WHY DO PEOPLE RETWEET A TWEET?:
ALTRUISTIC, EGOISTIC, AND RECIPROCITY MOTIVATIONS
FOR RETWEETING

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The present study investigated underlying motivations of Twitter users for retweeting with a presumption that retweeting is a prosocial behaviour. Accordingly, retweeting were predicted to occur when an individual was motivated for prosocial reasons. In this study, prosocial motivations were classified into three categories of egoistic, altruistic, and reciprocity motivations. In addition, behavioural intention was taken as part of predicting variables of actual retweeting behavior and was investigated with other motivation variables. Participants were actual Twitter users who were recruited on Twitter, and data collection was done through an online survey. The results showed that altruistic motivation among three prosocial motivations could predict actual retweeting behaviour through behavioural intention. In addition, the differential effects of reciprocity motivation was found to vary depending on the sizes of the followers and the followees.

Key words: Twitter, retweeting, prosocial behaviour, psychological motivations

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Twitter, a 140-character microblogging social networking service, has garnered attention among communication researchers and practitioners due to its considerable information diffusion potentiality (Rheingold, 2012; Savage, 2011; Shirky, 2011). The powerful status of Twitter as an information dissemination channel is related to the structure of the Twitter network and the feature that allows users to retweet.

Twitter users are connected with each other as a follower and a followee. Users who are registered as a follower can see messages, which are called tweets, that are sent by a followee. This relationship between two Twitter users in a form of a pair, however, is extended into a larger, linked network as the Twitter platform allows any user to follow other users. Most of the users choose to make their postings and networks visible to the public. Some of these postings are also tweets, and they can be forwarded on other twitter users’ sites. This message forwarding on Twitter is done through the feature of ‘retweet.’

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The ever-interlinked matrix of network and the feature of retweet make the diffusion of information on the Twitter much more possible in a simpler and easier way.

Twitter users value retweeting as a tool to pass along information and reach out to larger public. A user retweets a tweet if it is perceived as valuable information worth sharing with others (Cha, Haddadi, Benevenuto, & Gummadi, 2010). Studies indeed found that Twitter users frequently applied retweeting feature to spread and share information with others. For instance, tweets with URLs and hashtags were found to be more often retweeted (Suh, Hong, Pirolli, & Chi, 2010), and tweets containing valuable information were more likely to be retweeted and delivered to others (Boyd, Golder, & Lotan, 2010). Recuero, Araujo, and Zago (2011) pointed out that retweeting costs little to construct a message, which was believed to be valuable enough to share with others, compared to having to formulate a new message by oneself. The cost-efficiency might be an explanation for retweet function’s popularity.

Several studies investigated on reasons for retweeting and found them to be for: communication purpose (i.e., initiating a conversation; Boyd et al., 2010), social relationship maintenance (Park & Jeong, 2011; Recuero et al., 2011), self-expression (Lee, Kim, & Kim, 2012), obtaining/updating information (Hwang & Shim, 2010) and others. Complementing these reviews, this study proposes another perspective: retweeting behavior is driven by prosocial motivations. Although the previous studies have provided several types of motivations for retweeting, prosocial motivations has not been fully investigated. Some studies surveyed why a user retweeted (Hwang & Shim, 2010; Park & Jeong, 2011; Lee et al., 2012) and found some close observation by stating that this behavior was triggered by psychological motivations. Yet, the prosocial motivations have not been fully investigated as the explanations for retweeting. By focusing on prosocial motivations for retweeting this study contributes to the body of knowledge on a social networking service user’s behavior, engaging in the chain of relaying information and participating in powerful, wide, and rapid information diffusion.

