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Content or Context: Which Matters More in Information Processing on Microblogging Sites

Lun Zhang
Dept. of Journalism & Science Communication, University of Chinese Academy of Sciences, 19 Yuquan Avenue, Shijingshan District, Beijing, China

Tai-Quan Peng
Wee Kim Wee School of Communication and Information College of Humanities, Arts, & Social Sciences, Nanyang Technological University

Ya-Peng Zhang
Baidu.com
Baidu Campus, No. 10, Shangdi10th Street, Haidian District, Beijing, 100085, China

Xiao-Hong Wang
JD.com
China National Convention Center, Beijing, 100105, China

Jonathan J. H. Zhu
Web Mining Lab, Dept. of Media and Communication, City University of Hong Kong
18 Tat Hong Avenue, Kowloon Tong, Kowloon, Hong Kong

Address correspondence to:
Lun Zhang
Dept. of Journalism & Science Communication, University of Chinese Academy of Sciences
19 Yuquan Avenue, Shijingshan District,
Beijing, China
E-mail: zhanglun@ucas.ac.cn
Phone Number: +86-13810020327

Address reprint requests to:
Lun Zhang
Dept. of Journalism & Science Communication, University of Chinese Academy of Sciences
19 Yuquan Avenue, Shijingshan District,
Beijing, China
E-mail: zhanglun@ucas.ac.cn

Abstract

With a framework based on the heuristic-systematic model of information processing, this study examined the effects of both content and contextual factors on the popularity of microblogging posts. The popularity of posts was operationalized as the re-tweeting times and number of comments received by posts, which are users' behavioral outcomes after processing information. The data of the study were 10,000 posts randomly drawn from a popular microblogging site in China. Content factors were found to outperform contextual ones in accounting for posts' popularity, which suggests that systematic strategy dominates users' information processing in comparison with heuristic strategy on microblogging sites. Our findings implied that re-tweeting and commenting are distinct types of microblogging behaviors. Re-tweeting aims to disseminate information in which the source credibility (e.g., users' authoritativeness) and posts' informativeness play important roles, whereas commenting emphasizes social interaction and conversation in which users' experience and posts' topics are more important.

Keywords: Microblogging, Heuristic-Systematic Model, Information Processing, Posts' Popularity

1.1. Introduction

Social media has taken its place alongside traditional media as a major force for information diffusion. In social media, each user functions simultaneously as a consumer and producer of information, with the ability to create and contribute content. In turn, content is consumed, or rated, by being voted on (e.g., Digg), forwarded (e.g., Twitter), and commented on (e.g., Facebook). Thus, social media has "facilitated new ways of interacting with information" (Lerman, 2007, p. 1), and it is important to know which factors cause audiences (i.e., information consumers) to filter, process, exchange, and distribute information and opinions within this free marketplace of ideas.

Social media has loosened the constraints of information acquisition and distribution, both psychologically and physically, due to their features of real-time sharing, unboundedness of space in communication, 24/7 access, frequent updating and ease of access (Van Cuilenburg, 1999). Thus it is assumed that users of social media can process information with their free will, simply by judging the information quality. However, social media also poses a great challenge for users because they might process each message to which they are exposed. This task leads to information overload for users by exceeding the upper limit of their cognitive capacity; as a result, they may choose an economic strategy for information processing (Morris, Counts, Roseway, Hoff, & Schwarz, 2012). Empirical research has yet to provide a clear picture of how users choose which messages to focus on, respond to, and share, or of why some messages are more likely to be acted upon than others. In this study, we lend from different areas of research, for example, the dual processing theory of information processing, to try to build up this picture.

Microblogging, thanks to its great ability to incite participation, is one of the most popular types of social media. Users generate millions of messages (known as “posts”) per day via Twitter, which may be the most successful microblogging site in the world even though the length of each tweet is limited to 140 characters. On microblogging sites, users can use the “re-tweet” function to forward or re-address a post and can also use the “comment” function to register their comments in response to a post. The current study aims to examine factors that will influence users’ information-processing behavior, taking a Chinese microblogging site as an example.

2.1. Conceptual Framework and Research Hypotheses

The study draws on the heuristic-systematic model of information processing (HSM) (Chaiken, 1980) to explain why some posts are more popular than others. It is assumed that the more a post is re-tweeted or commented on by users in a microblogging site, the more popular it is. Users’ re-tweeting or commenting behavior represents their behavioral decisions after they are exposed to posts and process those posts (Liu, Liu, & Li, 2012).

