tended to upload a photo of themselves and use real names, which revealed their identity to other users. This straightforward self-introduction may enhance the authenticity of the user and provide him or her with a high

level of social presence [43, 46], which in turn can increase the influence of the user's Tweets.

Traditional and well-established CMC theories such as social presence and hyperpersonal theories are based mainly on the assumption that CMC communicators are partially or totally anonymous because of the characteristics of *mediated* communication [46, 47]. However, new social media, including Twitter, tend to encourage users to disclose themselves and identify their online self with their offline one. In this study, most of the participants disclosed their personal information and social status. The participants' positive attitudes may be due to the tendency to rely on their offline social influence for their online activity or to their acceptance of newer media. Future research accordingly should address what role the disclosure of personal information plays in the modified CMC environment.

### 5.3 Self-Reported Communication Attitudes on Twitter and in the Real World

In this study, we adopted a scale for measuring the dominant communication style. The scale included the communicator's conversation leadership, persuasive arguments, influence on others' opinions, and conversation skill, among others. The results indicate that the participants tended to position themselves as slightly passive communicators. Such attitudes toward socio-communication on Twitter contrasted with those in the real world (slightly active attitudes), which suggests that most users tend to play a communication role as a listener than a speaker on Twitter. This result is consistent with the findings of previous studies suggesting that a small number of Twitter users provide information and social issues and lead public opinion [15, 16].

### 5.4 Perception of the Most Trusted Followees' Communication Attitudes

Face-to-face communicators are more likely to interact in specific communication contexts than Twitter communicators because on Twitter, communication contexts are easily collapsed with the interruption of other users: Twitter users access and engage themselves in others' timeline—a webpage to show one's Twitter messages—without direct subscription or online relationship [22]. The easily collapsed communication context encourages Twitter users to develop imagined audiences due to the necessity of the specific audience in order to clarify communication context [24]. In this regard, whom the users perceive as their primary communication partners has considerable influence on their communication strategies and attitudes. Further, Twitter users' followees, whom they follow voluntarily, are more likely to influence their communication attitudes than their followers, who are composed mostly of nonvoluntary connections. Therefore, Twitter users' perception of their own and their influential followees' communication styles can provide an important clue to understanding the users' socio-communication attitudes on Twitter.

Regarding Twitter users' perception of their most trusted followees' attitudes, the results demonstrate that the

participants tended to perceive their most trusted followees as skilled and dominant communicators, which is inconsistent with the results for the participants' perception of their own attitudes. In addition, the participants tended to perceive that their most trusted followees were socially famous and had socially influential jobs and high social status and that these followees were active Twitter users with many followers and Tweets. This perception indicates that Twitter users may have a stereotyped image of their followees (except for those with whom they have preexisting offline relationships) and that such an image is grounded on the stereotype of the trendsetter in the real world.

As Burgoon et al. (1998) found [37], dominant as well as passive communication attitude depend on given communication contexts, including partners' condition. Once users perceive important communication partners as dominant communicators, they tend to show relatively passive communication attitudes. When faced with dominant communication partners, actors can show either dominant or passive attitudes toward their communication partners depending on their personality [43]. In this study, however, the results indicate that twitter users' perception of their most trusted followees' communication styles affects users' communication styles on Twitter and as a result, it leads to relatively passive attitudes, compared to their actual styles or their trustful followees'. Given asymmetrical communication, a small number of dominant communicators on Twitter [16] can affect a large number of Twitter users taking relatively passive communication attitude, which is supported by Power law effect that refers to dominant communication by a small portion of a total population under the concept of "the rich get richer and the poor get poorer" [36].

With the rapid growth of Twitter population, Twitter users are forming their own communication styles facing dominant Twitter partners apart from their actual styles. If the image from the existing users' timeline is stereotyped and perceived as dominant communicators, it would easily happen that the new comers take relatively passive attitude. If do so, Twitter would be improved for public relations or information channels by influentials while the majority reduce their voices on Twitter. The initial liberal participation can be withdrawn, passive information receivers can be increase, and the influence dominant communicators can be augmented more and more. Eventually, the current expectation as an alternative medium to Twitter may come to an end soon and it may be necessary to monitor who become influentials on Twitter among the ordinary users that this study does not deal with yet and will be a future research topic.