**Retweeting and Prosocial Motivations**

Retweeting has been studied in several studies as the underlying motivation for retweeting behavior among Twitter users. For this, some researchers applied an approach of using advanced statistics and identified particular features among retweeted messages (Macskassy & Michelson, 2011; Suh et al., 2010). Suh et al. (2010) collected 74,000 tweets and identified the elements which were associated with more retweetability: tweets which contained URLs and hashtags were more likely to be retweeted; tweets written by a user with a greater number of followers and followees and a long history of using Twitter account was more likely to be retweeted. Macskassy and Michelson (2011) also analysed over 768,000 tweets and tested different models for the reasons a user retweeted a message: the general model found that a user randomly retweeted what they saw before; the recent communication model posited that the most recently communicated users’ tweets were retweeted; the content based model proposed that retweet containing a message related to
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a user’s interests was more likely to be retweeted; and the profile model suggested that a user was most likely to retweet the ones from those with whom they share similar profiles. The results found that the most powerful model was the profile-model indicating that users tended to retweet a message especially when they perceive the group they participated in was more homogenous. However, all models turned out to be significant only at certain times, which implied users’ retweeting behaviours were drawn out for a range of different reasons.

Others used a survey method and investigated psychological motivations for retweeting. Several studies identified different factors (Boyd et al., 2010; Lee et al., 2012; Park & Jeong, 2011; Recuero et al., 2011). Firstly, conversation-engagement was identified as the motivation. Boyd et al. (2010) suggested the practice of retweeting was the way to start a conversation with others. Retweeting enabled a user to initiate a conversation and stay engaged with other users. Secondly, social relationship was found to be the motivational factor. Park and Jeong (2011) used factors analysis and discovered social relationship building/maintenance was what drove users to retweet. In other words, users retweeted a message for more social interactions and more intimacy with people on their network, and for more influence on their followers. Other factors included information sharing (i.e., let other users know important information), responsiveness (i.e., be able to have immediate feedbacks), and emotional propagation (i.e., share public indignation). Lee et al. (2012) found similar outcomes; information sharing, social interaction building, and self-expression motivated users to retweet. Furthermore, Recuero et al. (2011) focused on social relation building factor as the retweeting behaviour motivation and revealed that retweeting was used as a tool to obtain social capital. They pointed out users retweeted a message in their social network, and by doing so, the users could gather social resources they could rely on. In particular, retweeting was perceived as a more efficient way to develop social capital since retweeting cost less for obtaining valuable information in comparison to searching for new ones from scratch.

As seen from the reviews above, while previous studies have provided some responses to the questions why Twitter users retweeted a message, this study supplied another perspective. Retweeting behaviour could be triggered by prosocial motivations.

Prosocial behaviour referred to behaviours of helping others or society as a whole, including offering help, providing advice, donating money, or spending time on behalf of others in need (Dovidio, 1984). Prosocial behaviours were found in cyberspace as well. People often provided useful information for software in a usenet, willingly post film reviews (i.e., www.IMDB.com) or book reviews (i.e., www.amazon.com), and even composed an article on knowledge database (i.e., Wikipedia).

Literature on online prosocial behaviors found that people performed prosocial behaviors for a variety of reasons. Studies that investigated the motivation of contributors to Wikipedia (Nov, 2007; Peddibhotla & Subramani, 2007; Rafaeli & Ariel, 2008; Schroer & Hertel, 2009) found that Wikipedians’ motivations included expressing altruism (Nov, 2007), self-expression, personal development, utilitarian motives, altruism, reciprocity, and others (Peddibhotla & Subramani, 2007).

Several studies on the rationale for retweeting mentioned that psychological
motivations closely related to prosocial ones prompted the retweeting behaviour. Recuero and others (2011) pointed out that retweet users perceived their retweeting behavior benefited the social network as a whole and some particular users. Park and Jeong (2011) and Lee and others (2012) also found that users retweeted because they thought retweeting was equal to making some meaningful contribution to the community they belonged to and/or other users.

In spite of these findings that discovered the relationship between psychological motives and the actual behavior of retweeting, the prosocial motivations as causal factors for retweeting behavior has not been thoroughly examined. By extending the investigative approaches from prosocial motivations, this study attempted to further the understanding on the retweeting behavior on a social networking service. In particular, by applying three dimensions of prosocial motivations, the authors of this study looked into the significance of prosocial motivations as the predictors for the retweeting behaviour.