Different from other heuristic processing models (e.g., the Elaboration Likelihood model), HSM argues that people use two *parallel*, *co-occurring,* rather than *competing* modes to process information: systematic and heuristic. Systematic mode is a deliberative processing mechanism in which message- and topic-relevant cognition plays a critical role in forming judgments (Chaiken, 1987). Users who adopt the strategy of systematic information processing will make behavioral decisions (i.e., to re-tweet or comment) based on their evaluation of the information quality (Zhang & Watts, 2008) that is manifested in the message content (e.g., Flanagin & Metzger, 2007; Metzger, Flanagin & Medders, 2010; Taraborelli, 2008).

However, information overload on the Internet may prevent users from always devoting their full mental capacity to scrutinizing information in detail (Fogg, 2003; Lang, 2000). On microblogging sites, users are likely to employ a cognitive heuristic strategy to process information by considering the cost of information-seeking. In heuristic mode, users will process messages based on their assessments of messages' contextual features (e.g., characteristics of communicators) (Chaiken, 1987; Zhang & Watts, 2008). A conceptual framework is therefore proposed in Figure 1 that includes two sets of factors to explain the popularity of posts: content and contextual.

Figure 1 here

2.1.1. Content Factors that Influence the Popularity of Posts

Content factors are the topics of posts and the semantic manifestations of argument quality within posts (Petty & Cacioppo, 1986; Stone & Hoyt, 1974). Because microblogging sites contain diverse user-generated content, they function as a niche for providing various types of information (Wang & Huberman, 2012). Previous studies have found that various categories of information receive different levels of attention. Zhao et al. (2011) found that world events and travel information are the two most popular topics on Twitter, followed by technical and science topics, sports, arts, family and life, health, business, and education. Bandar et al. (2012)

found that the most popular posts on Twitter belong to the categories of technology, health, fun stuff, and programming. Therefore, it is hypothesized that:

H1: Posts with different content foci will vary in their popularity.

Researchers have argued that informativeness is a critical dimension in the assessment of information quality (Ballou & Pazer, 1985; DeLone & McLean, 1992; Wang & Strong, 1996). When people engage in message- or issue-relevant thinking, their behavioral decisions (i.e., re-tweeting and commenting) depend on the level of informativeness offered by the message. Liu et al. (2012) found that the amount of information contained in a post positively correlates with the number of times it is re-tweeted. As the length of messages is positively associated with their informativeness (Otterbacher, 2009), it is reasonable to argue that individuals are more responsive to longer messages. Therefore, it is hypothesized that:

H2: The length of a post will positively affect its popularity.

Information completeness is another critical dimension in the assessment of information quality (Ballou & Pazer, 1985; DeLone & McLean, 1992; Wang & Strong, 1996). In the context of microblogging, the average length of a single post is about 14 words or 78 characters (Go, Bhayani, & Huang, 2009), which may not provide sufficient information compared with other types of social media (Ehrlich & Shami, 2010). To improve the completeness of information, users on microblogging sites are allowed to insert a URL into their posts which can direct audiences to external webpages for more information. The availability of supplementary information may enrich the information completeness of posts. Therefore, it is hypothesized that:

H3: The availability of supplementary information in a post will positively affect its popularity.

Affectiveness refers to the degree of emotional expression in messages (Hamilton & Stewart, 1993). It has been found that the degree of affectiveness helps to magnify the vividness of information and make the position of the sources seem more extreme (Huffaker, 2010). Consequently, the message with higher level of affectiveness is of greater interest to readers (Nisbett & Ross, 1980). Furthermore, messages written in a more sentimental manner will create feelings of warmth and intimacy and magnify the effort of user-input, which in turn moves more readers to respond by re-tweeting or commenting (Schweiger & Quiring, 2005). In a study of online communication on bulletin board system (BBS), Huffaker (2010) found that the degree of emotionality of a message can increase feedback by triggering replies. Thus, it is hypothesized that:

H4: The degree of affectiveness of a post will positively affect its popularity.

