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Branding with social media: User gratifications, usage patterns, and brand message content strategies

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ABSTRACT

The emergence of social media provides a new platform for developing brand–consumer relationships. The aim of the current study is to examine the differences in Chinese users' gratifications of different social media and the impact of brand content strategies on the quality of brand–consumer communication via social media. In the first study, 209 SNS and 161 microblog users were surveyed. Five dimensions of social media gratifications emerged from the factor analysis. Significant differences in the strengths of gratifications were found between SNS and microblog users. Usage patterns of SNS and microblog are analyzed and compared. In the second study, we examined the impact of users' gratification and the type of social media on the effectiveness of different brand content strategies through a two-week experiment involving 60 SNS users and 61 microblog users. Implications for developing branding strategies on different social media platforms are discussed.

1. Introduction

Social media have gained much popularity among Internet users and have provided a new paradigm for branding activities. A survey of participants from 35 countries showed that 50% of social media users are connected to brands, 42% had a conversation with a brand on social media, and 36% posted content about a brand or a company on social media (InSite Consulting, 2011). According to a report published by the Data Center of China Internet (2013), more than 160,000 companies in China had registered official accounts on Sina Weibo, the largest microblog platform in China and more than 80% of microblog users in China follow company microblog users.

These statistics show a great opportunity for leveraging social media for brand management, as discussed by a number of researchers (Dholakia & Durham, 2010; Kabadayi & Price, 2014; Kim & Ko, 2012a,b; Rauschnabel, Praxmarer, & Ivens, 2012; de Vries, Gensler, & Leeflang, 2012). Building a brand page on social media provides a source of continuously updated information for consumers while at the same time gaining exposure for brands. The ability to hold conversations directly with consumers on social media makes consumer–brand relationships more intimate and fosters more rapport with consumers, especially young people. The interactive dialogues also provide an opportunity to reduce misunderstanding toward brands. Ample research has provide empirical evidence for the beneficial influence of social media branding. Early research found that participation in fan communities has a positive impact on consumer loyalty and commitment (Bagozzi & Dholakia, 2006; Kim, Lee, & Hiemstra, 2004). Dholakia and Durham (2010) found that becoming fans of the Facebook page of a restaurant changed its consumers' behavior dramatically: they visited the store more often and generated more positive word of mouth. Through two survey studies, Kim and Ko (2012a,b) found that social media marketing behaviors have a positive impact on consumer relationships, purchase intention, and equity drivers.

More recently, there has been research on factors that influence the success of social media branding. Some researchers (Rauschnabel et al., 2012; de Vries et al., 2012) investigated design features—such as the position, size, vividness, variety of media used, and interactivity—that influence the popularity of posts on Facebook brand fan pages. In addition to these design issues, perhaps a more important decision to make in social media branding is what kind of content to post. Related research reveals inadequate yet conflicting findings. De Vries et al.'s (2012) results show that whether posts are informative or entertaining has no significant influence. This contrasts with the study by Kim and Ko (2012b), which found that the entertainment properties of social media marketing are the strongest predictor of perceived intimacy,

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trust, and purchase intention, but the effect of the informative properties was insignificant.

A limitation that may lead to these conflicts is the failure to consider the motivations that drive consumers to use social media. People use media to gratify their social and psychological needs (Katz, Blumler, & Gurevitch, 1973). Their gratifications strongly influence how they use and behave toward the media. Understanding these gratification is critical to providing the right content and to getting consumers actively engaged with brands on social media. Furthermore, people often use more than one type of social media simultaneously and they seek different gratifications from the different types (Quan-Haase & Young, 2010). Social networking services (SNS, such as Facebook) and microblog sites (e.g., Twitter) are most popular for branding and marketing use. These two systems share similarities but are different. How these differences influence people's gratifications, their usage behaviors, and their responses to different content strategies remain unstudied. In addition, the majority of the current research in this field focuses exclusively on Westerners. Given an internet user base of 688 million and over 90% of it being active social media users, we found an investigation how Chinese social media users' gratification sought and its influence on user behaviors in social media is needed to shed light on developing proper social media branding strategies for this particular population.

The aim of the current study is to examine the difference in Chinese users' gratifications of different social media and the implications for designing brand content strategies on social media. Two studies were conducted. Based on the literature review, we identified five major dimensions of gratifications of social media use and collected possible items for each gratification. Then a survey involving 209 SNS users and 161 microblog users was conducted. Chinese users' gratifications for using SNS and microblog sites were identified and compared, and the influence of these gratifications on their usage behaviors was examined. We also classified social media users into groups based on their usage patterns. In the second study, we examined the impact of users' gratifications and the type of social media used on the effectiveness of different brand content strategies through a two-week experiment involving 60 SNS users and 61 microblog users.

2. Literature review

2.1. Gratifications of social media usage

As one of the most successful theoretical frameworks to examine media-use motivations and behaviors, uses and gratifications theory differs from previous mass media theories in that it assumes the audience actively selects media to satisfy specific needs rather than passively receives media (Katz et al., 1973). A number of recent studies have applied this theory to social media to understand motivations underpinning consumers' media choice and usage, as shown in Table 1. By synthesizing these studies as well as the gratifications typologies of traditional mass media (Katz et al., 1973; McQuail, 1984) we classified gratifications of social media uses into five categories: information seeking, entertainment, social interaction, self-expression, and impression management.

- **Information seeking**: Social media have more than ever lowered the barriers to sharing information. The networking features allow users to receive information from sources they trust and find interesting. People increasingly use social media to learn about news and events (Kwak, Lee, Park, & Moon, 2010; Pew Research Center's Journalism Project, 2012; Raacke & Bonds-Raacke, 2008), to obtain recommendations about products and content (Bondad-Brown, Rice, & Pearce, 2011; Kim, 2014), and to seek health advice and even online diagnoses (Fox & Duggan, 2013; Scanfeld, Scanfeld, & Larson, 2010). As suggested by Shao (2009), people use social media to learn how to make sense of things for just about any subject.
- **Entertainment**: Another major use of social media is for entertaining oneself. By browsing interesting content shared by others, sharing others' life experiences, and spreading gossip, people can vent negative feelings, escape from problems, and fill time (Dunne et al., 2010; Johnson & Yang, 2009a; Park et al., 2009; Quan-Haase & Young, 2010; Whiting & Williams, 2013; Zhao & Rosson, 2009).
- **Social interaction**: Social media constitute a primary venue for young people to exchange social support, to maintain existing relationships, and to meet new friends. Users can interact with each other by sharing content, commenting on or reposting others' content, marking others' content with "favorite" or "like it," and messaging others directly. Within existing social groups, people use social media to enhance connectedness and develop common ground (Pai & Arnott, 2013; Zhao & Rosson, 2009)
- **Self-expression**: People use social media to share information about themselves and to show who they are and what they like. Such self-expressive behaviors are associated with a self-verification motive to present one's true self to the outside world, to confirm an established self-concept, and to maintain consistency in self-knowledge (Aaker, 1999; Escalas & Bettman, 2003; Sedikides & Strube, 1995). In addition, self-expression is a necessary step for people to create an identity, which is critical for obtaining peer acceptance and exchanging social support (Shao, 2009).
- **Impression management**: A number of studies found that social media users present their personal information deliberately to give others a positive impression of them (Dunne et al., 2010; Pai & Arnott, 2013; Trammell & Keshelashvili, 2005; Zhao, Grasmuck, & Martin, 2008). Some users intentionally employ social media to develop social relationships and promote self-status (Birnie & Horvath, 2002; Boyd & Ellison, 2007; Green & Pearson, 2005; Park et al., 2009). Such self-enhancement behaviors are associated with the need to maintain and enhance self-esteem (Greenwald, Bellezza, & Banaji, 1988).

2.2. The influence of gratifications on social media usage

Previous research has indicated that the differences in the gratifications of social media may lead to different use behaviors. Whereas Johnson and Yang (2009) found that only information motives, not social motives, are positively related to Twitter use, two studies (Leung, 2013; Quan-Haase & Young, 2010) on Facebook users found that people use Facebook to meet their social needs. The results imply that the specific features of social media may moderate the associations between the gratifications and the usage behaviors. However, the definition and measurement of media use differs in previous research. Whereas some researchers refer to it as the frequency of site visits or the time spent on a site (Johnson & Yang, 2009; Joinson, 2008; Wang & Tchernev, 2012), some others counted certain activities such as generating new content and updating profiles (Leung, 2009; Quan-Haase & Young, 2010). In addition, these studies collected usage data either by asking the participants to estimate how many times or how much time they use the site (Johnson & Yang, 2009) or to rate their usage on five- or eight-point scales (Joinson, 2008; Leung, 2013; Quan-Haase & Young, 2010). The accuracy of the data is thus questionable.

2.3. Patterns of social media use

In order to deliver proper branding messages to the appropriate audience, it is desirable to distinguish between users with different motivations and usage patterns. A number of researchers have attempted to identify the usage patterns of various social media (Benevenuto, Rodrigues, Cha, & Almeida, 2012; Maia, Almeida, & Almeida, 2008; Underwood, Kerlin, & Farrington-Flint, 2011; Welser et al., 2011). Using a combination of demographic information, activity records, and network properties, Maia et al. (2008) clustered YouTube users into five groups: small community members, content producers, content consumers, producers and consumers, and others. Underwood et al. (2011) argued that people use social media either for broadcasting information about themselves or communicating with others. They classified Facebook users into three groups—broadcaster, communicator, and high interaction—based on users' responses to a questionnaire capturing the nature of their Facebook activities. Lee, Yang, Tsai, and Lai (2014) proposed a method to use both activity-related and content-related features to identify users' roles on Facebook. Fazeen, Dantu, and Guturu (2011) categorized Twitter users into four groups (i.e., leaders, lurkers, spammers, and close associates) based on both behavioral features and network features. However, a direct comparison of the behavioral patterns between different social media has not been conducted. Furthermore, the link between users' gratifications and their behavioral patterns has not been examined in previous research.

3. Study 1

3.1. Research questions and hypotheses

The majority of these studies focus on Western users, and a couple of recent studies investigated users in Hong Kong and Taiwan (Leung, 2013; Pai & Arnott, 2013). However, little is known about the gratifications of social media users from mainland China. Given the huge volume of Chinese social media users, the differences between Chinese and Western cultures, and the uniqueness of social media environments in China, we found that a specific study on mainland Chinese users is needed. Moreover, to the best of our knowledge, no studies have compared the difference in gratifications between SNSs and microblogs. These two media are the most popular for social media branding. Understanding these different gratifications would help companies decide the proper branding strategy with considerations of user needs. Thus, our first research questions are:

RQ1. What are the gratifications for using SNS and microblog, respectively?
RQ2. What are the associations between the gratifications and the usage behaviors for SNSs and microblogs, respectively?

For the purpose of social media branding, we were particularly interested in the influence of gratifications on expressive activities that can help spread information, including posting content by oneself, reposting content from others, commenting on others' posts, and messaging with others. The research of Ko, Cho, and Roberts (2005) showed that users who have high information motivation are more likely to engage in human–message interaction on a website, whereas users' social interaction motivation is more strongly related to human–human interaction. On social media, browsing and forwarding messages are the primary forms of human–message interaction while commenting about others' posts and messaging are the primary forms of human–human interactions. Furthermore, Shao (2009) argued that the desire for self-expression and self-actualization drive social media users to create content. Therefore, we hypothesized that:

Hypothesis 1-1. Users with stronger information-seeking gratification repost information more frequently.

Hypothesis 1-2. Users with stronger social interaction gratification comment on posts and message to others more frequently.

Hypothesis 1-3. Users with stronger self-expression gratification post more frequently.

The network on SNSs is often based on real-life social networks, and bidirectional confirmation is needed; therefore, information is transmitted within a relatively private domain—the users' confirmed social network. Hence, it was hypothesized that gratifications of social interaction and impression management are better satisfied by SNSs than by microblogs. In comparison, following someone's microblog does not require bidirectional confirmation and therefore broadcasting transmissions are possible. In addition, microblog posts are short, and can be spread very quickly as they are forwarded from one to another. Thus it was proposed that users' gratification of information seeking is better satisfied by microblogs.

Hypothesis 2-1. The gratification of social interaction is better satisfied by SNSs than by the microblogs.

Hypothesis 2-2. The gratification of impression management is better satisfied by SNSs than by microblogs.

Hypothesis 2-3. The gratification of information seeking is better satisfied by microblogs than by SNSs.

We also attempted to identify and compare Chinese users' patterns of usage on SNS and microblog sites. We characterized usage patterns through five measures of user activities: 1) time spent on the social media, 2) frequency of posting, 3) frequency of forwarding, 4) frequency of commenting, and 5) frequency of messaging (only on the SNS). Whereas the overall time spent on social media is related to the possibility of being exposed to brand information, the other measures are related to the ability for users to spread information further. From a practical point of view, we selected features that are easily accessible from social media systems.

3.2. Methodology

3.2.1. Design of questionnaire

We chose Renren (renren.com) and Sina Weibo (weibo.com) to represent SNSs and microblog systems due to their popularity among Chinese Internet users. Renren, similar to Facebook, is an SNS widely used by college students and young people; by March 2014, Renren had 210 million cumulative active users and 51 million monthly unique log-in users. Sina Weibo was the most popular microblog site in China with 157 million monthly active users as of June 30, 2014.

At the start of the questionnaire, the participants were asked the following three questions: (1) "Have you used Renren/Sina Weibo for at least one month?" (2) "Do you use Renren/Sina Weibo regularly (at least once a week)?" and (3) "During the previous week, did you use Renren/Sina Weibo as usual?" Only those who answered "yes" to all three questions would proceed with the questionnaire. The purpose was to ensure that the participants were frequent social media users and that their usage in the previous week had not changed suddenly (e.g., traveling with limited Internet access).

Then the participants' gratifications of social media usage were

Table 1
Users' gratifications from social media.

Study	Population	Technology	Gratifications
Raacke and Bonds-Raacke (2008)	US college students	Social networking sites (Facebook and MySpace)	Learn about events Post/look at pictures Make new friends Locate old friends Keep in touch with friends Feel connected Post social functions Share information about yourself For academic purposes For dating purposes
Park, Kee, and Valenzuela (2009)	US college students	Social networking sites (Facebook)	Socializing Entertainment Self-status seeking Information
Johnson and Yang (2009)	Sampling from the authors' network, mainly US residents	Twitter	Information motives Get information Give or get advice Learn interesting things Meet new people Share information with others Social motives: Have fun & be entertained; Pass the time Keep in touch with friends or family Communicate conveniety See what others are up to Express myself freely
Shao (2009)	Theoretical work, no samples	User-generated media	Information Entertainment Mood management Social interactions Self-expression Self-actualization
Leung (2009)	Not specified	User-generated media	Cognition Entertainment Social Recognition
Quan-Haase and Young (2010)	Canadian college students	Social networking sites (Facebook), instant messaging	Pass time Share problems Affection Sociability Social information Fashion
Dunne, Lawlor, and Rowley (2010)	Irish girls (12–14 years old)	Social networking sites (Bebo)	Communication Friending Identity creation and management Entertainment Escapism Information search Interacting with boys
Wang and Tchernev (2012)	US college students	Social media	Cognitive Emotional Social Habitual
Whiting and Williams (2013)	US users	Social media	Information seeking Entertainment Relaxation Pass the time Social interaction Communicatory utility Convenience utility Expression of opinion Information sharing Knowledge about others
Leung (2013)	Hong Kong users	Social media	Fulfilling cognitive needs Getting entertainment Showing affection Venting negative feelings Gaining recognition
Pai and Arnott (2013)	Taiwanese users	Facebook	Belonging Hedonism Self-esteem Reciprocity

Table 2
Measurements of usage activities and network attributes.