Three dimensions of prosocial motivations selected for this study were egoistic, altruistic, and reciprocity motivations. Egoistic motivation proposed that people were by and large self-oriented, and, thus, prosocial behaviors served some purposes ultimately for the self (Carlo, Eisenberg, Troyer, Switzer, & Speer, 1991). Some social psychologists argued against this self-oriented motivation for prosocial behavior and claimed that people sometimes exhibited prosocial behavior with genuine concerns for others. Batson and his colleagues called this empathy-based motivation (Batson, 1987; Batson et al., 1988). According to the empathy-based motivation theory, emotional feelings for others could motivate people to help others out of a genuine concern for others’ welfare. Empathy-based motivation implied that the altruistic motivation existed independently of egotism (Cialdini et al., 1987). Still, the different views on the debate regarding egotism and altruism acknowledged that a psychological motivation guided people’s prosocial behaviours through a variety of mechanisms, whether that was out of altruistic or egoistic motives.

Lastly, reciprocity motivation was included in the investigation for this study based on the empirical findings from other research (Lakhani & von Hippel, 2003; Lee et al., 2012; Recuero et al., 2011; Wasko & Faraj, 2000). According to these studies, reciprocity functioned as one of the interactive principles in online communities. Users were reported to have received help from other users and, as a result, gave back to others, and they expected reciprocity to be practiced in their online community (Lakhani & von Hippel, 2003). Users wanted to share their knowledge with other people because they thought it was useful to others and believed that participation could positively develop their communities (Wasko & Faraj, 2000).

Furthermore, a causal model was adopted in order to explain the relationship between the causes and the actual behaviour. The model included the behavioural intention and the actual behaviour to closely examine the relationship between causal factors (motivations) and the behaviour (retweeting). Behavioural intention has been understood as an immediate antecedent to an actual behavior (Ajzen & Fishbein, 1980). By integrating behavioural intention in the model, this study brought out a sophisticated understanding on relationships between prosocial motivations and corresponding behaviors. In more detail, this study
posited that egoistic, altruistic, and reciprocity motivations were the preceding elements of behavioural intention, which would significantly raise the occurrence rate of an actual act of retweeting. It was also assumed that the three psychological motivations would be significantly correlated. These expectations were set up in Research Question (RQ) 1 and hypotheses as follows:

**RQ1:** Can prosocial motivations explain the retweeing behavior?

**Hypothesis 1:** Egoistic motivation for retweeting positively predicts behavioural intention of retweeting.

**Hypothesis 2:** altruistic motivation for retweeting positively predicts behavioural intention of retweeting.

**Hypothesis 3:** reciprocity motivation for retweeting positively predicts behavioural intention of retweeting.

**Hypothesis 4:** behavioural intention of retweeting positively predicts actual act of retweeting.

**Hypothesis 5:** three prosocial motivations of retweeting, egoistic, altruistic, and reciprocity motivations, are significantly correlated to each other.

These hypotheses are illustrated in the following Fig. 1.

In addition, reflecting the features of retweeting, the structural elements of retweeting were considered. The frequency of retweeting and the size of followers and followees were examined to test whether those elements produced differential effects. The frequency of retweeting has been considered given the possibility that higher number of actual retweeting may have been caused by habitual behavior of retweeting by a user who more often retweeted than other users. The number of followees and followers were examined given that a user with a wider network could reach a greater number of users, and the user would retweet a message to make more influence on a larger number of people in their network (Hwang & Shim, 2010). Meanwhile, a user who had more followers were expected to be exposed to more messages and had higher likelihood to receive a message which the user found to be valuable enough to retweet (Suh et al., 2010).

Based on these arguments, RQ 2 was established to examine whether those structural features made any significant difference in the model in RQ 1. Therefore, RQ 2 was set as follows:

**RQ 2:** How can the supposed model be differentiated by the volume of retweeting, the number of followers, and the number of followees?