2.1.2. Contextual Factors that Influence the Popularity of Posts

In the heuristic mode of information processing, users rely on contextual factors (i.e., heuristic cues) to form judgments of a message (Chaiken, 1987). In social media, the difficulty involved in clarifying source identity, as well as information overload within the system, make users rely on those cues that can indicate information credibility (Sundar, 2007). Morris et al. (2012) found that users on microblogging sites make poor judgments of truthfulness based on posts' content alone. On microblogging sites, a key heuristics cue is the characteristics of posts' authors (Chaiken, 1987). For example, Metzger et al. (2010) provided ample empirical evidences that authors' reputation and endorsement serve as heuristic cues for evaluating the credibility of online information. Posts from highly credible sources are much more likely to be acted upon. Specifically, four author-related factors come into play in this study: *degree of activeness*, *degree of self-disclosure*, *experience*, and *authoritativeness* (Kwak, Lee, Park, & Moon, 2010). The degree of authors' activeness may invoke users' heuristic appreciation of the level of devotion that authors contribute to the system. For example, the number of messages that an author posts has been found to influence readers' evaluations of the credibility of his or her posts (Castillo, Mendoza, & Poblete, 2011). However, on microblogging sites, overactive users (i.e., those who post too many messages) may be regarded as spammers (Benevenuto, Magno, Rodrigues, & Almeida, 2010). Therefore, it is hypothesized that:

H5a: The effect of an author's degree of activeness on the popularity of his or her posts will present itself in an inverse U-shape.

An author's number of followers has also been found to positively moderate the relationship between number of posts and post popularity. Users who have large numbers of followers and have actively posted messages are identified as influential users (Cha, Haddadi, Benevenuto, & Gummadi, 2010). Therefore, it is hypothesized that:

H5b: An author's number of followers positively moderates the impact of his/her degree of activeness on posts popularity.

The degree of online self-disclosure by an author has been found to indicate the number of self-related messages an individual reveals online (Gibbs, Ellison, & Heino, 2006). A high self-disclosure level can enhance the perception of presence between two users and thereby help to reduce uncertainty, elicit trust, and trigger heuristics pertaining to honesty (Sundar, 2007), all of which improves the degree of information credibility. Therefore, it is hypothesized that:

H6: Degree of self-disclosure by an author will positively affect posts' popularity.

In the context of online surfing, users (readers) may employ authors' experience heuristic as a basis for their credibility judgments. The time spent in a particular online community will invoke trust among users (Huffaker, 2010). Users on microblogging sites will recognize the contribution of authors based on their time devoted to the community—which in turn, builds up trust between users and authors. Thus, authors with longer usage history are perceived to spread more credible information (Castillo et al., 2011). Therefore, it is hypothesized that:

H7: Users' experience with microblogging sites will positively affect posts' popularity.

According to Sundar (2007), authors' authoritativeness as a feature of agency affordance is a major criterion for assigning credibility to a given message. Posts by people who lack expertise in certain domains are usually not considered as trustworthy. In contrast, if an author is identified as an authority, his/her messages may be seen as important and credible. On microblogging sites, posts posted by officials are considered to be more trustworthy and valuable (Castillo et al., 2011). Cha et al. (2012) found that posts authored by news aggregators and news sites are re-tweeted more frequently than posts by "ordinary" people. Thus, posts posted by authoritative authors would be more likely to be acted upon (Chaiken, 1987). Therefore, it is hypothesized that:

H8:Authors' authoritativeness will positively affect posts' popularity.

In addition to the aforementioned content and contextual factors, two additional control variables are included in the model: number of followers and posting time. The more followers a user has, the greater potential audiences messages posted by this user will have. Posts published during online "rush hours" (i.e., when the workload of updates and posts is significantly higher) are more likely to reach larger audiences (Krishnamurthy, Gill, & Arlitt, 2008).

3.1. Method

3.1.1. Data

We randomly extracted 10,000 original posts from Sina Weibo, one of the most popular microblogging sites in China. The posts were posted by 9,975 authors between November 2011 to December 2011.The data include information about the authors, post contents, and posting time.

3.1.2. Measurement

Popularity of posts (i.e., the dependent variable) is quantified as two types of user response behaviors: re-tweeting and comments. The former refers to the frequency with which a particular post is forwarded to other users; the latter refers to the number of comments posted in response to a particular message.