Variables	Renren	Sina Weibo	Method
Time spent each visit	Average time spent per visit during the previous week		User estimation
Frequency of visiting	Average number of visits per day during the previous week		User estimation
Comments received	Average number of comments received per day during the previous week	Number of comments received during the previous week	User estimation on Renren and activity record on Sina Weibo
Comments sent	Average number of comments sent per day during the previous week	Number of comments sent during the previous week	User estimation on Renren and activity record on Sina Weibo
Number of messages	Number of messages on the message board during the previous week	N/A	Activity record from the website
Number of posts	Number of short sentences, blogs, and pictures posted during the previous week	Number of original blogs posted during the previous week	Activity record from the website
Number of forwards	Number of sharings during the previous week	Number of blogs posted during the previous week − number of original blogs posted during the previous week	Activity record from the website
Number of bidirectional links	Number of friends	Number of mutual connections	Activity record from the website
Number of people the participant follows	N/A	Number of people the participant follows	Activity record from the website
Number of followers	N/A	Number of followers	Activity record from the website

measured by a self-report questionnaire. Self-reporting is commonly used in uses and gratifications research, and was found to be valid in measuring users' gratifications of using media (Becker, 1979; Bryant & Oliver, 2009). As discussed above, we identified five major dimensions of gratifications of social media use. Initially, relevant gratification items related to each of the five dimensions in previous research were included (Jung, Vorderer, & Song, 2007; Lu & Hsiao, 2009; Luo, 2002; Papacharissi & Rubin, 2000; Rodgers & Sheldon, 2002). The researchers eliminated ambiguous and repetitive items and adapted the wording of some items to fit the current context of Renren and Sina Weibo. The obtained gratifications list was then administrated to five Renren and five Weibo users to check the completeness and the accuracy. Two more items that had not been included in previous research emerged in this process: "I can use it to collect information, so that I can find it later" and "I can keep a record of my life using it." The final questionnaire consisted of 27 gratification statements. A seven-point Likert scale (where 1 = "strongly disagree" and 7 = "strongly agree") was used for the measurement.

Then the participants were asked to log in to their accounts on Renren/Weibo, check their activity log, and fill out corresponding information related to their activities during the previous week and their network attributes, as shown in Table 2. Some of the user activity data asked for (including time spent on each site, frequency of visiting each site, and comments received and sent on Renren) were not accessible by users. In such cases, the participants were asked to make an estimation.

Following that, the participants were asked about their interaction with brand accounts on social media (i.e., their connection with brand accounts on social media and the type of brand information on social media they were interested in). The last section collected the participants' background information, including gender, age, education level, employment status, major or industry, computer experience in years, and Internet experience in years.

3.2.2. Participants

The questionnaire was administrated online. The URL of the questionnaire was (1) posted on Renren and Sina Weibo by the authors and (2) sent via email to students in the Department of Industrial Engineering at Tsinghua University, as well as members of three student associations of Tsinghua University. To check the validity of the data collected, respondents were asked to leave their accounts on the specific social medium that they were surveyed about. After four weeks, 209 and 161 valid responses were collected from Renren users and Weibo users, respectively.

As shown in Table 3, the majority of participants were college students and young workers with a high education level. The average age was 24.25 (SD = 2.03) for Renren users and 25.43 (SD = 3.98) for Weibo users. The genders of participants were balanced (56% of Renren users and 53% of Weibo users were male). There were more students among Renren users (83.25%) than among Weibo users (67.08%). This could be explained by the fact that Renren is most popular with college students and Weibo is used in a more diversified population.

3.3. Results

3.3.1. Social connections, activities, and brand following on Renren and Weibo

As shown in Tables 4 and 5, both the Renren users and the Weibo users developed large social networks on the platforms, but the Renren users had even more connections than the Weibo users. The Renren users on average had 494.18 (SD = 254.96) friends (bidirectional links). The Weibo users on average followed 207.81 (SD = 174.16) users and were followed by 220.58 (SD = 219.68) users, including 84.34 (SD = 76.19, W = 32,405) bidirectional links. The low reciprocity of Weibo connections is consistent with what Kwak et al. (2010) found about Twitter: only 22.1% of user connections were reciprocated.

The majority of the Renren users (65%) and the Weibo users (66%) visited the site at least once per day; more than 68% of the users of both sites usually spent less than 20 min per visit. Comparing users' expressive activities between the two sites, we found that the Weibo users were significantly more active than the Renren users. In the previous week, the Weibo users generated 6.23 (SD = 9.13) original posts and reposted 11.84 (SD = 29.08) times, whereas the Renren users generated 3.36 (SD = 6.48, W = 12,012.5, $p < 0.001$, $r = -0.25$) original posts and reposted 3.62 (SD = 5.59, W = 11,752.5, $p < 0.001$, $r = -0.26$) times. However, the Renren users were more active in commenting on others' content (sent and received 11.13 and 11.41 comments during the previous week, calculated by multiplying their estimates of daily comments by 7) than the Weibo users (sent and received 3.85 and 3.39 comments during the previous week).

Following brands was more popular among the Weibo users than among the Renren users. Whereas 49.07% of the Weibo users had been following brand accounts on Weibo, only 17.70% of the Renren users had been following brand pages on Renren. In

addition, 51.55% of Weibo users were positive about brand pages on Weibo, and only 22.49% of the Renren users were positive about brand pages on Renren.

3.3.2. Exploratory factor analysis of gratifications

To identify the major gratifications of social media, principal component analysis was conducted on the 27 items with orthogonal (varimax) rotation. The results were shown in Tables 6 and 7. For both Renren and Weibo, five factors emerged with no cross-loading above 0.45 except for the item of "keeping a record of life" in the Weibo group. Factor loadings for all of the items were greater than 0.55 except for the item of "meeting new people." The factor structure of users' motivation derived from the two groups were consistent, largely resembling the hypothesized structure that we proposed. Only two items deviated from the hypothetical structure. These two items ("*I can meet new people*" and "*it makes me feel connected*"), expected to load on the "social interaction" factor, in fact had higher loadings on the "impression management" factor. That led us to investigate the composition of the two factors again. The "social interaction" factor consisted of items describing the interactions with friends who are intimate with the use, whereas the "impression management" factor consisted of items about maintaining one's self image in a group of less strongly tied people. The two items mentioned above described the interaction with weakly tied people; therefore, we regrouped them into the "impression management" factor. After this adjustment, the reliability of the sub-scales, measured by the Cronbach's alpha, varied from 0.82 to 0.95, indicating a good level of internal consistency. The five-factor structure accounted for 72.7% of the total variance for the Weibo group and 69.5% of the variance for the Renren group, indicating a good fit of the model for both groups.

3.3.3. Comparing gratifications for using Renren and for using Weibo

We first compare the strengths of different gratifications for one medium with repeated-measures ANOVA. As shown in Table 8, a significant difference in the strengths of various gratifications was found for both Renren [$F(4, 832) = 66.10$, $p < 0.001$, eta-square $= 0.12$] and Weibo [$F(4, 640) = 73.14$, $p < 0.001$, eta-square $= 0.17$]. Post hoc tests with Bonferroni corrections showed that Renren satisfied the gratification of social interaction more than everything else ($p < 0.001$) whereas Weibo satisfied the gratifications of self-expression and information seeking more than other purposes ($p < 0.05$). Both Renren users and Weibo users perceived impression management as less important need than other gratifications ($p < 0.001$).

Then we compared the gratifications for using Renren versus Weibo with Wilcoxon rank-sum tests. Significant differences were found in all gratifications, except for impression management. Weibo was used more for information seeking, entertainment, and self-expression than was Renren, whereas Renren was used more for social interaction than was Weibo. Hypotheses 2–1 and 2–3 were supported, but hypothesis 2-2 was not supported.

3.3.4. The influence of users' motivation on their usage behaviors

Bivariate correlation coefficients between gratifications and use of Renren are shown in Table 9. As expected, the gratification of information seeking positively correlated with the number of reposts in the previous week (hypothesis 1-1), the gratification of social interaction positively correlated with the number of comments from the participants and the number of messages sent by the participants in the previous week (hypothesis 1-2), and the gratification of self-expression positively correlated with the number of posts from the participants in the previous week (hypothesis 1-3).

To further determine the major predictors of different usage behaviors, we ran a series of stepwise regressions analyses on activity variables. As shown in Table 9, self-expression was the only predictor retained in the model for posting and commenting behavior. It is also one of the two significant predictors for reposting behavior. It indicates that Renren users express themselves in a variety of ways: by posting their own content, by reposting content from other sources to show their interests indirectly, and by commenting on content to show their opinions. The gratification of information seeking was a major predictor of reposting behavior, in addition to self-expression. As expected, users who have a strong motivation to seek information are more likely to interact with information by reposting it. Reposting a

Table 3
Demographic background of participants in study 1.

Variable		Renren n = 209		Weibo n = 161	
		Mean	SD	Mean	SD
Age		24.25	2.03	25.43	3.98
Computer experience (years)		10.84	3.43	11.70	3.52
Internet experience (years)		8.99	2.72	9.93	2.84
		Frequency	Percentage	Frequency	Percentage
Gender	Male	116	55.50	86	53.42
	Female	93	44.50	75	46.58
Education level	High school	1	0.48	1	0.62
	Junior college	0	0.00	2	1.24
	Bachelor	65	31.10	53	32.92
	Master	98	46.89	74	45.96
	PhD	45	21.53	31	19.25
Employment status	Student	174	83.25	108	67.08
	Worker	35	16.75	53	32.92
Major (student)	Engineering	114	54.55	66	40.99
	Science	14	6.70	11	6.83
	Economics and management	26	12.44	12	7.45
	Social science	7	3.35	3	1.86
	Law	4	1.91	3	1.86
	Medicine	1	0.48	1	0.62
	Art	3	1.44	1	0.62
	Others	5	2.39	10	6.21

Table 4
Social connections and usage Activities of the Renren users.

Variable	Mean	SD
Number of friends	494.18	254.96
Number of public pages following	16.47	18.58
Number of blogs the previous day	0.03	0.16
Number of blogs the previous week	0.12	0.37
Number of forwards the previous day	0.62	1.13
Number of forwards the previous week	3.62	5.59
Number of short sentences the previous day	0.36	0.93
Number of short sentences the previous week	2.39	4.39
Number of pictures the previous day	0.08	0.35
Number of pictures the previous week	0.85	4.75
Number of messages the previous day	0.80	2.04
Number of messages the previous week	4.71	8.31
Average comments sent per day during the previous week	1.59	0.70
Average comments received per day during the previous week	1.63	0.79

Table 5
Social connections and usage activities of the Weibo users.

Variable	Mean	SD
Number of people the participant follows	207.81	174.16
Number of followers	220.58	219.68
Number of mutual connections	84.34	76.19
Number of original posts the previous day	0.97	1.92
Number of original posts the previous week	6.23	9.13
Number of forwards the previous day	1.69	4.70
Number of forwards the previous week	11.84	29.08
Number of comments received the previous day	3.39	7.21
Number of comments received the previous week	21.51	40.84
Number of comments sent the previous day	3.85	7.02
Number of comments sent the previous week	22.27	36.99

message is not only a way to share the information with others but also a means to maintain a record of useful information on one's home pages. Social interaction was the only significant predictor of the messaging behavior, but not a predictor of the commenting behavior. Though the bivariate correlations between social interaction gratification and reposting and commenting were significant, such correlations became insignificant after the influence of self-expression was controlled. It seems that commenting on others' content is more about expressing one's opinions on a topic than interacting with the person who posted the information. When Renren users want to interact with the person, they may opt a more direct approach: messaging.

Table 6
Exploratory factor analysis of gratifications of the Renren users.

Scale	Rotated factors (Cronbach's alpha)				
	Information seeking ($\alpha = 0.87$)	Entertain-ment ($\alpha = 0.95$)	Social interaction ($\alpha = 0.82$)	Self-expression ($\alpha = 0.89$)	Impression management ($\alpha = 0.89$)
I can get a large amount of information quickly and easily	**0.74**	0.22	0.15	0.07	0.10
I can get useful information	**0.86**	0.09	0.11	0.12	0.11
I can get information at a lower cost	**0.77**	0.14	0.15	0.05	0.12
I can get information that I am interested in	**0.71**	0.36	0.22	0.09	0.05
I can use it to collect information for future use	**0.65**	0.11	0.18	0.19	0.10
I can learn a lot	**0.77**	0.04	0.09	0.19	0.20
I use it to entertain	0.08	**0.81**	0.11	0.09	−0.03
I think it is fun	0.32	**0.78**	0.12	0.26	0.19
I feel excited when I use it	0.26	**0.69**	0.02	0.23	0.37
I enjoy using it	0.31	**0.67**	0.08	0.15	0.36
I can express my personal interests or preferences	0.10	0.19	0.12	**0.80**	0.27
I can express my feelings	0.17	0.21	0.16	**0.82**	0.20
I can post information about myself to let others know about me	0.17	0.19	0.29	**0.78**	0.20
I can express my ideas and opinions	0.19	0.05	0.20	**0.80**	0.17
I can keep a record of my life	0.07	0.09	0.14	**0.74**	0.20
I can get information about my friends	0.01	0.24	**0.79**	0.19	−0.01
I can communicate and interact with my friends	0.17	0.12	**0.87**	0.18	0.10
I can show concern and support to my friends	0.19	0.07	**0.88**	0.16	0.13
I can get opinion and advice from my friends	0.29	−0.01	**0.79**	0.15	0.23
I can express my ideas and advice to friends	0.28	−0.07	**0.75**	0.16	0.28
I can meet new people	0.32	−0.01	0.05	0.31	**0.42**
I can feel connected	0.28	0.13	0.04	0.26	**0.60**
I can make others like me	0.14	0.14	0.09	0.20	**0.85**
I can make others think I am friendly	0.13	0.14	0.24	0.19	**0.77**
I can make others think I am socially attractive	0.08	0.13	0.17	0.20	**0.89**
I can make others think I am competent	0.05	0.07	0.11	0.15	**0.90**
I can make others think I am friendly	0.07	0.09	0.09	0.09	**0.90**
Variance explained (%)	**15.67%**	**10.04%**	**14.11%**	**14.15%**	**18.70%**

*: Significance at the level of .05 ($p < 0.05$) are in bold.

Table 7
Exploratory factor analysis of gratifications of the Weibo users.