![Fig. 1. Psychological motivations for retweet.](image-url)
METHOD

Measures

Prosocial motivations. In this study, independent variables were egoistic, altruistic, and reciprocity motivations. Egoistic motivation was a self-oriented motivation in that the essential concern was benefiting the self. One question taken from a previous study (Lampel & Bhalla, 2007; Nov, 2007) was asked, “Retweeting is useful in regard to my career prospects, such as school life or job (on a 7-point scale, with 1 = extremely disagree and 7 = extremely agree).”

Altruistic motivation (am) referred to other-oriented motivation in which the ultimate goal was to benefit others, not the self. In this study, three revised questions from a previous study (Wasko & Faraj, 2000) were asked: “I think that my retweeting will be helpful to the Twitter community (am1),” “I think that my retweeting will be helpful to the members in Twitter community (am 2),” and “I think that my retweeting is the means to help others (am 3)” (on a 7-point scale, with 1 = extremely disagree and 7 = extremely agree).

Reciprocity (rc) referred to mutual exchange of favors. In a reference to previous studies (i.e., Lakhani & von Hippel, 2003), reciprocity motivation was measured with three questions relating to mutual exchange, a sense of duty to others, and a sense of debt to others. These questions were: “I retweet because I will receive a retweet message from others later if I retweet a message this time (rc1),” “I retweet because it is what to do for others on Twitter (rc2),” and “I retweet because I received retweeted messages before (rc3),” (on a 7-point scale, with 1 = extremely unlikely and 7 = extremely likely).

Behavioural intention. Behavioural intention determined whether to perform (or to not perform) a behavior and was the immediate determinant of an action. For this study, behavioral intention was measured by the likelihood of respondents retweeting on Twitter. A single question was used to measure the behavioural intention: “I intend to retweet on the Twitter from now on” (on a 7-point scale, with 1 = extremely unlikely and 7 = extremely likely).

Actual acts of retweeting. The actual behavior of retweeting was measured by the average number of retweeted messages in a month. The retweeting frequency data was obtained from a website that showed actual statistics for Twitter usages (www.tweetstats.com). The number of retweeted messages of the participants whose Twitter IDs were voluntarily provided via online survey were retrieved to calculate the frequency of their retweeting. For some participants who did not offer to reveal their Twitter IDs and for those users whose accounts were protected from retrieving of Twitter usage information, we substituted the retweet numbers with their self-reported answers for the average number of retweeting1.

Research Participants

Korean Twitter user accounts were accessed on Korean Twitter application at www.Koreantweeters.com. We sent a request for research participation randomly to 2,000 users, out of which, 329 users agreed to participate in the study.

Data Collection

The authors randomly sent the Twitter message, to about 2,000 Twitter users. Twitter accounts were retrieved from the Korean Twitter directory. For 10 days, from June 13 to June 22 in 2012, the authors sent 100 DMs everyday twice per day. In the message, the URL was attached so that a participant could directly access the website to take the online survey.

Among the 329 total respondents, six participants were excluded in the analysis due to the incompleteness of survey questions. Thus, the final sample size was 323.

The 323 respondents consisted of 125 females (39.6%) and 191 males (60.4%). Education backgrounds of the participants were 19 high school graduates (5.9%), 83 currently enrolled college students (25.7%), 125 college graduates (38.7%), and 89 with or higher than a master’s degree (27.6%). Descriptive statistics of the observed variables were reported in Table 1.

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1 There were 20 cases whose retweeting frequency data could not be obtained, so they were treated as missing values. For the Structural Equation Modelling (SEM) analysis, missing data were imputed in stochastic regression imputation.
Results

Data Preparation and Descriptions

Prior to structural modeling analyses, individual variables were checked for normal distribution. Except for two variables, behavioural intention and actual behavior, all other variables satisfied normality assumption. Both of the exceptional variables showed a highly skewed distribution. To correct normality, data were replaced. For behavioural intention, exponential values were used; and for actual behavior, logarithms were used. In the meantime, missing data was imputed by the methods of listwise in Amos 18.0. Correlations between the variables are shown in Table 2.