Categorization of *post topics* is based upon Bandari et al. (2012). These 10,000 posts were manually coded according to the following nine categories: (1) personal interest information, (2) utility information, (3) social/political/business news, (4) social interaction, (5) personal life, (6) marketing/advertising information, (7) jokes/gossip, (8) self-assurance information, and (9) system notification messages. The categories are self-explanatory, except for utility information and self-assurance, which respectively refer to practical information that is used in daily life (e.g., weather forecasts) and inspirational quotes. The measurement reliability of Cohen’s Kappa is .85. The *length of posts* is measured as the total number of words and punctuation symbols. The degree of *affectiveness of posts* is measured by the proportion of emoticons and the number of grammatically modal particles (i.e., mood-indicating words and punctuation). For example, in the post “*Wow! I love the cute dog!! ☺*’, the degree of affectiveness is calculated as 5/10. This measurement is the proportion of 1 emoticon (i.e., smiley-face), 1 modal particle (i.e., “Wow”), and 3 punctuation marks (i.e., exclamation points), which add up to 5, to the number of words in the post (also 5) plus these 5 indicators (a total of 10). *Availability of supplementary information* is operationalized as a dichotomous variable that measures whether or not a URL has been inserted into the post.

Degree of activeness is measured by the total number of messages that a user has posted. *Degree of self-disclosure* is operationalized as a dichotomous variable that measures whether or not a user has provided a text-based self-description on the microblogging site. *Experience* is measured by the length of time from a user's date of registration to the date of publication of a particular post. *Authoritativeness* is operationalized as a dichotomous variable that measures whether or not a user is verified as an elite member (e.g., a celebrity) by other users or by the microblogging site itself. Appendix 1 provides an illustration how such information is displayed on the mircroblogging site.

Number of followers was directly retrieved from the microblogging site. Based on previous findings on the time-use pattern of microblogging (Krishnamurthy et al., 2008), *posting time* is categorized according to a binary variable: rush hour (8 a.m. to 12 a.m.) and non-rush hour (12 a.m. to 7 a.m.).

3.1.3. Analytical Design

A general linear model (GLM) was employed to test the research hypotheses proposed in the current study. Compared to linear regression, GLM possesses greater statistical power by considering the correlation among dependent variables (Bray & Maxwell, 1985). To identify the statistical contribution of these two blocks of factors to the model, we adopted a step-wise approach to include two sets of independent variables into the model. First the content factors were included in the model, then contextual factors[1] were entered, and finally control variables were included.

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[1] To examine the effect of the degree of activeness, we added a quadratic term for it to the model. According to Cohen and Cohen (1975), the quadratic term in the model indicates the shape of the regression function. In the current study, the quadratic term indicates that the function has one bend. A positive sign of the quadratic term in polynomial regression would indicate a curve that is U-shaped, whereas a negative sign indicates a curve that is bell (i.e., inverse-U) shaped.

4.1. Findings

4.1.1. Descriptive Statistics

The mean of re-tweet times is 0.87 with a standard deviation of 15.93; the mean of comment times is 1.67 with a standard deviation of 6.55. As shown in Figure 2a and Figure 2b, the numbers of re-tweets and comments received by posts follow a heavy-tailed distribution, which suggests that most posts receive quite limited attention from users and very few posts are heavily acted upon.

figures 2a and 2b here

Personal life is the most popular post topic. As shown in Figure 3, this type of posts accounts for 45% of the 10,000 posts, followed by social interaction (14%), system notification (11%), personal interests (7%), online marketing/advertising (6%), self-assurance (5%), and social/political/business news (3%). The dominance of personal information suggests that microblogging sites in China are largely used as a platform for updating personal status and for socializing.

Figure 3 here

4.1.2. GLM Results

The results of the GLM are reported in Table 1. Content factors carry more weight than contextual factors in explaining posts popularity. As shown in Table 1, content factors account for 9% of variance in number of comments and 5% of variance in re-tweeting, whereas contextual factors account for only 2% and 3%, respectively.

Table 1 here

Posts popularity differs across topics of posts. As shown in Table 1, posts on personal interests, social interactions, and jokes/gossip received more re-tweets and more comments than those on social/political/business news. Posts on utility information and personal life received more comments than those on social/political/business news.

As an operationalization of message informativeness, length of posts is found to have a significant positive impact on the number of re-tweeting times but a negative impact on the number of comments. These results suggest that re-tweeting behavior depends on the level of informativeness of the message. However, authors who wish to receive more comments on their posts must keep posts simple and short.

Availability of supplementary information is found to have negative effects on both re-tweeting and commenting, which is contradictory to H3 but consistent with an earlier study (Liu et al., 2012). Compared to posts without URLs, posts with URLs are both less re-tweeted and less commented on. The presence of external sources may be a “distracting heuristic cue” (Liu et al., 2012) that discourages users from evaluating the post *per se*.