	Rotated factors (Cronbach's alpha)				
	Information seeking ($\alpha = 0.85$)	Entertain-ment ($\alpha = 0.84$)	Social interaction ($\alpha = 0.85$)	Self-expression ($\alpha = 0.89$)	Impression manage-ment ($\alpha = 0.95$)
I can get a large amount of information quickly and easily	**0.72**	0.08	0.15	0.23	−0.03
I can get useful information	**0.86**	0.08	0.07	0.16	0.03
I can get information at a lower cost	**0.66**	0.15	0.08	0.04	0.04
I can get information that I am interested in	**0.69**	0.20	0.06	0.27	0.05
I can use it to collect information for future use	**0.72**	0.09	0.13	−0.07	0.24
I can learn a lot	**0.69**	0.22	0.04	0.17	0.18
I use it to entertain	0.04	**0.70**	0.28	0.00	0.05
I think it is fun	0.17	**0.76**	0.26	0.16	0.11
I feel excited when I use it	0.26	**0.81**	0.02	0.18	0.18
I enjoy using it	0.32	**0.69**	0.10	0.20	0.08
I can express my personal interests or preferences	0.17	0.25	0.15	**0.68**	0.31
I can express my feelings	0.14	0.09	0.20	**0.78**	0.24
I can post information about myself to let others know about me	0.11	0.35	0.36	**0.56**	0.15
I can express my ideas and opinions	0.32	0.00	0.14	**0.77**	0.10
I can get information about my friends	0.09	0.16	**0.88**	0.08	0.11
I can communicate and interact with my friends	0.09	0.14	**0.88**	0.11	0.15
I can show concern and support to my friends	0.11	0.09	**0.86**	0.18	0.25
I can get opinion and advice from my friends	0.15	0.14	**0.82**	0.14	0.22
I can express my ideas and advice to friends	0.16	0.18	**0.79**	0.21	0.27
I can meet new people	0.34	0.02	0.23	−0.07	**0.43**
I can feel connected	0.14	0.42	0.24	−0.01	**0.50**
I can make others like me	0.07	0.16	0.12	0.15	**0.83**
I can make others think I am friendly	0.13	0.05	0.15	0.20	**0.85**
I can make others think I am socially attractive	0.06	0.12	0.14	0.20	**0.90**
I can make others think I am competent	0.06	0.10	0.21	0.12	**0.87**
I can make others think I am friendly	0.04	0.02	0.17	0.16	**0.86**
Variance explained (%)	**14.07%**	**10.93%**	**16.81%**	**10.10%**	**17.52%**

*: Significance at the level of .05 ($p < 0.05$) are in bold.

Table 8
Comparing gratifications for using Renren and Weibo.

	Renren (n = 209)		Weibo (n = 161)		W	p	r
	M	SD	M	SD			
Information seeking	4.71	1.17	5.21	1.03	12,662	<0.001	−0.21
Entertainment	4.52	1.22	4.96	1.08	13,054	<0.001	−0.19
Social interaction	5.34	0.82	5.06	1.06	19,408	0.011	−0.13
Self-expression	4.85	1.16	5.25	0.98	13,572	0.001	−0.17
Impression management	4.04	1.31	3.90	1.28	18,145	0.19	−0.07
	F (4, 832) = 66.10, p < 0.001		*F (4, 640) = 73.14, p < 0.001*				

Table 10 shows the results of correlation and regression analysis for Weibo users. Both analyses showed that self-expression was the only predictor of the posting and commenting behavior. Hypothesis 1-2 was not supported but hypothesis 1-3 was supported for Weibo users. However, self-expression was not significantly associated with the reposting frequency of Weibo users. In fact, none of the gratifications we identified, including social interaction, was significantly associated with reposting on Weibo. Hypothesis 1-1 was not supported for Weibo users. A reason might be that one may repost a Weibo message for many different purposes. Sometimes users repost a Weibo message interesting to oneself to show his or her interest and to keep a record of the information, similar to Renren users. Some other times, however, reposting Weibo messages is similar to commenting or discussing in a forum due to the notification feature of Weibo: when one forwards a Weibo post from others, the creator of the post and a sequence of users who have forwarded the post to the current user will receive a notification, which may keep the discussion going further.

3.3.5. Usage patterns of Renren and Weibo users

To identify the user groups that share similar behavioral patterns, we used K-means clustering with the Mahalanobis distance. Different from the often-used Euclidean distance, the Mahalanobis distance can appropriately handle correlated variables in a feature set and does not depend on the scale of measurements of different variables (Zhu, Wang, Wu, & Zhu, 2011). The behavioral patterns of both user groups were characterized by the visiting data and expressive activities. Aggregated features included visit frequency, visit duration, the total number of posts (including pictures, status, and blogs) created in the previous week, the number of reposts in the previous week, the number of comments (sent out and received) in the previous week, and the number of messages (sent out and received) in the previous week (for Renren users only).

Primary analysis with WARD clustering indicated that grouping the users into three or four clusters was relatively stable for both Renren and Weibo users. The plots of the variance explained by the clusters versus the number of clusters indicated that the elbow point was 3 for both Renren and Weibo users. Thus the Renren and

Table 9
Correlations between gratifications and usage behaviors for Renren users.

Gratifications	Post		Repost		Message		Comment	
	r	β	r	β	r	β	r	β
Information seeking	0.02		0.23**	0.82*	0.17*	–	0.09	–
Entertainment	0.03	–	0.23**	–	0.17*	–	0.17*	–
Social interaction	0.09	–	0.20*	–	0.19*	0.08*	0.17*	–
Self-expression	0.19*	1.20*	0.22*	0.74*	0.11	–	0.23**	0.14**
Impression management	0.07	–	0.15*	–	0.08	–	0.15*	–

*: <0.05, **: <0.001.

Table 10
Correlations between gratifications and usage behaviors for Weibo users.

Gratifications	Post		Repost		Comment	
	r	β	r	β	r	β
Information seeking	0.06	–	0.08	–	0.09	–
Entertainment	0.17	–	0.11	–	0.16	–
Social interaction	0.14	–	−0.01	–	0.13	–
Self-expression	0.24*	2.22*	0.08	–	0.20*	7.39*
Impression management	0.16	–	0.03	–	0.13	–

*: <0.05, **: <0.001.

Weibo users were each clustered into three groups.

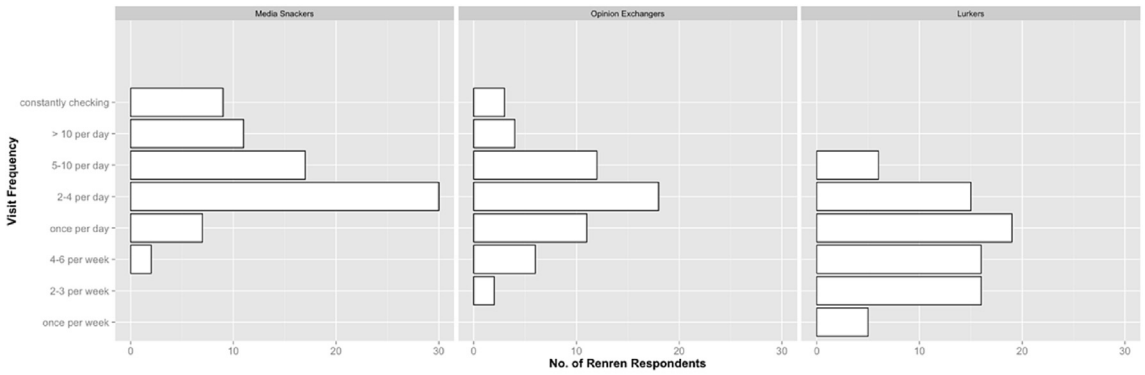
Fig. 1 presents the features of the 3 groups of Renren users and Table 11 shows their gratifications. Based on the analysis of the features, we described the three groups of Renren users as follows:

- Media snackers (36%): This group corresponds to users who habitually visit Renren to share their life with others. Among them, 97% visited Renren daily and 49% visited Renren more than 5 times per day. But 88% of them reported average session durations shorter than 20 min. They were the most active in posting and reposting content, and they sent the most messages and received the most messages from their friends in the previous week. Compared with the other two groups, media snackers had a significantly stronger motivation to manage their impression on Renren [x2 (2) = 7.12, p = 0.03].
- Opinion exchangers (27%): This group corresponds to users who collect and disseminate information on Renren and interact with others indirectly in this way. Although the majority (86%) of them visited Renren once per day, the tendency to constantly check Renren was weaker as compared with media snackers. However, their visiting sessions were significantly longer than the other two groups [x2 (24) = 39.47, p = 0.02]. About 48% of them reported average visiting sessions longer than 20 min. They posted less than media snackers, but reposted a comparable number of posts and were most active in commenting on content. They were less likely to exchange messages with other users on Renren, however. Compared with the other groups, their motives for expressing themselves was significantly higher [x2 (2) = 13.71, p = 0.001].
- Lurkers (37%): This group corresponds to passive users who read other users' posts, but rarely present their own voices. These users visited Renren less frequently, with 48% visiting less than once per day. They seldom posted or reposted content, and were less engaged in commenting. However, they exchanged more messages than opinion exchangers. Their gratification of social interaction was significantly stronger than all the other gratifications [F (3.4, 261.4) = 31.66, p < 0.001]. This indicates that lurkers join and stay in Renren mainly for keeping touch with others.

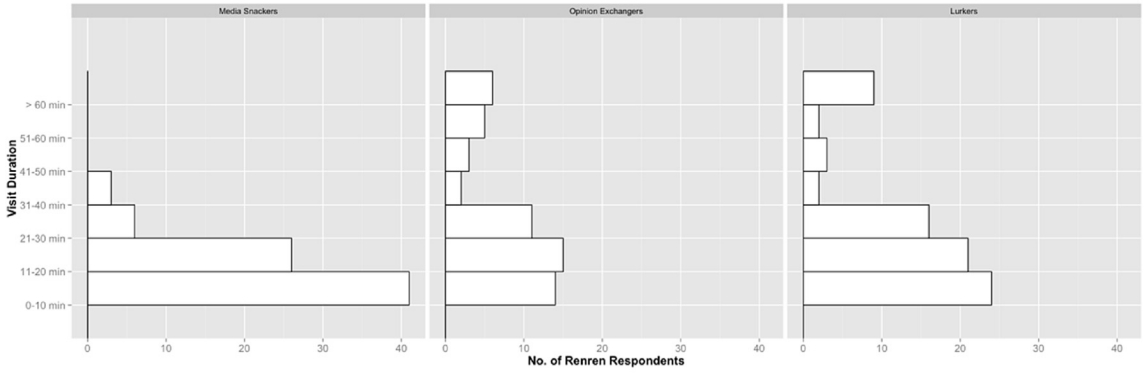
The features of the three groups of Weibo users are shown in Fig. 2 and described below:

- Media snackers (59% of all respondents): Similar to media snackers on Renren, this group of Weibo users payed frequent but instantaneous visits to Weibo. About 92% of them visited Weibo daily; 87% reported average session durations shorter than 20 min, and 52% of them stayed on Weibo for less than 10 min per visit. Despite the short visiting duration, they posted and commented the most. Their motivations for expressing themselves and seeking information were significantly stronger than other motives [F (3.24, 304.56) = 47.87, p < 0.001], and the gratification of self-expression (M = 5.30, SD = 0.88) was slightly stronger than the gratification for seeking information (M = 5.17, SD = 0.92).
- Information digesters (23% of all respondents): This group corresponds to users who spend a long time browsing and reading content from Weibo. The visiting frequency of this group was moderately high, with the majority visiting Weibo 2–4 times per day. But they stayed on Weibo for a significantly longer time per visit than the other two groups [x2 (14) = 65.02, p < 0.001], with 41% reporting that they stayed on Weibo for more than 1 h per visit. They created less original posts (about half of the number of media snackers) and commented less than media snackers, but reposted slightly more than media snackers. They had the strongest motivation to seek information (M = 5.58, SD = 0.93), which was significantly higher than the information seeking gratification in the other two groups [x2 (2) = 6.19, p = 0.045].
- Lurkers (18% of all respondents): This group of users visited Weibo less frequently (48% visiting Weibo less than once per day) and left Weibo quickly in each visit. They contributed almost nothing on Weibo. Very rarely would they post, repost, or comment on content. Different from Renren lurkers, Weibo lurkers did not have a strong motive for social interaction. The strongest motive for them was information seeking.

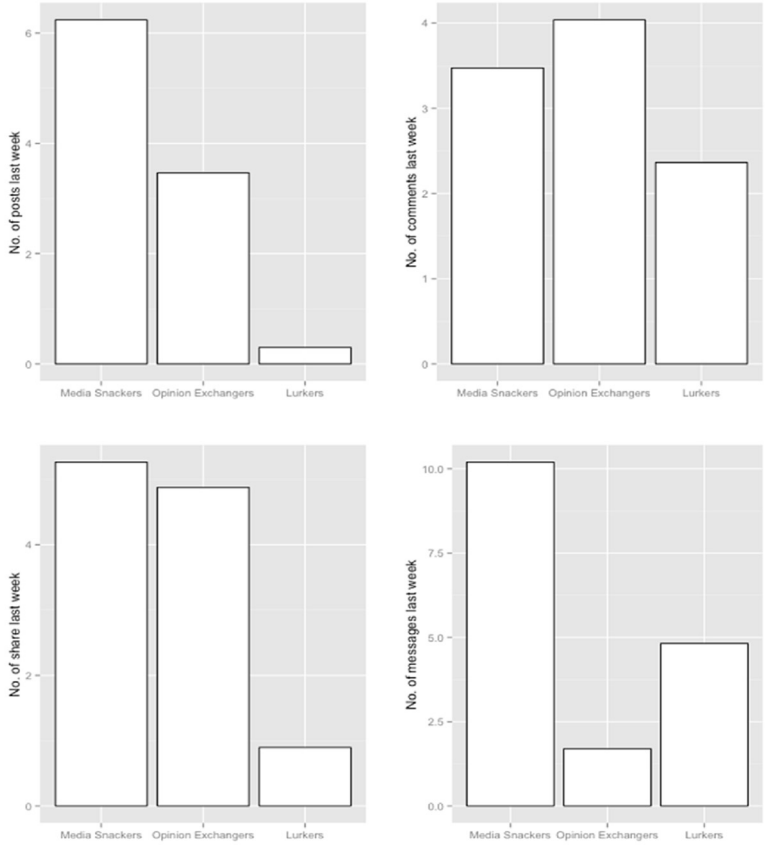
There are both similarities and differences between the usage patterns of Renren and Weibo. First, both sites have a group of media snackers, who pay frequent but short visits to the sites. This result is consistent with a prior report by Localytics (2014), which found that social networking apps exhibit "snacking"-like behavior with the highest use frequency and lowest session length among mobile apps. But the percentage of such habitual users seems larger for Weibo than for Renren. Second, both sites have a group of silent users, or lurkers, who visit the sites from time to time but seldom appear in public by posting or reposting. But they differ in social interaction activities: whereas Renren lurkers maintain a certain level of interaction with other users by commenting and messaging, Weibo lurkers rarely interact with other users. Previous research found that the biggest reason for people lurking in online communities is that their information needs can be satisfied without posting (Nonnecke, Preece, Andrews, & Voutour, 2004; Preece, Nonnecke, & Andrews, 2004). We found this reason may



(a). Visit frequencies of the Renren user clusters



(b). Visit durations of the Renren user clusters



(c). Posting, sharing, commenting, and messaging activities of Renren user clusters

Fig. 1. Features of Renren user clusters.

Table 11
Gratifications of different user groups on Renren and Weibo.