Measurement Model

The model in Fig. 1 was analyzed using Structural Equation Modeling. After running statistical analysis, measurement reliability and validity were checked. For measurement reliability, standardized regression weights of the observed variables toward its corresponding latent variable were examined. All values were greater than or approaching 0.70, which indicated acceptable construct reliability. Standardized regression weight was .788 (am 1), .877 (am 2), .774 (am 3), .727 (rc 1), .664 (rc 2), and .744 (rc 3).

Construct validity and convergent validity were calculated to assess statistical validity of measurement. For construct validity, the coefficients of construct validity were calculated (Fornell & Larcker, 1981). It turned out that the coefficient of altruistic motivation was .776, and reciprocity motivation was .475. With the standard that the coefficients were acceptable if the values were greater .50., altruistic motivation indicated that the associated observed variables measured altruistic motivation properly. Construct validity coefficients of reciprocity motivation did not show but approached the acceptable level.

In addition, convergent validity was checked by using the formula by Fornell and Larcker (1981). As instructed, average variance extracted (AVE) was calculated to examine
how agreeably each latent variables were differentiated from each other. Table 3 showed altruistic motivation achieved convergent validity meanwhile reciprocity motivation showed partial convergent validity.

### Table 2. Correlation between Observed Variables

|       | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. Egoistic motivation | 1   |     |     |     |     |     |     |     |     |
| 2. Altruistic motivation1 | .38** | 1   |     |     |     |     |     |     |     |
| 3. Altruistic motivation2 | .39** | .71** | 1   |     |     |     |     |     |     |
| 4. Altruistic motivation3 | .38** | .59** | .67** | 1   |     |     |     |     |     |
| 5. Reciprocity1 | .25** | .34** | .44** | .42** | 1   |     |     |     |     |
| 6. Reciprocity2 | .16** | .20** | .23** | .30** | .45** | 1   |     |     |     |
| 7. Reciprocity3 | .20** | .16** | .29** | .29** | .53** | .55** | 1   |     |     |
| 8. Behavioural intention | .17** | .33** | .33** | .38** | .15** | .02 | .02 | 1   |     |
| 9. Actual use* | .06 | .12* | .16** | .17** | .10 | .10 | .08 | .11 | 1   |

Note. *p < .05, **p < .01.

* N = 313. N of other variables is 323.

### Table 3. Index of Convergent Validity

| Egoistic motivation | Altruistic motivation | Reciprocity motivation |
|---------------------|-----------------------|------------------------|
| Egoistic motivation | 1                     |                        |
| Altruistic motivation | .213                 | .539                   |
| Reciprocity motivation | .082                 | .264                   | .232                   |

Prosocial Motivations to Retweet

RQ1 addressesd whether prosocial motivations could predict actual acts of retweeting, and the present study examined a set of 5 hypotheses testing relationships among prosocial motivations, behavioural intention, and actual acts of retweeting.

The results, first of all, revealed that the model was identified to be the proper one, and the fit index was deemed reasonable ($\chi^2 = 114.483, df = 54, p < .001, N = 303; CFI = .931; RMSEA = .061$). It meant that our causal model fits the data reasonably well for predicting the retweeting behavior.

Secondly, every path for testing hypotheses appeared significant except the path from egoistic motivation to behavioural intention (See Fig. 2). More specifically, altruistic motivation showed positive relation to behavioural intention (H2 is supported). Reciprocity motivation showed significant, negative relation to behavioural intention (H3 is partially
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The path from egoistic motivation to behavioural intention, however, was not significant (H1 is not supported). Finally, the path from behavioural intention to actual behavior turned out to be significant (H4 is supported).

Finally, significant correlations among three prosocial motivations were tested, and the results showed the correlations between egoistic and reciprocity motivations were all significant and positive as well. Correlation between egoistic and reciprocity motivations was .29, the correlation between egoistic and altruistic motivations was .46, and the correlation between altruistic and reciprocity motivations was .51, with all ps < .01 (H5 is supported). The results including the path estimates were reported in Fig. 2.

**Differential Effects by the Volume of Retweets and the Size of Followees and Followers**

We furthered the investigation into a deeper understanding on how the prosocial motivations could predict actual behavior of retweeting. In particular, the differential effects by the varying volume of retweeting, the number of followees, and the number of followers were examined.