Degree of affectiveness of posts is found to have a positive effect on re-tweeting and commenting. Posts written in a more sentimental way receive more attention from readers on microblogging sites. Thus, H4 is supported.

Users’ degree of activeness and its quadratic term are found to have significantly negative effects on re-tweeting and commenting. This finding suggests that overactive as well as underactive users will be considered by other users to be invalid users; consequently, their posts receive less attention. Thus, H5a is supported. Moreover, the impact of users' degree of activeness on re-tweeting and commenting are found to be positively moderated by the number of followers a user (author) has. This increase in the number of followers can be interpreted as evidence for the status of the overactive user as a star rather than a spammer. In other words, the number of followers enhances the effect of an author's degree of activeness on post popularity. Thus, H5b is supported.

Users' degree of self-disclosure is found to exert non-significant impact on the popularity of posts. Thus, H6 is not supported. Users' experience exerts a nil effect on re-tweeting, but a positive effect on commenting. In other words, the more experienced a user is, the more likely he or she will use microblogging to maintain online relationships and, consequently, to receive more replies.

Users' authoritativeness exerts a positive effect on re-tweeting but a nil effect on commenting. This result indicates that users consider credibility only when they redistribute messages. When commenting, users may reply on the basis of author familiarity rather than author authority.

The number of followers is found to have significant effects on both re-tweets and comments. Posting time is also a significant factor in the number of re-tweets and the number of comments. Posts published during rush hours will receive more re-tweets and comments.

5.1. Discussion and Conclusion

With a conceptual framework developed from HSM, this study examined the factors that influence post popularity on a Chinese microblogging site. Consistent with HSM, it was found that both content and contextual features exert influences on the popularity of posts, which indicates that both heuristic and systematic strategies influence users' information-processing on microblogging sites. Users, who are exposed to a tremendous amount of information on microblogging sites, adopt a systematic coping strategy in which they examine the content features of a post (e.g., its topic and affective degree) to determine whether or not to re-tweet/comment on it. Users also adopt a heuristic mode to process the information in a post and decide whether or not to re-tweet/comment by judging the credibility of the source, as indicated by the author's degrees of activeness, experience, and authoritativeness. In the current study, HSM, which was originally proposed and developed in the context of traditional persuasion studies, was shown to have explanatory power in accounting for users' information processing in social media.

This study addresses a long-standing issue, namely how users process information in the context of microblogging. We have found that content factors carry more weight than contextual factors in influencing post popularity, which suggests that users on microblogging sites assess online information based more on the contents per se than on extrinsic cues. In other words, compared with a heuristic strategy, a systematic strategy dominates the information processing on microblogging.

The current study also engages another issue that is hotly debated: whether microblogging is a more of medium for information sharing or more of a platform for social interaction. Our findings suggest that the natures of both information sharing and social interaction are represented through, respectively, users' re-tweeting and commenting behaviors. For example, on this Chinese microblogging site, posts that could be of common interest to numerous users (e.g., jokes/gossip) are more likely to be diffused and shared via re-tweeting, whereas posts in which only users with close relationships might be interested (e.g., personal interests and personal life) are more likely to be discussed between the authors and their audiences via commenting.

Our findings indicate that re-tweeting and commenting are two distinct behaviors. The former aims to disseminate information in which the source credibility and the informativeness of the message itself play important roles, whereas the latter emphasizes social interaction and conversation in which personal experience (on the part of authors and readers alike) and message topics of personal interest are more important.

Distinctions between these types of behavior, re-tweeting and commenting, can shed lights on business practices and the formation and diffusion of online public opinion. For online businesses, reputation could be built by encouraging users to share their consumer experiences via commenting on business-generated posts. Re-tweeting could be used to increase sales and brand awareness by encouraging users to disseminate advertising posts. In the area of online public opinion, comments contribute both to opinion formation and deliberation. Public opinion on certain social issues could be formed via online conversations; however, dissemination of such public opinion must be completed through re-tweeting because it reaches a larger user base.

Finally, the findings of this study also have some practical implications. Advertisers who aim to disseminate their messages through microblogging sites, for example, must draft the message texts in a way that is both emotional and informative, and also avoid the insertion of external links. It is very important for this type of user to post advertising messages during work hours rather than during non-rush hours. In addition, to maintain their online accounts, advertisers should not publish messages too often.