Renren users	Media snackers (n = 77)		Opinion exchangers (n = 56)		Lurkers (n = 76)		$X^2_{(2)}$	p
	M	SD	M	SD	M	SD		
Information seeking	4.86	1.14	4.57	1.21	4.66	1.17	2.34	0.31
Entertainment	4.73	1.34	4.53	1.08	4.30	1.17	5.68	0.058
Social interaction	5.43	0.78	5.31	0.74	5.29	0.91	0.67	0.71
Self-expression	5.00	1.11	5.17	0.94	4.48	1.25	13.71	0.001*
Impression management	4.28	1.30	4.07	1.30	3.78	1.29	7.12	0.03*
Weibo users	**Media snackers (n = 95)**		**Information digesters (n = 37)**		**Lurkers (n = 29)**		$X^2_{(2)}$	p
	M	SD	M	SD	M	SD		
Information seeking	5.17	0.92	5.58	0.93	4.87	1.37	6.19	0.045*
Entertainment	4.99	1.04	5.05	1.08	4.74	1.20	1.23	0.54
Social interaction	5.07	0.97	5.24	0.98	4.78	1.36	2.03	0.36
Self-expression	5.31	0.88	5.48	0.77	4.76	1.35	5.38	0.07
Impression management	3.91	1.15	4.01	1.41	3.70	1.53	1.28	0.52

*: <0.05.

apply to Weibo lurkers well—their strongest gratification is information-seeking—but not to Renren lurkers. Renren lurkers stay in the community mainly for keeping touch with others by following others' posts, occasionally commenting, and messaging. Finally, both sites have a group of users who may not visit the sites as frequently as media snackers, but who often spend more time than snackers. Whereas such a prolonged usage of Renren seems driven by the desire to express themselves through engaging heavily in discussion with other, the prolonged usage of Weibo seems driven by users' enormous passion for information.

4. Study 2

4.1. Research questions

The first objective of study 2 was to validate the motivation structure for using Renren and Weibo developed in study 1. The second objective was to explore the impact of different content strategies of social media branding on Renren and Weibo users. According to the results of study 1, people use Renren and Weibo for different purposes. Users' motivation will influence how they accept and process information they receive. Thus we expected that Weibo and Renren users would be attracted by different brand content strategies.

Different from advertising on traditional media such as TV that mainly aims to increase exposure, marketing practice on social media often have dual goals: generating business exposure and managing brand relationship with consumers. Through a survey of brand home pages on Renren and Sina Weibo, we classified the brand content strategies on social media into three types (we focused on long-term brand management, so online campaigns and events were excluded from the scope of discussion):

- Strategy 1: Posting brand content only, such as information about the brand, its products and services, the company that owns the brand, and activities and events of the brand.
- Strategy 2: Posting brand and brand-extended content, such as related knowledge, news, and product category information. The aim could be linking the brand/product to current happenings and facilitating consumers' learning about the brand/product.
- Strategy 3: Posting brand content, brand-extended content, and social-oriented content. Social-oriented content refers to the messages that are not related to the brand/product but are provided to elicit social interactions with users or among users. Such content may include daily greetings, funny jokes, and discussions about different topics to encourage users to share their thoughts.

The aim of study 2 was to answer the following questions:

- RQ1. What are the associations between the gratifications of social media use and the brand equity measures?
- RQ2. What is the impact of different content strategies of social media branding on brand equity measures?
- RQ3. What is the difference between SNS and microblog systems, in terms of the effect of content strategies on brand equity measures.

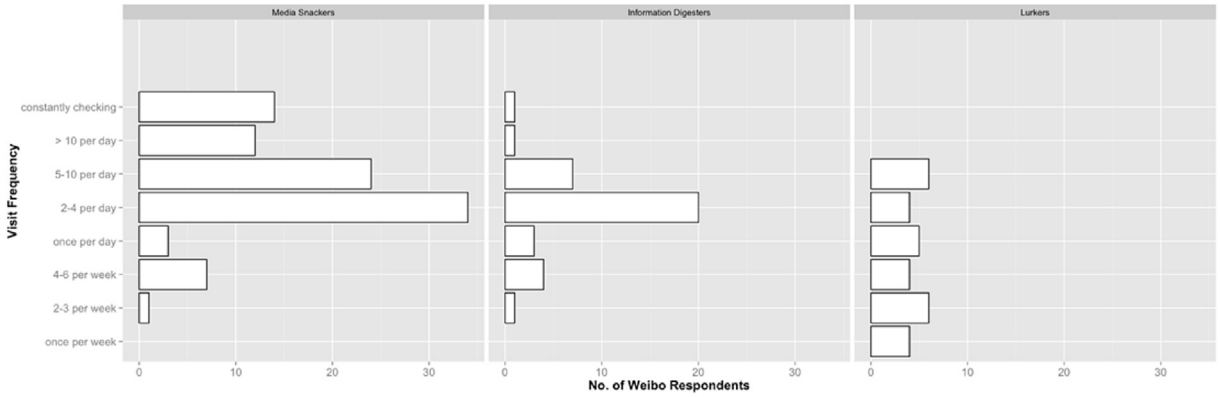
Information seeking has been found to be significantly associated with online news reading and sharing due to one's desire to stay up-to-date with current events (Lee & Ma, 2012; Lin et al., 2005, as cited in Lee & Ma, 2012). Muntinga, Moorman, and Smit (2011) found that, in addition to staying updated, information-oriented people also consume brand-related content to profit from others' knowledge and to get inspirations for product usages. Compared with strategy 3, strategies 1 and 2 are more information-rich and more likely to provide opportunities for learning and being inspired. Given that Weibo users are more information-oriented, we expect that among Weibo users, a content strategy focusing more on informative messages, such as strategy 1 and 2, messages, would lead to better brand equity than a strategy focusing less on informative messages, such as strategy 3.

Social-interaction gratification is often related to the tendency to affiliate with others, to achieve a sense of belonging, and to avoid remaining alone. Chung and Austria (2012) found that needs for social interaction significantly affect users' attitudes toward product messages on social media. Posting social-oriented messages may help demystify the brand image by showing its human involvement and satisfy users' needs for social interactions with brands. Given that Renren users are more social-oriented, we expect that among Renren users, a content strategy embracing social-oriented content, such as strategy 3, would lead to better brand equity than a strategy without such content, such as strategy 1 and 2.

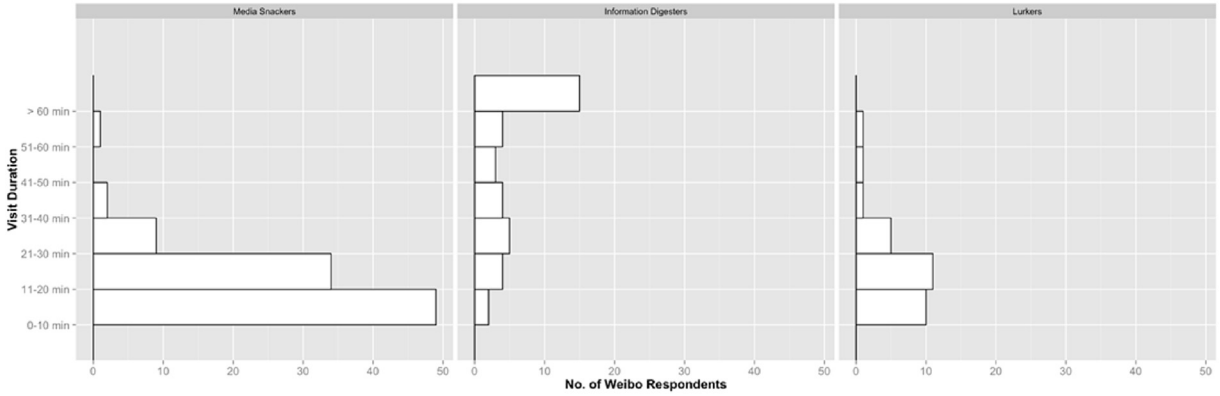
4.2. Methodology

4.2.1. Participants

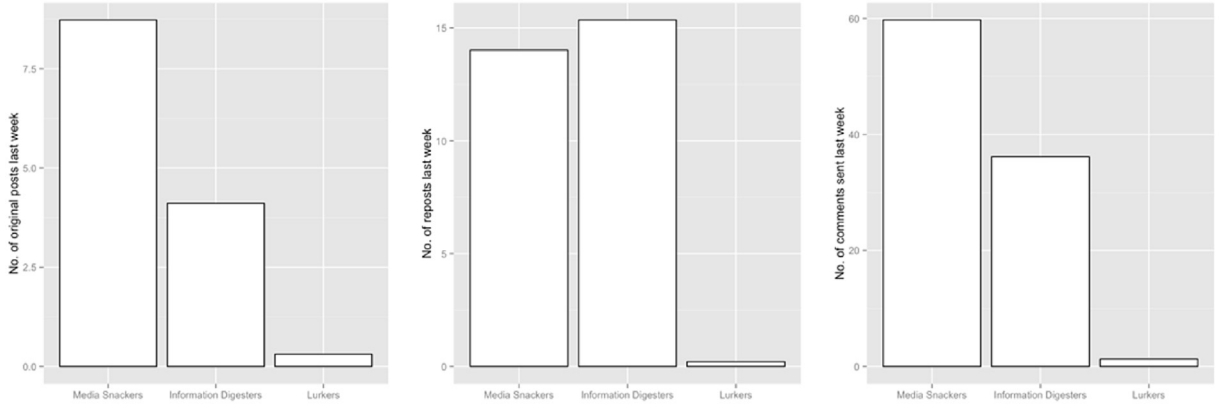
To test the hypotheses, a two-week experiment involving 66



(a). Visit frequencies of the Weibo user clusters



(b). Visit durations of the Weibo user clusters



(c). Posting, sharing, and commenting activities of Weibo user clusters

Fig. 2. Features of the Weibo user clusters.

Renren users and 66 Weibo users was conducted. An online recruitment website was constructed and administrated through the same channels as in study 1. At the end of a research introduction on the homepage, the responder was asked to select from Renren and Sina Weibo the one they used more frequently. Upon his or her selection, the responder would be prompted with three questions: (1) "Have you used Renren/Sina Weibo for at least one month?" (2) "Do you use Renren/Sina Weibo at least once per day?" and (3) "In the upcoming three weeks, do you anticipate any sudden changes to your usage of Renren/Sina Weibo (e.g., to be on a trip with limited internet access)?" Only those who answered "yes" to question 1 and 2 and "no" to question 3 would be invited to participate the experiment and asked to leave their contact information to the researchers. The purpose was to ensure that the participants were heavy social media users and that their usage in the experiment period would not change suddenly.

Six Renren users and five Weibo users gave up in the middle of the experiment, leaving 60 Renren users and 61 Weibo users in the final dataset. Table 12 shows the background statistics of the participants. Among them, 117 were college students and the other

four were research assistants at colleges. The Renren participants were 22.89 (SD = 1.82) years old on average; 47% of them were undergraduates and 53% were graduate students. The Sina Weibo participants were on average 24.00 (SD = 2.28) years old; 34% of them were undergraduates and 66% were postgraduates. The participants from each site were randomly assigned to one of three conditions, in which they received messages following strategy 1 (brand content only), strategy 2 (brand and brand-extended content), or strategy 3 (brand content, brand-extended content, and social-oriented content). There were 20 participants in each condition for each site, except for the strategy 1 condition for Weibo (21 participants).

4.2.2. Stimulus design

To avoid the influence of participants' existing knowledge and formed attitudes, two fictitious brands were created for the study: Brand 1 specialized in providing food and beverage services for casual occasions while Brand 2 specialized in producing and selling digital products. According to the survey results in study 1, "food and beverages" and "digital products/home appliances" were the two most interesting brand categories for social media users. For each brand, we created three types of messages, including 42 brand content messages, 21 brand-extended content messages, and 14 non-brand content messages. With strategy 1, 42 brand content messages were posted during two weeks; with strategy 2, 21 brand content messages and 21 brand-extended content messages were posted; and with strategy 3, 14 of each type of message were posted. Samples of each of the three types of brand messages are shown in Table 13.

Past research has indicated that posting frequency, the timing of posting, message modality, and message appeal may influence the effectiveness of brand management. We controlled these factors in the following ways. Every day, three messages were posted: one in the morning, one in the afternoon, and one in the evening. Each message consisted of a picture and corresponding text description. Both rational appeals and emotional appeals were employed in the messages.

4.2.3. Measurements

- **Gratifications of social media use**: The participants' gratifications of Weibo/Renren use was measured by the scale developed in study 1. The scale consisted of 27 items addressing five dimensions of gratifications of social media use. A seven-point Likert scale (where 1 = "strongly disagree" and 7 = "strongly agree") was used for the measurement. The participant's score on a gratification was calculated by summing weighted scores of items belonging to that gratification. The weighted item scores were calculated by multiplying the raw item scores by factor loadings specified through confirmatory factor analysis (see details in Section 4.3.1) as weights.
- **Perceived exposure** was measured by a self-report question ("How many messages from the brand account did you see per day according to your perception?") and a single-choice question ("Do you think this frequency is too many/too few/proper?").
- **Brand awareness**: Brand awareness reflects the salience of the brand in consumers' minds and can be measured as brand recognition or brand recall (Aaker, 1996). In this study, we chose to measure brand recall because brand recognition might be too simple for the participants who had been continually exposed to brand messages for two weeks. Brand awareness was measured from two perspectives:
  - Brand knowledge: The participants were asked to write down as many of the brand's products and services as possible. They received one point for each correct product or service category.
  - Brand opinion: The participants were asked to write down their understanding and opinions of the brand. They received one point for each independent opinion about the brand.
- **Brand association**: Brand association was measured by both closed and open questions. Three 7-point closed items developed by Yoo and Donthu (2001) were used, including "some characteristics of X come to my mind quickly," "I can quickly recall the symbol or logo of X," and "I have difficulty imagining X in my mind." Furthermore, the participants were asked to write

Table 12
Demographic information of the participants in study 2.

Variable		Renren N = 60		Weibo N = 61	
		Mean	SD	Mean	SD
Computer experience (years)		10.59	3.21	11.54	2.83
Internet experience (years)		8.25	2.50	9.82	2.63
Age		22.89	1.82	24.00	2.28
Variable	Value	Frequency	Percentage	Frequency	Percentage
Gender	Male	31	51.67	33	54.10
	Female	29	48.33	28	45.90
Education level	Bachelor	28	46.67	21	34.43
	Master	20	36.67	24	39.34
	PhD	10	16.67	16	26.23
Employment status	Student	59	98.33	58	95.08
	Worker	1	1.67	3	4.92
Major (student)	Engineering	47	76.67	48	82.76
	Science	5	8.33	2	3.45
	Economics & management	2	3.33	5	8.62
	Social science	2	3.33	2	3.45
	Law	2	3.33	1	1.72
	Art	1	1.67	0	0
	Others	1	1.67	0	0
Major device used to visit Renren or Weibo	PC	53	88.33	52	85.25
	Smart phone	7	11.67	7	11.48
	Tablet PC	0	0	1	1.64
	Other	0	0	1	1.64

*: <0.05, **: <0.001.

Table 13
Example messages used in Study 2.