Analytical scheme was to examine group differences by multi-group analysis provided by Amos 18.0. The study sample was split into two groups according to the volume of retweets, the number of followees, and the number of followers. Multi-group analysis was performed three times with the variables alternated.

To test the differential effect of the volume of retweeting, sample was split into two groups by using the median of the frequency of retweeting. The group whose average frequency of retweeting was equal to or more than 5 retweets was categorized as the heavy-user group (n = 128, 42%), and the group whose average frequency of retweet was less than 5 was designated as the light-user group (n = 175, 58%).

The results of multi-group analysis showed that the model did not have enough power to differentiate these two groups. The volume of retweeting did not make any meaningful difference on all paths in the model: egoistic motivation to behavioural intention ($\chi^2 = 2.493$, $p = .477$), altruistic motivation to behavioural intention ($\chi^2 = 7.234$, $p = .065$), reciprocity

**Fig. 2.** Analysis results from structural equation modelling. *Note: * $p < .05$, **$p < .01$. The values are standardized path coefficients.
to behavioural intention ($\chi^2 = 5.247, p = .155$), and behavioural intention to actual retweeting ($\chi^2 = 6.906, p = .075$). It meant that there was no effect of the volume of retweets, and the two groups were not differentiated by the amount of retweeting.

To test the effect of the number of followees, the median-split method was used to make two groups of high and low group. The median was 2, and the low group consisted of 137 users (43.6%) whose followees were less than or equal to 0; meanwhile, the high group consisted of 177 users (54.8%) with 2 or more followees.

The results of multi-group analysis showed that there was a significant difference between two models from two different groups (model evaluation criteria for configurual invariance, $\chi^2 = 91.717, df = 50, p < .01$, TLI = .911, CFI = .951, RMSEA = .052; model evaluation criteria for scalar invariance, $\chi^2 = 92.315, df = 51, p < .01$, TLI = .923, CFI = .954, RMSEA = .048; Hong, Malik, & Lee, 2003). Since two models turned out to be significantly different, paths were examined to be compared with each other. Table 4 summarized the results: firstly, the path from altruistic motivation to behavioral intention and the path from behaviorial intention to actual use were significant. These results indicated that the greater altruistic motivation and the greater behavioral intention, the more likely a user was to actually retweet. These results replicated the earlier results to test RQ1. However, the path from reciprocity motivation to behavioral intention was significant only in the lighter-user group; the negative relation from reciprocity motivation to behavioral intention was only true with the users with less followees and that the effect of reciprocity motivation was not found significant among the users with more followees.

Finally, the number of followers was considered. Two groups were composed according to the median-split method. The median was 325 and, therefore, two groups were constructed: the low group of less followers, consisting of 157 (49.8%) users having less than or equal to 325 followers; and the high group consisting of 158 users (50.2%) having more than or equal to 325 followers.

Table 4. Path Coefficients in the Multi-group Analyses

| Followees | Follower | Egoistic Motivation → Behavioral Intention | Altruistic Motivation → Behavioral Intention | Reciprocity Motivation → Behavioral Intention | Behavioral Intention → Actual Use |
|-----------|---------|------------------------------------------|---------------------------------------------|---------------------------------------------|----------------------------------|
| High group | 6.533 | -.19.294 | 166.602 | -44.547 | .001 |
| Low group  | (.030) | (.073) | (.506)** | (.158) | (.330)** |
| High group | 3.155 | .10754 | 190.074 | -63.079 | (.330)** |
| Low group  | (.013) | (.073) | (.506)** | (.158) | (.330)** |