5.2. Limitations and Directions for Future Studies

This study found that on microblogging sites, systematic strategy as evidenced by the effects of content factors on post popularity dominates the processing of information. Three possibilities may have led to this result. First, new media often implies more-active communication involvement by users compared to users of other, traditional media such as television and radio (Van Cuilenburg, 1999). Second, users must be more deeply involved in information processing when they re-tweet or comment on a message than when they browse through a message. Third, the current model may not sufficiently consider audiences' subjective measurements; in other words, the inclusion of perception measurements of audience evaluations of information quality and source credibility might help to make the model more comprehensive. Because it used retrieved behavioral data, the current study is unable to provide information about users' subjective evaluations of source credibility.

The challenge posed by lack of self-reported information has been common to researchers who depend upon data-mining. Future studies should identify the cause of the apparent domination of systematic information processing on microblogging by 1) comparing information processing behaviors between traditional and social media, 2) comparing the degree of involvement in information processing among different online behaviors (e.g., browsing, posting, re-tweeting, etc.) on microblogging, and 3) considering more-subjective measurements of users' perceptions of information quality and judgments of source credibility.

In addition, the current study examined microblogging behavior using Sina Weibo in the Chinese context. Some studies (e.g., Suh, Hong, Pirolli, & Chi, 2010) of other microblogging sites (e.g., Twitter) have produced similar results. However, according to Gao, Abel, Houben, and Yu (2012), microblogging behaviors on Sina Weibo and Twitter are different in terms of users' posting frequency, speed of reposting, the most frequently posted topics, etc. These differences might be attributed to 1) cultural differences among users and 2) technical differences between the two platforms. As Hofestede (1991) argued, China and the U.S. show great cultural differences in power distance (i.e., strength of social hierarchy), individualism, masculinity, and uncertainty avoidance. As for technical differences, Sina Weibo allows both re-tweeting and commenting whereas Twitter only allows re-tweeting, which includes the comment function. Due to the lack of the cross-cultural and cross-platform data, we currently cannot test the model in this study in a comparative way. Therefore, it would be unacceptably risky to conclude that the findings of this study represent a cross-contextual evaluation of microblogging behavior. Future researchers should make extensive efforts to explore contextual differences between different types of online information processing behaviors.

Table & Figure Legends

Table 1 GLM Results of Content Features and Contextual Features on Re-tweet Times and Number of Comments
Figure 1 Conceptual Framework
Figure 2a &2b Distribution of Number of Re-tweets and Comments
Figure 3 Distribution of Topical Categories of Posts (N = 10,000)
Appendix 1 Example of Measuring Contextual Factors