Brand content message	【冷岛主打】蓝莓/草莓冰淇淋：香甜浓郁的鲜奶，细致润滑，配上敲到好处的新鲜蓝莓/草莓，点缀出青春的纯真。非常美好的感觉！  [IceIsland Special] Blueberry/strawberry ice-cream: The best quality cream, smooth as silk, combined with fresh blueberries/strawberries, will bring you back to your youth. A delightful experience indeed!
Brand-extended content message	葡萄酒小常识：酒标上写的年份是指"葡萄收获的年份"。葡萄酒的品质与果实，葡萄的质量和天气息息相关。光照、降水、气温、季风等自然灾害都会影响葡萄质量。少雨温暖的年份，葡萄更易充分成熟，糖度、酸度、单宁和香气、色泽都很优秀。2000和2005正是法国酒的好年份，有机会可以辨识一下哦。  Wine tips: The vintage year on wine labels refer to the year in which the grapes for a particular wine were harvested. The quality of grape has a direct influence on the quality of the wine. Sun exposure, the temperature, the amount of rainfall, and other aspects of climate, such as wind exposure, will influence the quality of the grapes. In warm years with a balanced amount of rainfall, grapes will ripen properly, with good sweetness, sourness, tannin, and flavor. The years 2000 and 2005 were good for French vineyards. Try to tell the difference brought by the vintage year if you have an opportunity!
Non-brand content message	今天晚上北京要下大雨！还在外面的孩纸赶快回家啦！晚安~  It is going to rain heavily today! Better go home early, boys and girls who still stay outside! Have a nice sleep~

down the features and impressions associated with the brand (one point for each different feature/impression) and to draw the logo of the brand by themselves (one point for the correct text on the logo, one point for the layout, one point for the foreground color and one point for the background color).

- **Brand personality**: Brand personality may enhance the brand's emotional and self-expressive benefits, especially for brands that have minor physical differences and that are consumed in a social setting. Brand personality was measured by assessing whether the participants used words or descriptions that reflected the existence of a human personality in answering the questions of brand opinion and brand association. If they did, we judged that the brand successfully established a personality for the participants; otherwise, we judged that the brand failed to do so.
- **Brand attitude**: Brand attitude was measured by a scale developed by Mitchell (1986). The scale consists of six 7-point items, including attractive/unattractive (reversed), negative/positive, bad/good, unpleasant/pleasant, interesting/boring (reversed), and dislike/like. The Cronbach's alpha of the scale was 0.91, indicating a good level of reliability.
- **Participation intention**: Participation intention refers to the extent to which the participants were willing to be engaged in the interaction with the brand. It was measured by six 5-point scales, as follows: "I will follow the brand in the future," "I want to know about the brand and its products/services in the future," "I will comment on the message posted by the brand account," "I will recommend the brand to my friends on Renren (Sina Weibo)," "I will forward the messages posted by the brand account," and "I will participant in the online campaigns of the brand." The Cronbach's alpha of the scale was 0.86, indicating an acceptable level of reliability.
- **Product category involvement**: The participants' involvement with a certain product category influenced their knowledge and attitude toward brand messages belonging to that product category. We measured the participants' involvement with the two types of products used in our experiment using eight 7-point items adopted from Zaichkowsky's Personal Involvement Inventory (Zaichkowsky, 1994), namely, "unimportant/

important," "unconcerned/concerned," "irrelevant/relevant," "means nothing to me/means a lot to me," "interested/uninterested" (reversed), "boring/interesting," "exciting/unexciting" (reversed), and "appealing/unappealing" (reversed). The Cronbach's alpha of the scale was 0.93, indicating a good level of reliability.

4.2.4. Procedures

Before the experiment, the participants were invited to the lab and the experimenter introduced the research purpose and procedures. The participants were told that the two brands used in the experiment were real brands newly found by two start-up companies. Then the participants filled out a questionnaire about their background information, motivation to use Renren or Sina Weibo, and their involvement with the two types of products: food and electronics. After that, they were instructed to add the two brand accounts—set up previously by the researcher—as friends on Renren or to follow the brand on Weibo. In the following two weeks, each experiment account sent three messages per day; the timing and the content of the messages were described in the section of stimulus design. Two weeks later, the participants were invited to the lab again, to complete a questionnaire about their attitude toward the two brands, as well as brand awareness, brand association, brand personality, and participation intention. Each participant was then compensated 60 RMB for his or her participation in the study.

4.3. Results

4.3.1. Validation of the gratifications of social media use

Confirmatory factor analysis was used to validate the gratification model proposed in study 1. The results of the structure equation model is shown in Fig. 3 (chi-square value = 46.064, degree of freedom = 308, $p < 0.001$); the standardized regression weights are displayed on the one-way links and the correlation coefficients are displayed on the two-way links. The RMSEA of the model was 0.065, the CFI was 0.912, and the TLI was 0.900, indicating that model had acceptable fitness. The results of the confirmatory factor analysis indicated that the factor structure of user gratifications proposed in study 1 was appropriate and adequate. Information seeking, entertainment, self-expression, social interaction, and impression management are major aspects of users' motivation to use social media.

4.3.2. Influence of gratifications on brand equity measures

To understand how the participants' gratifications influence their perception of brand messages disseminated through social media, their attitude toward the brand, and their participation intention, correlation analysis was carried out to examine the associations among the variables. Table 14 shows the results after adjusting for multiple correlation tests with Benjamini-Hochberg method. The gratification of impression management was positively related to the intention to participate in brand-related activities for both brands (food brand: $r = 0.33$, $p < 0.01$; electronics brand: $r = 0.30$, $p = 0.02$). Self-expression was positively related to participation intention for the food brand ($r = 0.31$, $p = 0.01$) but not for the electronic brand. No significant correlations between gratifications and perceived exposure or between gratifications and brand attitude were found.

4.3.3. Product category involvement

Fig. 4 shows the level of involvement of the two product types involved in our experiment. The difference across sites, strategies, and product types was tested through a three-way mixed ANOVA, and the results showed that the main effect of product type was significant [$F(1, 115) = 12.72$, $p < 0.001$, eta-square = 0.04]. The participants were more involved with electronics than with food. Due to this significant difference in involvement, we did not collapse data across product types but analyzed the data for the two products respectively in the following data analysis. There was no significant difference in product category involvement across sites or strategies.

4.3.4. Perceived exposure

Fig. 5 shows the number of messages the participants perceived that they received per day. We examined the effect of websites and strategies with two-way ANOVA and found a significant effect of websites on perceived exposure for both brands. The Renren participants perceived a higher level of exposure (food brand: $M = 2.46$, $SD = 1.15$; electronics brand: $M = 2.03$, $SD = 1.07$) than did the Weibo participants [food brand: $M = 1.78$, $SD = 0.99$, $F(2, 114) = 12.02$, $p < 0.001$; electronics brand: $M = 1.70$, $SD = 1.09$, $F(2, 114) = 4.53$, $p = 0.036$]. Furthermore, about 51% of Weibo participants considered that the posting frequency of both brands was too

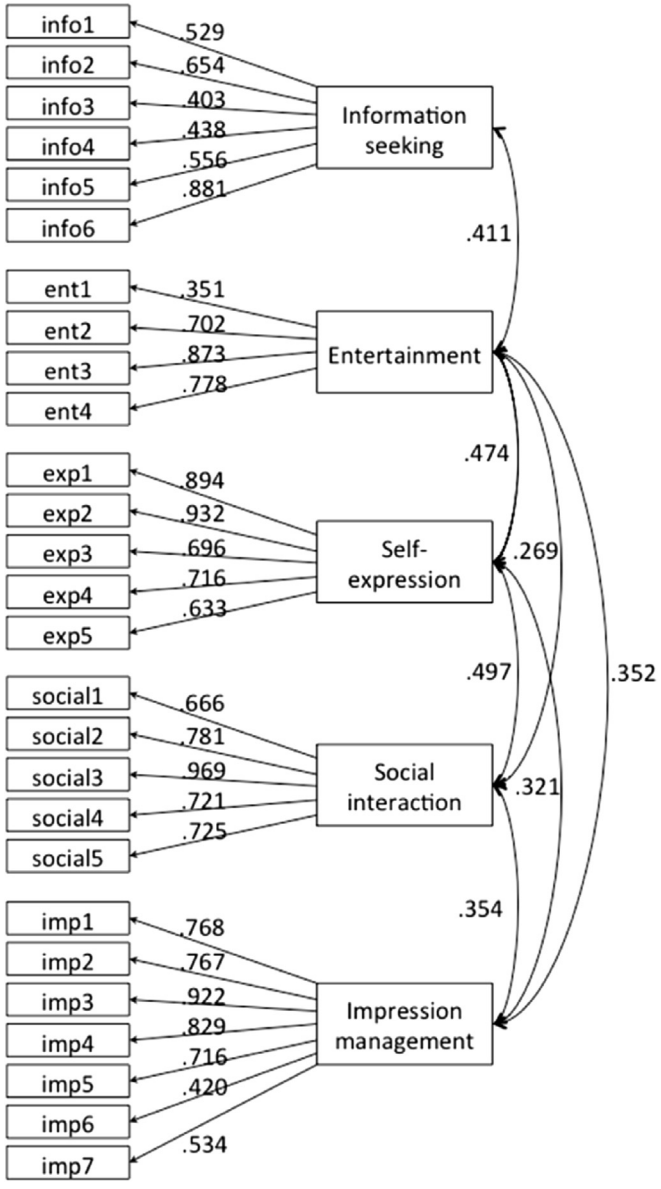


Fig. 3. Confirmed factor structure of the gratifications of social media use.

Table 14
Correlations between gratifications and brand equity measures.

Gratifications	Perceived exposure		Brand attitude		Participation intention	
	r_{brand1}	r_{brand2}	r_{brand1}	r_{brand2}	r_{brand1}	r_{brand2}
Information seeking	0.01	0.08	0.11	0.25	0.13	0.17
Entertainment	0.05	0.10	0.16	0.11	0.16	0.14
Social interaction	0.03	0.02	0.08	0.07	0.13	0.14
Self-expression	0.09	0.05	0.18	0.07	**0.30***	0.13
Impression management	0.07	0.06	0.22		**0.34***	**0.30***

*: Significance at the level of .05 ($p < 0.05$) are in bold.

low, whereas this percentage for Renren participants was 20% for the food brand and 35% for the electronics brand. The food-brand-related difference was significant [$\chi 2(2) = 14.39$, $p < 0.001$].

The correlation analysis of the relationships between perceived exposure and brand equity measures (Table 15) indicated that the perceived exposure had significant or marginally significant associations with brand knowledge, brand opinion, and self-rated brand association. Therefore, perceived exposure was included as a covariate in the following analysis of these variables.

4.3.5. Impact of social media platforms and brand strategies

4.3.5.1. Brand awareness. The impact on brand awareness measures was analyzed by general linear model analysis with sites, content strategies, and their interactions as fixed factors and perceived exposure as covariates. The results indicated that perceived exposure had a significant positive effect on brand knowledge and brand opinion for both brands (all $p < 0.05$, except for brand knowledge of the food brand: $p = 0.11$). But no significant effects of either sites or content strategies on brand awareness measures were found. (see Fig. 6).

4.3.5.2. Brand association. The brand association measures of different experimental groups are shown in Fig. 7. The impact on brand association measures (association of characteristics, association of logo, self-rating) was analyzed by general linear model analysis with sites, content strategies, and their interactions as fixed factors and perceived exposure as covariates. A significant effect of the interaction of social media sites and brand content strategies on self-rating of brand association of the food brand was found [$F(2, 113) = 3.67$, $p = 0.029$]. Simple main effect analysis showed that the effect of content strategy was marginally significant on Weibo [$F = (2, 57) = 3.03$, $p = 0.056$] but not significant on Renren. Post hoc analysis showed that strategy 2 led to the best self-rated brand association, followed by strategy 3 and then strategy 1 on Weibo. The difference between strategy 2 (adjusted mean: LSM = 4.55, SE = 0.26) and strategy 1 (adjusted mean: LSM = 3.70, SE = 0.25, $t = 2.34$, $p = 0.058$) reached marginal significance. No significant effects on association of brand characteristics and brand logo were found.

4.3.5.3. Brand personality. Table 16 shows the number of participants who perceived personality traits about the brands under different conditions. To determine whether the likelihood of perceiving personality of the food brand was associated with social media platforms and content strategies or not, we conducted log-linear analysis, a more robust analysis than the chi-square test for complicated contingency tables involving more than two categorical variables (Simkiss, Edbrahim, & Waterston, 2012). The results showed that the interaction between sites, content strategies, and perception of brand personality was significant [chi-square (2) = 6.51, $p = 0.038$]. To break down this three-way effect, separate chi-square tests for Renren and Weibo participants were performed. For Renren participants, there was a significant association

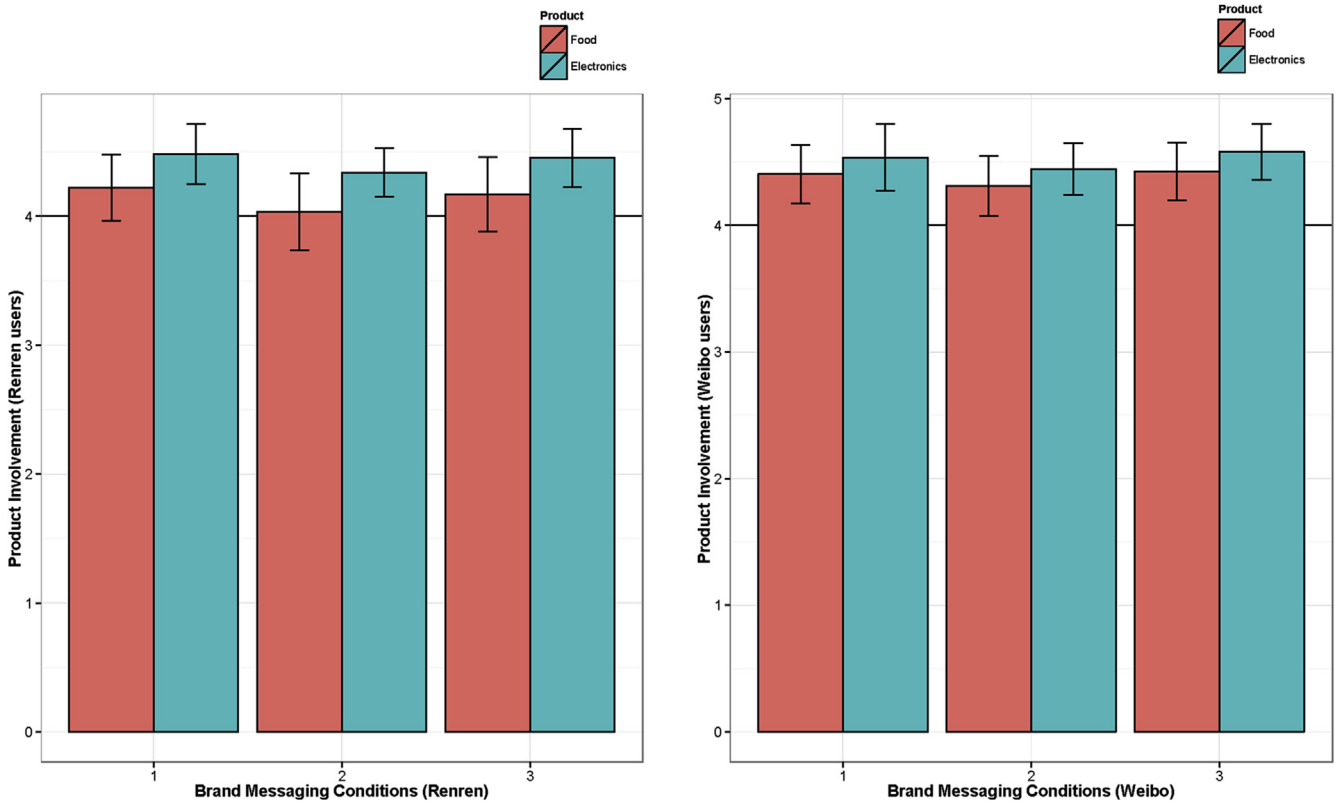


Fig. 4. Product Category involvement of Renren and Weibo users in study 2.