Note. * $p < .05$, ** $p < .01$.
The values in the cells are unstandardized path coefficients and their SE was in parentheses.
The group differential was analysed, and the results indicated there existed a significant difference between these two groups (model evaluation criteria for configural invariance, $\chi^2 = 112.82$, $df = 50$, $p < .01$, TLI = .874, CFI = .930, RMSEA = .063; model evaluation criteria for scalar invariance, $\chi^2=113.334$, $df = 51$, $p < .01$, TLI = .889, CFI = .933, RMSEA = .060; Hong et al., 2003). After the results were out, the paths were examined. As Table 4 shows, the significant paths were the one from altruistic motivation to behavioral intention and the one from behavioral intention to actual behavior. Those paths were pointed out as the significant ones in the earlier model for RQ 1. The path from reciprocity motivation to behavioral intention, however, exhibited significant difference between these groups. The negative effect of reciprocity motivation to behavioral intention appeared significant only with the high group; The low group did not reveal the path as significant.

**Discussion**

The study tested the causal factors prompting retweeting behaviour among Twitter users even when there was no apparent benefit to themselves. The study examined three types of motivations—egoistic, altruistic, and reciprocity motivation. The results revealed that two prosocial motivations, altruistic and reciprocity, were related to behavioral intention for retweeting and indirectly predicted the actual retweeting behavior via behavioural intention. In the theoretical model of this study, firstly, the path from altruistic motivation to behavioral intention was found to be significant, and behavioral intention was also positively related to actual behavior. It meant the more altruistically motivated the person was, the greater behavioral intention to retweet was and, finally, more actual retweeting. Meanwhile, reciprocity motivation predicted behavioral intention in a negative way. In other words, the reciprocity motivation does not encourage people to retweet a message but suppresses their intention.

The relationships in the model, however, was differentiated by the number of followers and followees. A user with more followers is prompted by altruistic motivation and less motivated by principle of reciprocity. In the mean time, a user with less followees is driven by altruistic motivation but is resistant to reciprocity principle. These findings are interesting, since the differential effects caused by the volume of followers and followees have rarely been revealed, even though previous research noticed the potential effect of sizes the followers and followees (i.e., Suh et al., 2010).

The finding that users with a greater number of followers and less number of followees were not motivated by reciprocity motivation but driven by altruistic motivation, implicates that users who have more audiences, as indicated by the greater number of followees, do not sympathize with the reciprocity principle, meaning that users are not motivated to retweet by the belief that once a user receives a message she or he had better retweet another message later. These users with a large number of audience retweet a message independently from whether they receive retweets or not. Instead, they are more likely to retweet out of altruistic concerns, as indicated by the significant and positive effect of altruistic motivation to behavioral intention. However, users with less number of followers
were also found not to be induced by the reciprocity motivation. Those with less followers may retweet a message out of altruistic motivation but do not feel responsible to return the favor of returning a message when they receive a message.

These findings are meaningful, firstly, in expanding the body knowledge of prosocial behaviors to the area of online communities. Secondly, by identifying psychological motivations for retweeting, the findings of this study provide a better understanding on why people (re)send a message to each other on social network. And lastly, the results of this study suggest the ways in which Twitter becomes a popular communication channel: people forward messages to others out of concern for others.

However, the limitations must be addressed, too. First, representativeness of the sample may be an issue in generalizing the theory of prosocial motivation for retweeting. Participants who completed the online survey could be more active users than those who did not take part in the study. For instance, there were a few participants who had not received the invitation directly by the researchers, but checked the retweeted invitation tweets and volunteered to complete the survey. These participants also tend to be active Twitter users and could possess the bias explained above. Secondly, in the paper, the actual retweeting values for 20 users could not be obtained for the reasons that these users had set their accounts in protected account setting so that information not be retrieved by others. Exclusion of these 20 users in data analysis did not make any meaningful difference. However the fact that many tweeter users prefer to set their privacy setting to protected needs to be taken into a great consideration in data collection for future research. Thirdly, more elaborate measuremets need to be sought. In particular, reciprocity motivation did not show excellent validity measurement. In further study, measurement of reciprocity motivation needs to be taken seriously. The relationship between three motivations need to be re-examined in further study, given that convergent validity was partially proven. Finally, other varialbes which may be related to the retweeting behavior could be taken into account (i.e., the total number of regular tweets) to deepen the understanding on why a user retweets a message.

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