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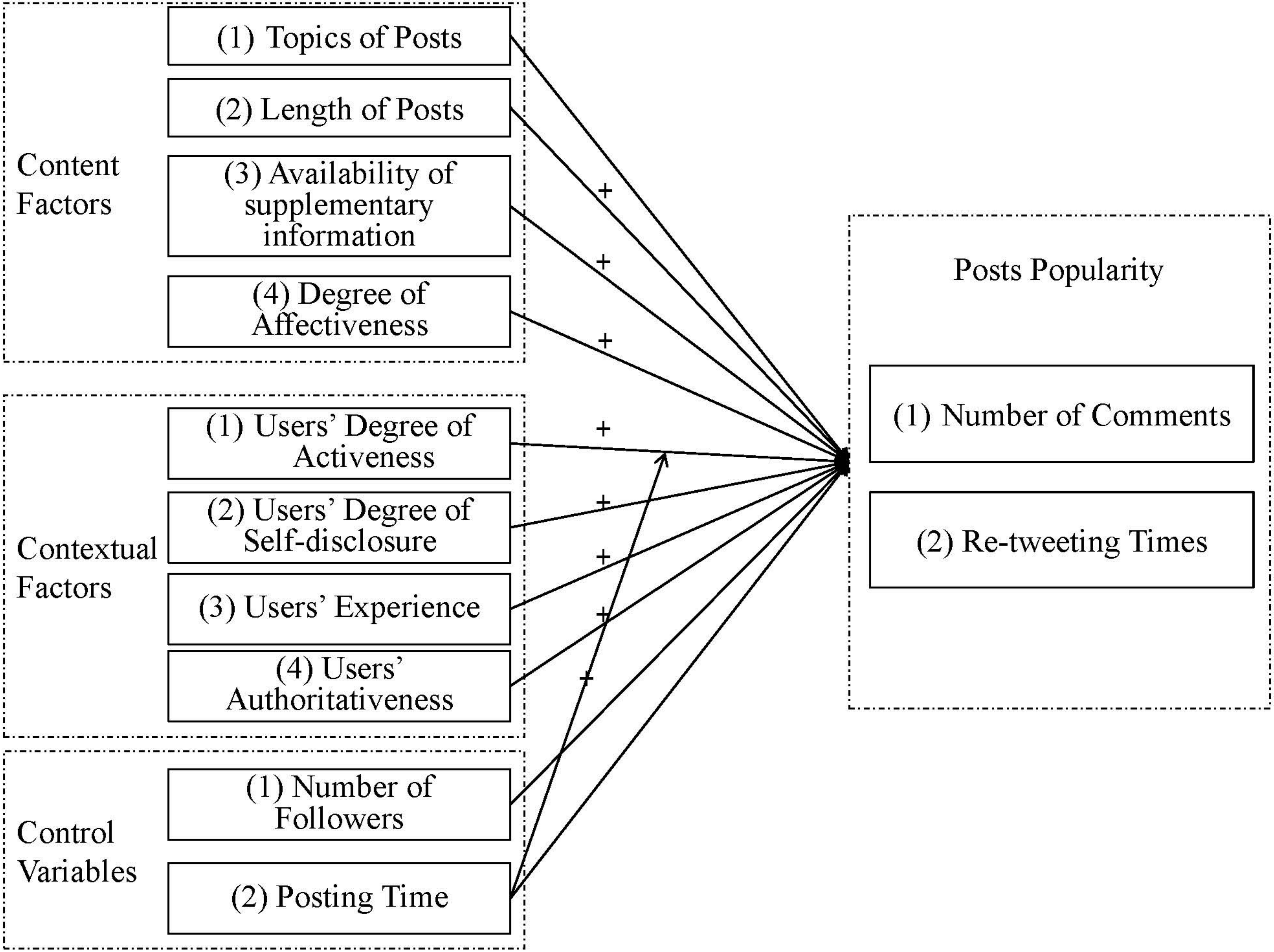
Table 1. ***GLM Effects of Content Features and Contextual Features on Re-Tweet Times and Number of Comments***

	Re-Tweet Times		Number of Comments	
	Coefficients	*s.e.*	Coefficients	*s.e.*
Intercept	-.69***	.04	-.77***	.06
Content Features				
Topics1 (Personal Interests = 1, Social/Political/Business News = 0)	.08*	.03	.25***	.05
Topics2 (Utility Information = 1, Social/Political/Business News = 0)	.05	.04	.34***	.06
Topics3 (Social Interaction = 1, Social/Political/Business News = 0)	.18***	.03	.40***	.05
Topics4 (Personal Life = 1, Social/Political/Business News = 0)	-.07*	.03	.21***	.05
Topics5 (Marketing/Ads = 1, Social/Political/Business News = 0)	.04	.03	.10	.05
Topics6 (Jokes/Gossip = 1, Social/Political/Business News = 0)	.24***	.04	.21***	.06
Topics7 (Self-Assurance = 1, Social/Political/Business News = 0)	.07	.04	.09	.06
Topics8 (System Notifications = 1, Social/Political/Business News = 0)	-.01	.03	.06	.05
Length of Posts	.0002*	.00006	-.0002*	.00008
Availability of Supplementary Information (Absence of Short Links = 0, Presence = 1)	-.17***	.01	-.41***	.02
Affective Degree of Tweets	.06*	.03	.18*	.04
ΔR^2	5%		9%	
Contextual Features				
Users' Degree of Activeness	-.05***	.01	-.09**	.01
Users' Degree of Activeness^2	-.03***	.01	-.06**	.01
No. of Followers × Users' Degree of Activeness	.09***	.01	.05*	.01
Users' Self-Disclosure Degree (Absence = 0, Presence = 1)	-.02	.01	.00	.02
Users' Experience	.00	.00	.001***	.00004
Users' Authoritativeness (Ordinary = 0, Celebrity/Organizations = 1)	.18***	.03	.03	.05
ΔR^2	3%		2%	
Control Variables				
Number of Followers	.18***	.01	.17***	.01
Posting Time (Rush Hour = 1, Other = 0)	.04*	.01	.05*	.02
ΔR^2	8%		6%	
Total R^2	16%		17%	