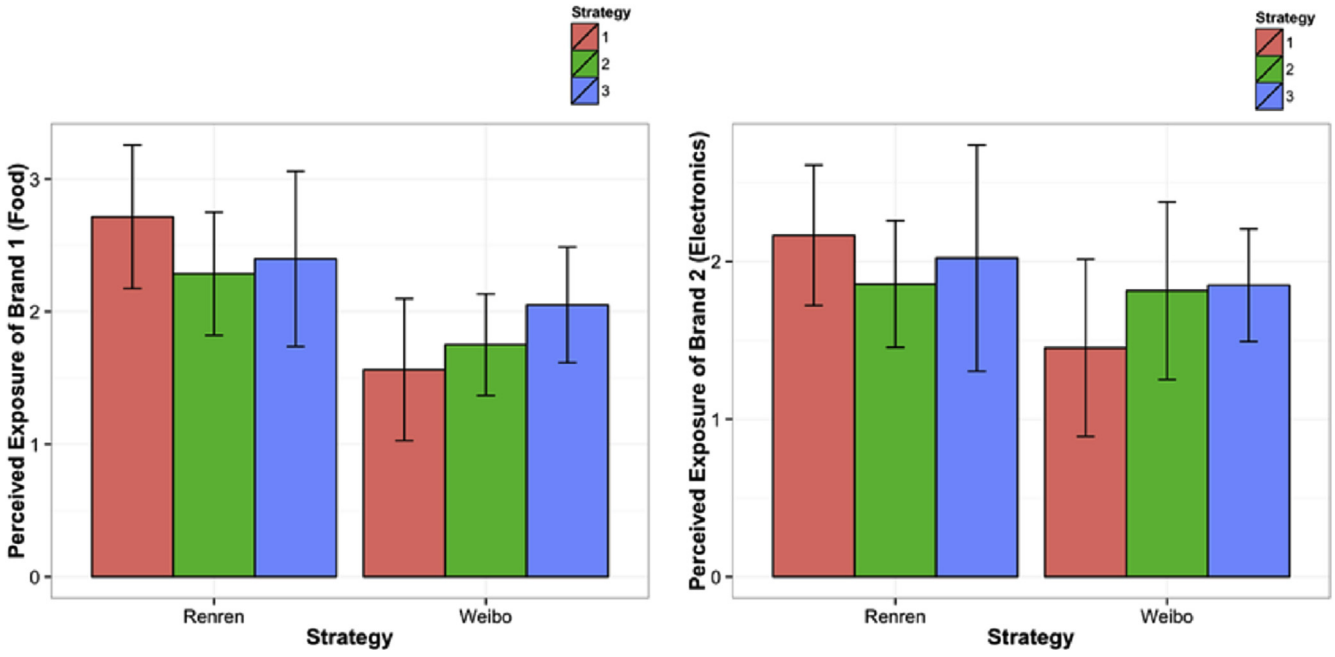


Fig. 5. Perceived exposure of Renren and Weibo users in study 2.

Table 15
Correlations between perceived exposure and brand equity measures.

Brand equity measures		Brand 1 (food)		Brand 2 (electronics)	
		r	p	r	p
Brand awareness	Brand knowledge	0.15	0.11	0.35	<0.001**
	Brand opinion	0.20	0.03*	0.22	0.01*
Brand association	Characteristics	0.11	0.24	0.15	0.10
	Logo	0.02	0.79	0.12	0.21
	Self-rating	0.28	<0.001**	0.21	0.02*
Brand personality		−0.10	0.28	0.14	0.13
Brand attitude		0.06	0.52	−0.05	0.59
Participation intention		0.08	0.37	0.03	0.76

between content strategies and their perception of brand personality [chi-square (2) = 0.005]. With strategy 3, a higher number of Renren participants (n = 9) perceived brand personality than was expected (n = 4.5, z = 2.12, p = 0.02, one-tailed test); with strategy 1, a lower number of Renren participants (n = 1) perceived brand personality than was expected (n = 5.25, z = 1.86, p = 0.03, one-tailed test). For Weibo participants, no significant effect was found.

The data of the electronic brand did not meet the prerequisite of sample size for log-linear analysis or Pearson's chi-square test. Therefore, two Fisher's exact tests were performed to examine the influence of social media sites and content strategies on brand personality. The results showed a significant association between social media sites and brand personality (p < 0.001): a higher percentage of Renren participants (16.95%) perceived brand personality than did Weibo participants (0). The association between content strategy and brand personality was not significant.

4.3.5.4. Brand attitude. The participants' attitude toward the two brands are shown in Fig. 8 as a function of social media sites and content strategies. The impact on brand attitude was analyzed by general linear model analysis with social media sites, content strategies, and their interactions as fixed factors and product category involvement as the covariates. The results showed a marginal significant effect of content strategy on both attitude toward the food brand [F (2, 114) = 0.2.42, p = 0.09] and attitude toward the electronics brand [F (2, 114) = 2.18, p = 0.12] after controlling for the effect of product category involvement. Further analysis revealed that the marginal significant effect of the content strategy existed among Renren participants for both brands [food: F (2, 56) = 2.51, p = 0.09; electronics: F (2, 56) = 2.23, p = 0.12], but not among Weibo participants. For both brands, strategy 2 led to the best brand attitude among Renren participants, followed by strategies 1 and 3. The differences between strategy 2 (food: LSM = 5.82, SE = 0.21; electronics: LSM = 5.38, SE = 0.22) and strategy 3 were marginally significant for both brands (food: LSM = 5.13, SE = 0.23, t = −2.23, p = 0.07; electronics: LSM = 4.77, SE = 0.23, t = −1.91, p = 0.15).

4.3.5.5. Participation intention. The participants' intention to participate in the interaction with the two brands is shown in Fig. 9 as a function of social media platform and content strategy. The impact on brand attitude was analyzed by general linear model analysis with social media platform, content strategy, and their interactions as fixed factors and product category involvement as the covariates. No significant effects were found.

4.4. Discussion

4.4.1. Gratifications of social media use and participation intention

The correlation analysis showed that impression management was positively related to the intention to participate in brand-related social media use. This phenomenon can be attributed to the self-enhancement motive of people, a basic desire to enhance the positivity and decrease the negativity of the self-concept (Sedikides & Strube, 1995). Being associated with a proper brand may place the self in a favorable position. Previous research on offline word-of-mouth (WOM) behaviors showed that self-enhancement is an important motivation of WOM behaviors. Providing WOM is often a means of gaining attention and asserting a desired sense of self. Ho and Dempsey (2010) found that people with a strong need to show their uniqueness are more likely to forward online content to others. Muntinga et al. (2011) interviewed people engaged in brand-related social media activities and found that presenting others with an

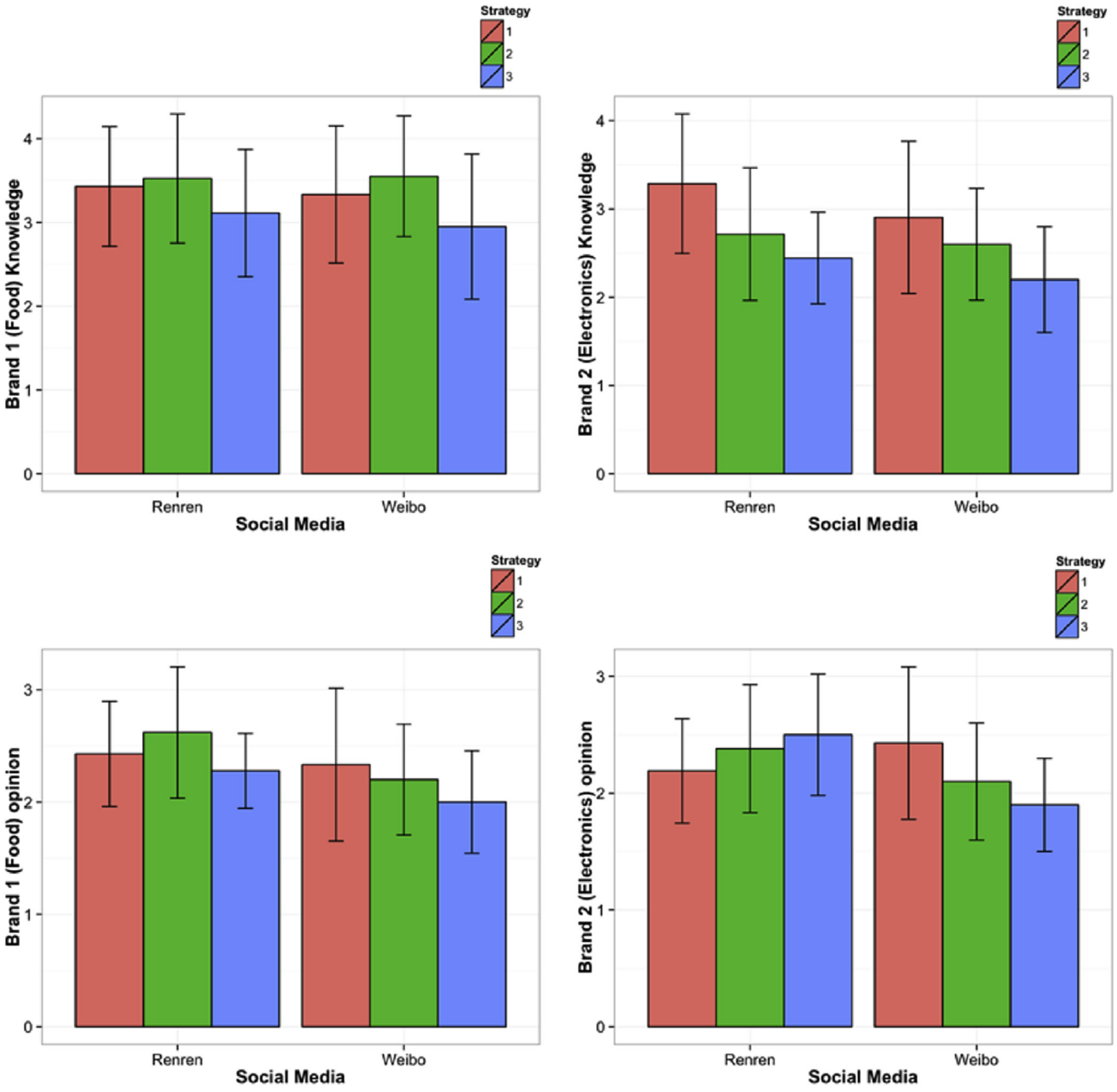


Fig. 6. Brand awareness of Renren and Weibo users in study 2.

image of their asserted personality is one of the motivations for contributing to brand-related content. Another survey study of Korean consumers also found that self-enhancement is an important intrinsic motivation of e-WOM participation (Yoo, Sanders, & Moon, 2013). Consistent with these studies, our results suggest that people who use social media as a means of promoting themselves are more likely to follow the brand, forward and comment on brand messages, and participate in brand-related activities on social media.

Self-expression was positively associated with participation intention for the food brand but not the electronic brand. Whereas impression management is related to self-enhancement or the assertion of a positive self-concept, self-expression is related to self-verification, which refers to confirmation and maintenance of the established self-concept, be it positive or negative (Sedikides & Strube, 1995). Engaging in social media activities related to certain brands has the potential to help to express one's identity (Muntinga et al., 2011), but the extent of self-expression may depend on the similarity between the brand image and the self-image, as well as the importance of the product category to the consumer (Taylor, Strutton, & Thompson, 2013). Therefore, the motivation to use social media to express oneself alone may not predict participation intention.

The gratification of social interaction was not related to participation intention. Prior research on this relationship provides discrepant results: whereas Ho and Dempsey (2010) found that the need to belong has no significant influence on the intention to forward online content, Chi (2011) found that the need for online bonding is a positive predictor of participation intention of Facebook advertising campaigns. Interestingly enough, Chi also found a negative influence of online bonding on participation intention in

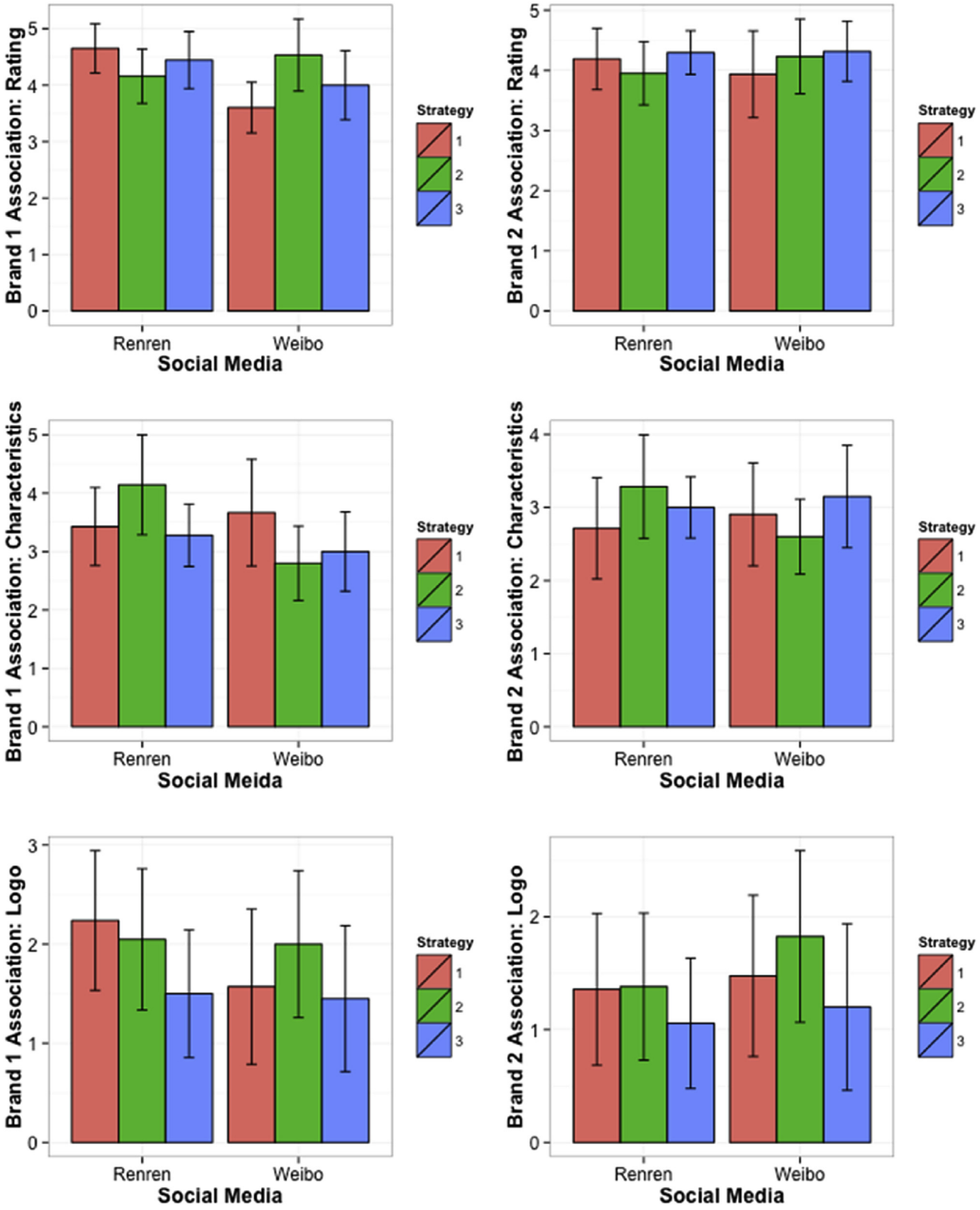


Fig. 7. Brand association of Renren and Weibo users in study 2.