### 5.5 Types of Tweets

In this study, we conducted a content analysis of Tweets to explore users' dominant and passive communication styles. Most of the participants' Tweets belonged to the *statements/random thoughts* category, which involves little need for social interaction, followed by the *opinions/complaints* and *me now* categories. These results slightly differ from the previous findings [16] that found the self-oriented *me now* category to



be the most dominant one in the United States context. Both *statements/random thoughts* and *me now* categories are less likely to involve actors with social interactions, and dissimilarly, the latter is more self-oriented than the former. Through the results, we can say that ordinary Twitter users are more likely to create messages for themselves than for social interaction and are thus not likely to be at the center of conversation on Twitter. Most of the Tweets were monologic and self-oriented than relation-oriented and dialogic.

On the other hand, as mentioned earlier, Twitter is an important information channel through which trusted followees convey information, although most of the ordinary Twitter users tend to focus on creating self-oriented and monologic messages and tend to participate passively in broadcasting information. The results for the participant's perception of dominant followees and their message influence are consistent with the power law effect, that is, a small number of active users account for a large portion of all Tweets [16]. In fact, most users participate in broadcasting information in a relatively passive manner by using retweets [21].

We noted the watered-down self-oriented tendency in this study, compared with the previous findings. *Statements/random thoughts* category symbolizes purpose-veiled messages, while *me now* category represents clearly self-oriented ones. In this point, we suggest that group-oriented values and self-effacing attitude in Korean collectivistic culture [48] discourage users to create self-oriented messages and instead, Korean users adopt indirect way to express themselves. Self-oriented messages would be more created and more directly presented in individualistic cultures where individuals as independent entities are valued and inspiring self-esteem is an important part of education.

Further, Korean culture has typically been characterized as a high-context culture with an indirect communication style, contrasting a low-context culture with a direct communication style [49]. Messages with veiled subjects and/or purposes (i.e., *statements/random thoughts*) are comparable with the indirect communication style, while self-oriented messages (i.e., *me now*) are closer to the direct communication style. However, the present study provides no cross-cultural comparison, and therefore, we simply suggest that various cultural factors may influence Twitter use and leave this topic to future research.

## 6. CONCLUSION

In this study, we examined the ways in which Twitter is used; how Twitter users perceive their own attitudes toward socio-communication as well as those of their most trusted followees; and the types of Tweets sent by users. The results predict the continued growth of Twitter use with the increasing availability of mobile devices and suggest the coexistence of multiple communication channels. In addition, the participants tended to define the dominant communicators and adjust their communication styles based on their perception of followees. Although anyone can be a dominant communicator on Twitter, most tend to avoid playing a

dominant role on Twitter. Twitter users' exaggerated image of their influential partners (i.e., dominant communicators) may foster relatively passive communication attitudes among ordinary Twitter users.

This study has a sampling limitation. Despite the random sampling process, males accounted for a vast majority of the sample. However, Lee and Nai (2010) also explored Korean Twitter users and provided similar results, and thus, the male-dominant Twitter population may be a distinctive characteristic of Twitter in Korea [30]. In addition, online surveys and social media research often encounter another problem [50]. Despite a random sampling process, heavy reliance on voluntary participation and the absence of a researcher can result in biased samples. Additionally, the process of data collection is associated with the lack of sample size. Due to these limitations, we acknowledge that the results are difficult to be generalized. However, this study contributes to the extension of literature on communication attitude in Twitter with the local context and empirical data. Most of the previous studies have employed content analysis or interviews, not surveys. This demonstrates the difficulty in obtaining random samples for Twitter research. Thus, for more reliable results, future Twitter research should develop a better sampling process. Finally, this study suggests a cross-cultural or a cross-national study comparing between the majority of Twitter users who belong to English-speaking countries and those who do not, considering the locality of Twitter use.

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