Note: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$


Content Factors
(1) Topics of Posts
(2) Length of Posts
(3) Availability of supplementary information
(4) Degree of Affectiveness
Contextual Factors
(1) Users' Degree of Activeness
(2) Users' Degree of Self-disclosure
(3) Users' Experience
(4) Users' Authoritativeness
Control Variables
(1) Number of Followers
(2) Posting Time
Posts Popularity
(1) Number of Comments
(2) Re-tweeting Times
+
+
+
+
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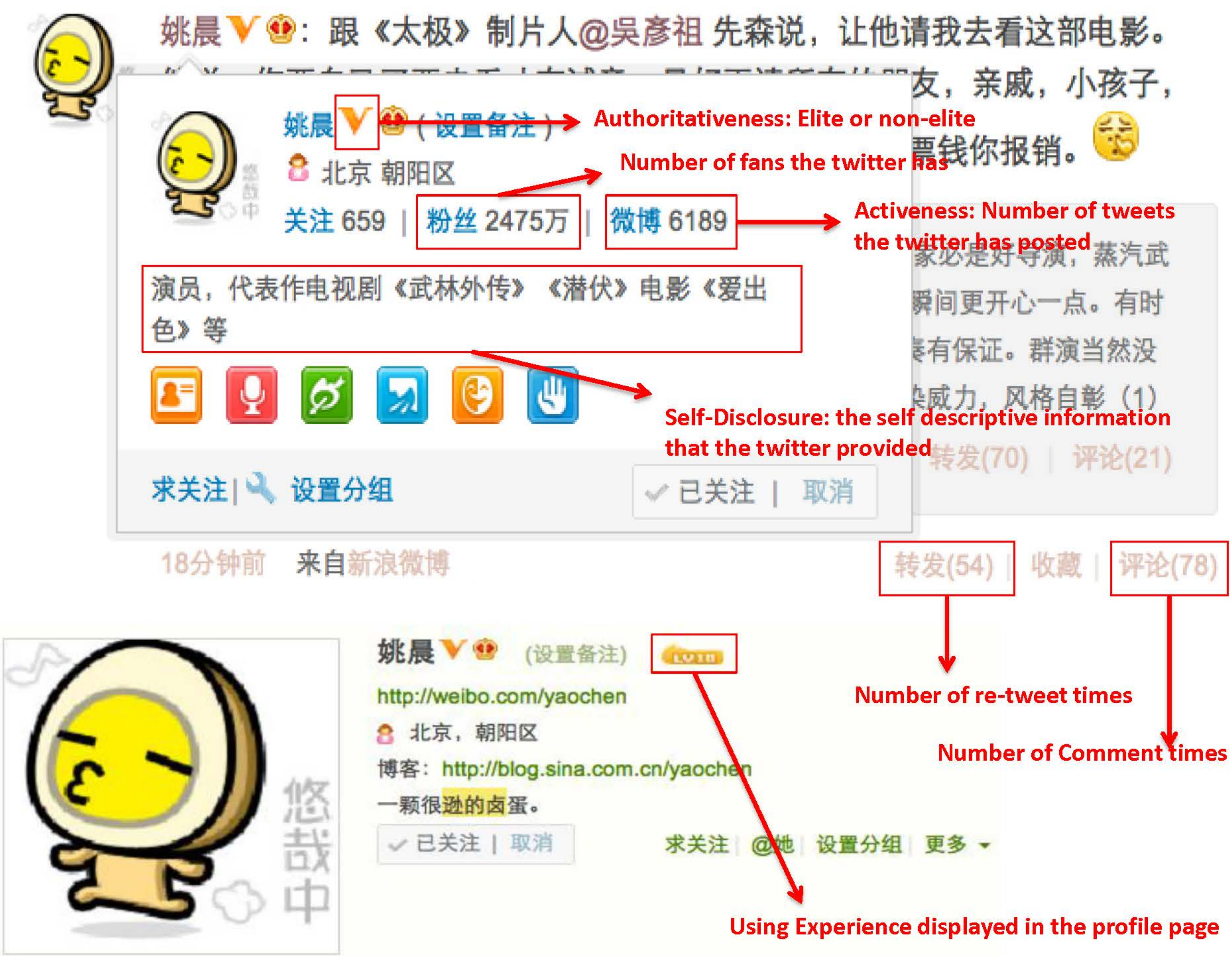
+
+



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