Facebook virtual brand communities. Our results are consistent with Ho and Dempsey's finding as well as the latter finding from Chi. Whereas connecting with others is a major motivation for using social media, interacting with commercialized brands is not considered the best means to meet this need.

4.4.2. Influence of platforms and content strategies

Our results show that building brands on different social media

Table 16
Number of participants recognizing brand personality in different conditions.

Brand equity measures		Renren		Weibo	
		Perceived brand personality	Did not perceive brand personality	Perceived brand personality	Did not perceive brand personality
Brand 1 (food)	Strategy 1	1	20	7	14
	Strategy 2	5	16	5	15
	Strategy 3	9	9	7	13
Brand 2 (electronics)	Strategy 1	1	20	0	21
	Strategy 2	4	16	0	20
	Strategy 3	5	13	0	20

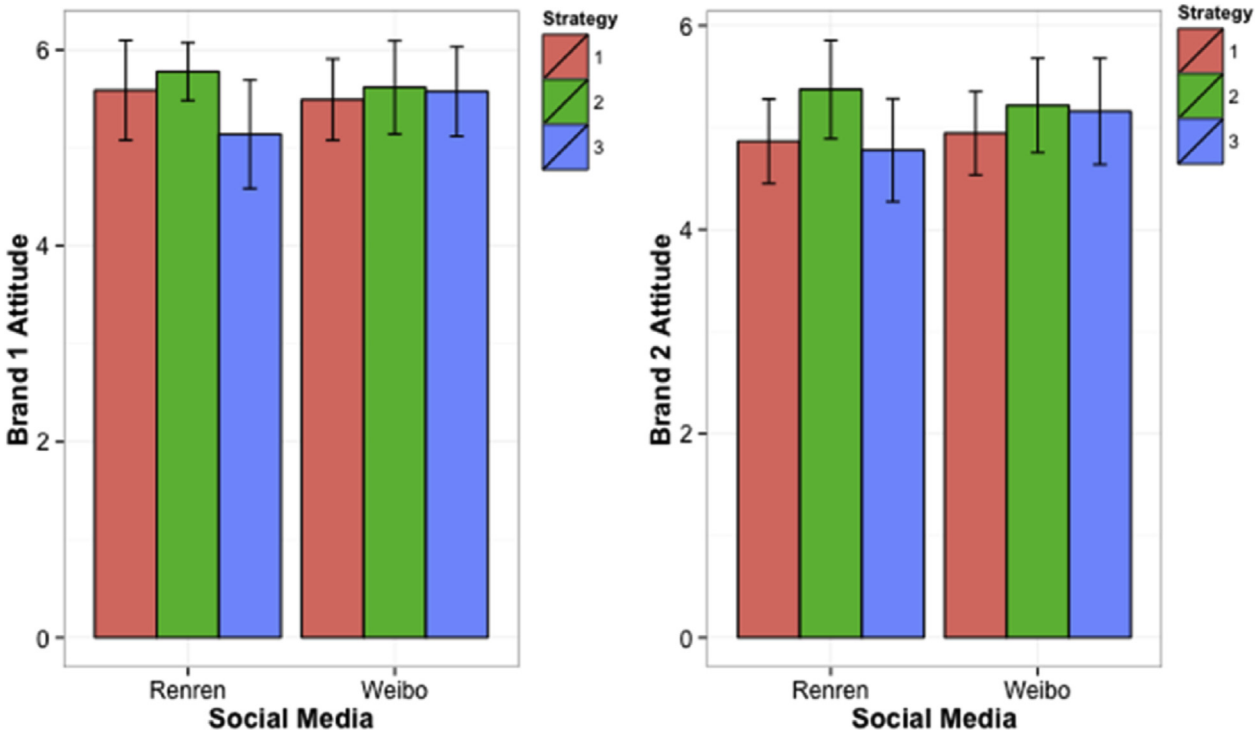


Fig. 8. Brand personality of Renren and Weibo users in study 2.

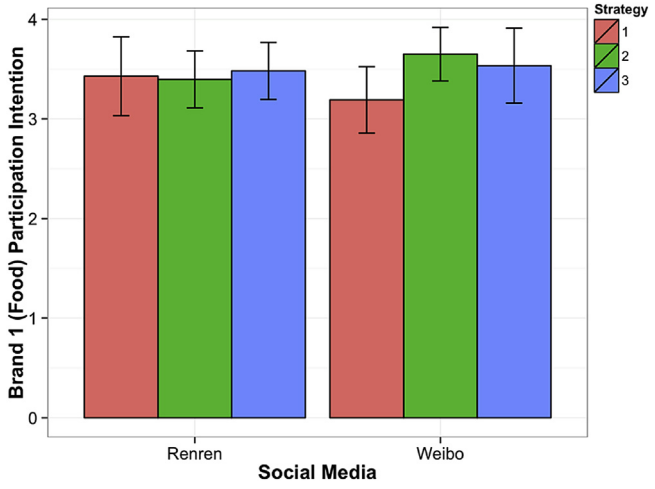


Fig. 9. Participation intention of Renren and Weibo users in study 2.

platforms requires different planning. First, posting the same amount of information at the same frequency leads to different levels of perceived exposure on different platforms. Compared with Renren users, Weibo users perceived a lower level of exposure and were more likely to consider the posting frequency (three times per day) too low to make an impression. A possible reason is that Weibo is used more as an information and entertainment seeking tool and that people are more active in posting and reposting on Weibo (as found in study 1). The exposure of the branding messages is likely to be diluted by the large amount of information that Weibo users generate and receive. To elicit the same level of perceived exposure, the posting frequency should be higher on microblog sites than on SNSs.

Second, the social media platform has a moderating role on the effect of brand content strategies. Our results show that Renren users are more sensitive to the difference in content strategies, but it is difficult to draw a simple conclusion such as which strategy is the single best solution on Renren. Whereas strategy 2 led to more favorable brand attitudes, strategy 3 led to stronger perceptions of brand personality. The results provide two practical implications: first, providing knowledge, news, and information related to product category effectively improves brand attitudes, compared with providing only brand-related information. Providing such brand-extended information connects the consumers to a larger field of knowledge and allows them to learn and to infer things. It

may help to build a brand image more trustworthy. Furthermore, consumers may perceive the brand to be subtler in its branding approach, which is associated with sophistication and things of an upper-class nature (Aaker, 1997).

Second, including social-oriented content in brand messages on SNSs effectively enhances users' perceptions of brand personality, but the recognition of brand personality alone is not enough to elicit a more favorable evaluation of the brand. To achieve a better evaluation and connection with the brand, the congruency between brand personality and self-concept is needed, as found by a number of consumer studies (Escalas & Bettman, 2003; Sirgy, Grewal, & Mangleburg, 2000). Brand identification occurs when an individual sees his or her self-concept congruent with a brand's image, which may lead to more robust brand attitude, more trust, and more brand loyalty (Aaker, 1999; Escalas & Bettman, 2003; Fournier, 1998). Due to the limitation in the measurement of brand personality—we only measured the recognition of brand personality but not specific brand personality traits—we were unable to examine such relationships in the current study. How to devise branding content on social media to strengthen the brand identification would be an interesting and challenging topic for future research, particularly when we consider that the self is a malleable construct—people act differently in different contexts (Aaker, 1999).

5. Conclusion

5.1. Contributions of the current study

The aim of the current study is to examine the difference in Chinese users' gratifications of different social media and their implications for designing brand content strategies on social media. Whereas the first study examines the use of different social media being driven by different gratifications, the second study explores the influence of such differences on users' perceptions of and attitudes to social media branding using an experiment. The study contributes to the field in a number of ways.

First, this study identifies and validates the factor structure of social media gratifications for Chinese users. The exploratory factor analysis indicates that the five-dimension structure is reliable across different social media platforms (SNS and microblog in the current study) and that the identified factors can explain about 70% of the total variance. The confirmatory factor analysis indicates that the established model of gratifications is appropriate and adequate.

Second, to the best of our knowledge, we are the first to compare gratifications and usage patterns of microblogs and SNSs. The results indicate that the strengths of different motivations vary significantly for different social media. The results enrich our understanding of multiple social media usage: whereas microblogs are used more for information seeking, entertainment, and self-expression, SNSs are used more for social interaction.

Finally, this study contributes to a growing body of literature about social media branding with a distinct focus on content design in continual brand-consumer communications. While there have been suggestions about what to post in social media branding, such as posting brand-extended content to increase the number of consumers and posting "unprofessional" content to develop the relational bonding (Kaplan & Haenlein, 2010), there have been no empirical studies to test the effectiveness of different content strategies. Our study provides direct implications for practitioners in this aspect. Furthermore, most experimental research on brand–consumer communications observed participants responding to a single exposure of brand messages or pages (Ang & Lim, 2006a; Escalas & Bettman, 2003; Kim & Ko, 2012a). A unique advantage of social media branding is its ability to engage consumers in long-term yet immediate conversations. Consumers' responses to a single exposure may change, accumulate, or decay along the conversations. By inviting the participants to follow the brand pages for two weeks, we were able to measure the long-term impact of brand content on brand perceptions.

5.2. Practical implications

One major aim of the current study was to provide research-based suggestions for practitioners who choose different social media platforms for branding. To this purpose, a difference between Weibo users and Renren users in our study is noteworthy: following brands was a more popular and more favored behavior among the Weibo users than among the Renren users. Does this difference indicate that microblogs are more suitable for branding than SNSs? Combining the results from the two studies, we conclude that there is not a definitive answer to which platform is better and that each platform has their unique potentials for bonding customers with brands.

Weibo has been found a promising tool for branding nearly from its establishment, due to its ability to spread information quickly and widely. As found in our studies, interacting with a brand embodying certain symbolic values that one agrees to can serve the strongest need that drive people to use Weibo, to express oneself. In addition, Weibo users are more active in posting and reposting than Renren users. This imply a higher potential for developing a viral trend via word-of-mouth communications. The shorter but more frequent updates on microblogs, however, also entails shorter attention spans given to a single update and higher possibilities of getting lost in the clutter. As found in Study 2, a higher posting frequency is needed to elicit perceptible exposures among Weibo users than among Renren users. Renren, however, started as a social networking site exclusively for students (later for general web users), with an emphasis on connecting with real-life friends online. The strongest driver of Renren use is social interaction. Connecting with a brand, a non-human party which users cannot not meet or talk to in person in real life, may not be the first idea for users to come to Renren. This stronger social interaction motivation, however, does not necessarily indicate deficient competency of SNS for branding. It may also imply opportunities for developing deeper engagement and stronger bonding with customers. As found in Study 2, SNS users are more likely than microblog users to associate a brand they followed with human characteristics. This benefits brands that aim to establish a strong brand personality. In addition, SNSs' unlimited character and media-rich posts are more suitable for sophisticated and long-lasting content (e.g., brand storytelling, as compared with short burst of information on microblogs); such content may inspire deeper communications and keep the conversations for a longer time. As a matter of fact, SNS such as Facebook is becoming more and more popular with advertisement. The recent advertisement revenue surge of Facebook also confirmed that SNS is a viable branding channel. In the end, many companies use microblog and SNS together to maximize their reach to customers. The real challenge thus is how to address the differences of motivations of users on different platforms and how to keep a consistent brand identity across media at the same time.

The need to express oneself, especially a positive self, significantly correlates with the intention to participate in social media branding activities. A clear implication for practitioners is to design their brand messages and activities in such a way that allow the targeted consumers to express a favorable self-image by forwarding the message or participating in activities. It requires a deep understanding of who the targeted consumers are and who they are likely to be identified. Previous research also found that proper

use of metaphors and a good sense of humor can also improve the self-expressiveness of the message (Ang & Lim, 2006a; Taylor et al., 2013).

The effect of content strategies is complicated by social media platforms and individuals' characteristics. It is difficult to recommend which strategy is the best, but two important implications emerge in our study. First, posting brand-extended content has a positive effect on brand association of microblog users and brand attitude of SNS users. Connecting the brand to a larger ecological context, providing more related knowledge or inspirational usage, and associating the brand with trending topics may add to the users' values of following brand pages on social media. Second, posting social-oriented content is helpful for forming brand personality in SNSs, but it does not necessarily mean better brand recognition or attitude. Though Kaplan and Haenlein (2010) suggested providing non-professional content on social media to enhance social immediacy, our results suggest that the self-congruity with the brand should be ensured if the brand wants to benefit from being social.

5.3. Limitations and future research

The first limitation of our study lies in the sampling. The majority of the participants were college/university students, particularly in the second study. Whether the results can be generalized to other populations needs to be tested further. However, we believe that students are a major population of interest for social media branding and our results apply to domains where this population is targeted. Another limitation is related to the measurement of brand personality. We only measured the recognition of human characteristics associated with a brand but did not measure the participants' personalities in our study. Though we suspected an impact of self-congruity with the brand, we cannot examine it with empirical data. Further research may examine this impact by elaborating the measurement of brand personality and self-personality. Aaker's (1997) five dimensions of brand personality could be an effective instrument for this purpose, as found in previous research (Aaker, 1999; Ang & Lim, 2006b). Third, we studied only Chinese social media users. Though we believe the importance of a study on this particular population is well justified due to its sheer size, practitioners may benefit more if we can compare Chinese users with Western users.

Acknowledgement

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References

Aaker, D. A. (1996). Measuring brand equity across products and markets. *California Management Review, 38*(3), 103.
Aaker, J. L. (1997). Dimensions of brand personality. *Journal of Marketing Research, 34*(3), 347–356.
Aaker, J. (1999). *The malleable self: The role of self-expression in persuasion* (Research Paper No. 1634). Retrieved from Social Science Research Network: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=945453.
Ang, S. H., & Lim, E. A. C. (2006a). The influence of metaphors and product type on brand personality perceptions and attitudes. *Journal of Advertising, 35*(2), 38–53. Retrieved from: JSTOR.org.
Ang, S. H., & Lim, E. A. C. (2006b). The influence of metaphors and product type on brand personality perceptions and attitudes. *Journal of Advertising, 35*(2), 38–53. Retrieved from: JSTOR.org.
Bagozzi, R. P., & Dholakia, U. M. (2006). Antecedents and purchase consequences of customer participation in small group brand communities. *International Journal of Research in Marketing, 23*(1), 45–61. http://dx.doi.org/10.1016/j.ijresmar.2006.01.005.
Becker, L. B. (1979). Measurement of gratifications. *Communication Research, 6*(1), 54–73.
Benevenuto, F., Rodrigues, T., Cha, M., & Almeida, V. (2012). Characterizing user navigation and interactions in online social networks. *Information Sciences, 195*, 1–24. http://dx.doi.org/10.1016/j.ins.2011.12.009.
Birnie, S. A., & Horvath, P. (2002). Psychological predictors of internet social communication. *Journal of Computer-Mediated Communication, 7*(4). http://dx.doi.org/10.1111/j.1083-6101.2002.tb00154, 0–0.
Bondad-Brown, B., Rice, R., & Pearce, K. E. (2011). A uses and gratifications and social media approach to understanding online video use and content recommendations. In *Annual national meeting of the international communication association*.
Boyd, d. m., & Ellison, N. B. (2007). Social network sites: definition, history, and scholarship. *Journal of Computer-Mediated Communication, 13*(1), 210–230. http://dx.doi.org/10.1111/j.1083-6101.2007.00393.
Bryant, J., & Oliver, M. B. (2009). *Media effects: Advances in theory and research*. Routledge.
Chi, H. (2011). Interactive digital advertising vs. virtual brand community. *Journal of Interactive Advertising, 12*(1), 44–61. http://dx.doi.org/10.1080/15252019.2011.10722190.
Chung, C., & Austria, K. P. (2012). Attitudes toward product messages on social media: an examination of online shopping perspectives among young consumers. *International Journal of E-Services and Mobile Applications, 4*(4), 1–14. http://dx.doi.org/10.4018/jesma.2012100101.
Data Center of China Internet. (2013). *BlueBook of China microblog*. Retrieved from: http://iweibox.com/ziliao/5.
Dholakia, U. M., & Durham, E. (2010). One café chain's Facebook experiment. *Harvard Business Review, 88*(3), 26.
Dunne, Á., Lawlor, M.-A., & Rowley, J. (2010). Young people's use of online social networking sites—a uses and gratifications perspective. *Journal of Research in Interactive Marketing, 4*(1), 46–58.
Escalas, J. E., & Bettman, J. R. (2003). You are what they eat: the influence of reference groups on consumers' connections to brands. *Journal of Consumer Psychology, 13*(3), 339–348. http://dx.doi.org/10.1207/s15327663jcp1303_14.
Fazeen, M., Dantu, R., & Guturu, P. (2011). Identification of leaders, lurkers, associates and spammers in a social network: context-dependent and context-independent approaches. *Social Network Analysis and Mining, 1*(3), 241–254. http://dx.doi.org/10.1007/s13278-011-0017-9.
Fournier, S. (1998). Consumers and their brands: developing relationship theory in consumer research. *Journal of Consumer Research, 24*(4), 343–353.
Fox, S., & Duggan, M. (2013). *Health online 2013*. Retrieved from Pew Research Center's Internet & American Life Project: http://www.pewinternet.org/-/media//Files/Reports/PIP_HealthOnline.pdf.
Green, D. T., & Pearson, J. M. (2005). Social software and cyber networks: ties that bind or weak associations within the political organization?. In *HICSS '05: Proceedings of the proceedings of the 38th annual Hawaii international conference on system sciences (HICSS'05) - track 5-volume 05 (pp. 117.2–)*. IEEE Computer Society http://dx.doi.org/10.1109/HICSS.2005.457.
Greenwald, A. G., Bellezza, F. S., & Banaji, M. R. (1988). Is self-esteem a central ingredient of the self-concept? *Personality and Social Psychology Bulletin, 14*(1), 34–45.
Ho, J. Y., & Dempsey, M. (2010). Viral marketing: motivations to forward online content. *Journal of Business Research, 63*(9–10), 1000–1006. http://dx.doi.org/10.1016/j.jbusres.2008.08.010.
InSite Consulting. (2011). *Social media around the world 2011 [presentation]*. Retrieved from: http://www.slideshare.net/stevenvanbelleghem/social-media-around-the-world-2011/2-What_to_expect_from_thispresentation20.
Johnson, P. R., & Yang, S. (2009). Uses and gratifications of Twitter: an examination of user motives and satisfaction of Twitter use. In *Paper presented in communication technology division of the annual convention of the association for education in journalism and mass communication in Boston, MA*.
Joinson, A. N. (2008). Looking at, looking up or keeping up with people? Motives and use of Facebook. In *CHI '08: Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 1027–1036). ACM. http://dx.doi.org/10.1145/1357054.1357213.
Jung, Y., Vorderer, P., & Song, H. (2007). Motivation and consequences of blogging in social life. In *Annual meeting of the international communication association, San Francisco, CA*.
Kabadayi, S., & Price, K. (2014). Consumer–brand engagement on Facebook: Liking and commenting behaviors. *Journal of Research in Interactive Marketing, 8*(3), 203–223.
Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons, 53*(1), 59–68. http://dx.doi.org/10.1016/j.bushor.2009.09.003.
Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *The Public Opinion Quarterly, 37*(4), 509–523.
Kim, J. W. (2014). Scan and click: the uses and gratifications of social recommendation systems. *Computers in Human Behavior, 33*, 184–191. http://dx.doi.org/10.1016/j.chb.2014.01.028.
Kim, A. J., & Ko, E. (2012a). Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand. *Journal of Business Research, 65*(10), 1480–1486. http://dx.doi.org/10.1016/j.jbusres.2011.10.014.
Kim, A. J., & Ko, E. (2012b). Impacts of luxury fashion brand's social media marketing on customer relationship and purchase intention. *Journal of Global Fashion Marketing, 1*(3), 164–171. http://dx.doi.org/10.1080/20932685.2010.10593068.
Kim, W. G., Lee, C., & Hiemstra, S. J. (2004). Effects of an online virtual community on customer loyalty and travel product purchases. *Tourism Management, 25*(3),

343–355.
Ko, H., Cho, C.-H., & Roberts, M. S. (2005). Internet uses and gratifications: a structural equation model of interactive advertising. *Journal of Advertising, 34*(2), 57–70.
Kwak, H., Lee, C., Park, H., & Moon, S. (2010). What is Twitter, a social network or a news media?. In *WWW '10: Proceedings of the 19th international conference on world wide web* (pp. 591–600). ACM. http://dx.doi.org/10.1145/1772690.1772751.
Lee, C. S., & Ma, L. (2012). News sharing in social media: the effect of gratifications and prior experience. *Computers in Human Behavior, 28*(2), 331–339. http://dx.doi.org/10.1016/j.chb.2011.10.002.
Lee, A. J., Yang, F.-C., Tsai, H.-C., & Lai, Y.-Y. (2014). Discovering content-based behavioral roles in social networks. *Decision Support Systems, 59*, 250–261. http://dx.doi.org/10.1016/j.dss.2013.12.004.
Leung, L. (2009). User-generated content on the Internet: an examination of gratifications, civic engagement and psychological empowerment. *New Media & Society, 11*(8), 1327–1347.
Leung, L. (2013). Generational differences in content generation in social media: the roles of the gratifications sought and of narcissism. *Computers in Human Behavior, 29*(3), 997–1006. http://dx.doi.org/10.1016/j.chb.2012.12.028.
Lin, C., Salwen, M. B., & Abdulla, R. A. (2005). Uses and gratifications of online and offline news: new wine in an old bottle. In M. B. Salwen, B. Garrison, & P. D. Driscoll (Eds.), *Online news and the public* (pp. 221–236). Mahwah, NJ, US: Lawrence Erlbaum Associates Hillside.
Localytics. (2014). *Time in app increases by 21% across all apps*. Retrieved from: http://info.localytics.com/blog/time-in-app-increases-by-21-across-all-apps.
Lu, H., & Hsiao, K. (2009). Gender differences in reasons for frequent blog posting. *Online Information Review, 33*(1), 135–156. http://dx.doi.org/10.1108/14684520910944436. Retrieved from: http://www.emeraldinsight.com/.
Luo, X. (2002). Uses and gratifications theory and e-consumer behaviors: a structural equation modeling study. *Journal of Interactive Advertising, 2*(2), 34–41. http://dx.doi.org/10.1080/15252019.2002.10722060.
Maia, M., Almeida, J., & Almeida, V. (2008). Identifying user behavior in online social networks. In *Proceedings of the 1st workshop on social network systems* (pp. 1–6).
McQuail, D. (1984). With the benefit of hindsight: Reflections on uses and gratifications research. *Critical Studies in Media Communication, 1*(2), 177–193. http://dx.doi.org/10.1080/15295038409360028.
Mitchell, A. A. (1986). The effect of verbal and visual components of advertisements on brand attitudes and attitude toward the advertisement. *Journal of Consumer Research, 13*(1), 12–24.
Muntinga, D. G., Moorman, M., & Smit, E. G. (2011). Introducing cobras. *International Journal of Advertising, 30*(1), 13–46. http://dx.doi.org/10.2501/IJA-30-1-013-046.
Nonnecke, B., Preece, J., Andrews, D., & Voutour, R. (2004). Online lurkers tell why. In *AMCIS 2004 proceedings, 321*.
Pai, P., & Arnott, D. C. (2013). User adoption of social networking sites: Eliciting uses and gratifications through a means–end approach. *Computers in Human Behavior, 29*(3), 1039–1053. http://dx.doi.org/10.1016/j.chb.2012.06.025.
Papacharissi, Z., & Rubin, A. M. (2000). Predictors of internet use. *Journal of Broadcasting & Electronic Media, 44*(2), 175–196.
Park, N., Kee, K. F., & Valenzuela, S. (2009). Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes. *CyberPsychology & Behavior, 12*(6), 729–733.
Pew Research Center's Journalism Project. (2012). *State of the news media 2012*. Retrieved from Pew Research Center: http://stateofthemedia.org/files/2012/08/2012_sotm_annual_report.pdf.
Preece, J., Nonnecke, B., & Andrews, D. (2004). The top five reasons for lurking: Improving community experiences for everyone. *Computers in Human Behavior, 20*(2), 201–223.
Quan-Haase, A., & Young, L. (2010). Uses and gratifications of social media: a comparison of Facebook and instant messaging. *Bulletin of Science, Technology & Society, 30*(5), 350–361. http://dx.doi.org/10.1177/0270467610380009.
Raacke, J., & Bonds-Raacke, J. (2008). MySpace and Facebook: applying the uses and gratifications theory to exploring friend-networking sites. *Cyberpsychology & Behavior, 11*(2), 169–174.
Rauschnabel, P. A., Praxmarer, S., & Ivens, B. S. (2012). Social media marketing: how design features influence interactions with brand postings on Facebook. In *Advances in advertising research* (Vol. III, pp. 153–161). Gabler Verlag. http://dx.doi.org/10.1007/978-3-8349-4291-3_12.
Rodgers, S., & Sheldon, K. M. (2002). An improved way to characterize Internet users. *Journal of Advertising Research, 42*(5), 85–94. http://dx.doi.org/10.2501/JAR-42-5-85-94.
Scanfeld, D., Scanfeld, V., & Larson, E. L. (2010). Dissemination of health information through social networks: Twitter and antibiotics. *American Journal of Infection Control, 38*(3), 182–188. http://dx.doi.org/10.1016/j.ajic.2009.11.004.
Sedikides, C., & Strube, M. J. (1995). The multiply motivated self. *Personality and Social Psychology Bulletin, 21*(12), 1330–1335. http://dx.doi.org/10.1177/01461672952112010.
Shao, G. (2009). Understanding the appeal of user-generated media: a uses and gratification perspective. *Internet Research, 19*(1), 7–25.
Simkiss, D., Edbrahim, G. J., & Waterston, A. J. R. (2012). Analysing categorical data log-linear analysis. In *Research methods II: Multivariate analysis* (pp. 144–153). Retrieved from: http://www.oxfordjournals.org/tropej/online/ma_chap14.pdf.
Sirgy, M. J., Grewal, D., & Mangleburg, T. (2000). Retail environment, self-congruity, and retail patronage. *Journal of Business Research, 49*(2), 127–138. http://dx.doi.org/10.1016/s0148-2963(99)00009-0.
Taylor, D. G., Strutton, D., & Thompson, K. (2013). Self-enhancement as a motivation for sharing online advertising. *Journal of Interactive Advertising*. http://dx.doi.org/10.1080/15252019.2012.10722193.
Trammell, K. D., & Keshelashvili, A. (2005). Examining the new influencers: a self-presentation study of a-list blogs. *Journalism & Mass Communication Quarterly, 82*(4), 968–982. http://dx.doi.org/10.1177/107769900508200413.
Underwood, J. D., Kerlin, L., & Farrington-Flint, L. (2011). The lies we tell and what they say about us: using behavioural characteristics to explain Facebook activity. *Computers in Human Behavior, 27*(5), 1621–1626.
de Vries, L., Gensler, S., & Leeflang, P. S. (2012). Popularity of brand posts on brand fan pages: an investigation of the effects of social media marketing. *Journal of Interactive Marketing, 26*(2), 83–91. http://dx.doi.org/10.1016/j.intmar.2012.01.003.
Wang, Z., & Tchernev, J. M. (2012). The myth of media multitasking: Reciprocal dynamics of media multitasking, personal needs, and gratifications. *Journal of Communication, 62*(3), 493–513.
Welser, H. T., Cosley, D., Kossinets, G., Lin, A., Dokshin, F., Gay, G., et al. (2011). Finding social roles in Wikipedia. In *iConference '11: Proceedings of the 2011 iConference* (pp. 122–129). ACM. http://dx.doi.org/10.1145/1940761.1940778.
Whiting, A., & Williams, D. (2013). Why people use social media: a uses and gratifications approach. *Qualitative Market Research: An International Journal, 16*(4), 362–369.
Yoo, B., & Donthu, N. (2001). Developing and validating a multidimensional consumer-based brand equity scale. *Journal of Business Research, 52*(1), 1–14. http://dx.doi.org/10.1016/s0148-2963(99)00098-3.
Yoo, C. W., Sanders, G. L., & Moon, J. (2013). Exploring the effect of e-WOM participation on e-loyalty in e-commerce. *Decision Support Systems, 55*(3), 669–678. http://dx.doi.org/10.1016/j.dss.2013.02.001.
Zaichkowsky, J. L. (1994). The personal involvement inventory: Reduction, revision, and application to advertising. *Journal of Advertising, 23*(4), 59–70.
Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: digital empowerment in anchored relationships. *Computers in Human Behavior, 24*(5), 1816–1836.
Zhao, D., & Rosson, M. B. (2009). How and why people Twitter: the role that micro-blogging plays in informal communication at work. In *Proceedings of the ACM 2009 international conference on supporting group work* (pp. 243–252).
Zhu, T., Wang, B., Wu, B., & Zhu, C. (2011). Role defining using behavior-based clustering in telecommunication network. *Expert Systems with Applications, 38*(4), 3902–3908. http://dx.doi.org/10.1016/j.eswa.2010.09.051.