



# Examining WeChat users' motivations, trust, attitudes, and positive word-of-mouth: Evidence from China



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## ABSTRACT

WeChat is a mobile instant text and voice messaging communication service and has become an important social media platform in China. The objectives of this article are to examine the effects of psychological motivations (entertainment, sociality, and information) and trust on WeChat users' attitudes and to assess the influence of users' attitudes and their trust on positive word-of-mouth. This study represents one of the few that empirically investigates WeChat users' motives, attitudes, trust, and their associated behavior. The research model was tested using data randomly collected from the database of Sojump. The numbers of valid observations were 264. Structure equation modeling was employed to verify and validate the research model. The outcomes confirm the path effects showing that entertainment, sociality, information, and trust positively influence WeChat users' attitudes and users' trust and their attitudes significantly affect positive WOM. The research results provide insight into how WeChat can motivate users and build their trust to improve their attitudes which in turn will increase WeChat users' willingness in making positive comments on products and services.

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## 1. Introduction

Social media has deeply changed interpersonal communication. Instant messaging (IM) is a social media tool offering real-time text transmission over the Internet. In the past few years, IM has gained popularity as a means of effective and efficient communication. IM is particularly attractive to younger generations because it permits users to instantly obtain and share information with a list of their online “buddies” (Correa, Hinsley, & de Zuniga, 2010).

WeChat (WeiXin in Chinese) is a mobile instant text and voice messaging communication service developed by Tencent Holdings Ltd. in China on January 21, 2011. WeChat has similar features to WhatsApp to generate both text and voice messages. WeChat is free to install, use, and download, and supports all smartphone platforms including iPhone, Android, and Windows Phone operating systems. For WeChat users, sending and receiving messaging between different mobile platforms is possible. WeChat provides users an innovative way to communicate and interact with friends through text messaging, hold-to-talk voice messaging, one-to-many messaging, photo/video sharing, location sharing, and contact information exchange (<http://en.wikipedia.org/wiki/WeChat>).

With the advances in Internet connection and the popularity of smart phone, WeChat reached 355 million monthly active users at the end of 2013 and is available in over 200 countries and supports 18 different languages (Tencent 2013 Fourth Quarter and Annual Results Announcement). The monthly active users refer to the total number of WeChat users sending out at least one message during the last calendar month prior to the relevant date (Tencent 2013 Fourth Quarter and Annual Results Announcement). Consumer activities in WeChat range from socializing with friends and entertaining to exchanging information and experiences regarding a product/service. WeChat is the most widely used social networking service in China and has become an important social media platform for computer-mediated communication (Gao & Zhang, 2013).

China's use of social media is increasing faster than the rest of the world. Chinese consumers tend to consider products or services if they see them mentioned on a social media site (<http://blogs.hbr.org/2012/08/segmenting-chinas-social-media/>). Because social media such as Facebook, YouTube, and Twitter are blocked in China, WeChat is one that marketers could use to directly communicate with their Chinese audience.

Psychological motivations are the key in determining social media users' attitudes (Chang & Zhu, 2011). Inspecting users' psychological needs help marketers understand what motivates people to use the media. A review of the literature reveals that the

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previous social media studies mainly focused on examining users' motivations and their attitudes regarding adopting Facebook, RenRen, or other social networking sites (SNS) (Chang & Zhu, 2011; Kim, Sohn, & Choi, 2011). Little research investigates WeChat users' psychological motivations and their attitudes.

The significance of word-of-mouth (WOM) communications in influencing consumer decision making is well documented (Brown, Broderick, & Lee, 2007). Word-of-mouth behavior within SNS is originated from the users' desire to maintain social relationships within their personal networks (Chu & Kim, 2011). A positive WOM provides beneficial information about a product/service to customers and thereby assist the promotion of the product/service (Maxham, 2001). In the growing online social communications, electronic WOM has been an important topic to business and marketing researchers (Chu & Choi, 2011). Trust facilitates a person's confidence and his/her willingness to have faith in the other party (Moorman, Zaltman, & Deshpande, 1992) and is a driver of WOM (Chu & Kim, 2011) and attitude (Shin, 2010). Although trust has been widely discussed in the marketing literature, very few empirical studies explore the impact of trust on attitudes and positive WOM communication in social media like WeChat.

Based on the foregoing discussions, the objectives of this research are to examine the effects of WeChat users' psychological motivations and trust on attitudes and to assess the influence of users' attitudes and trust on positive WOM.

To investigate users' psychological motivations underlying WeChat usage, this study employs uses and gratifications (U&G) theory. U&G theory provides a conceptual framework in examining new media adoption (Kim et al., 2011) and is applicable to various situations involving mediated communications which includes traditional (e.g., newspapers) and non-traditional (e.g., Internet) media (Ko, Cho, & Roberts, 2005).

This article is organized as follows. In the subsequent sessions, we review the literature and develop the hypotheses. We then summarize the research methodology, and report the results. Finally, we conclude with discussions.

## 2. Literature review and hypotheses

### 2.1. Motivations for using WeChat and attitude

Uses and gratifications theory was developed based on social and psychological origins of needs and is one of the influential theories in media research (Roy, 2009). U&G theory assumes that media users are active in their underlying motivations (Katz, Blumler, & Gurevitch, 1974) and explains that people purposely choose certain media in order to gratify their psychological needs (Kim et al., 2011). This theory provides insight into the meaning and determinants of consumer behaviors such as attitude to the media (Luo, 2002). Adapted from Chang and Zhu (2011), this study defines the attitude towards WeChat as an individual's summative evaluation (positive or negative) of perceived attributes of WeChat. Attitudes are experienced and learned and they might develop over a period of time. Attitudes put consumers into a frame of mind of liking or disliking the products/services. Attitudes might differ from one another in terms of their strength. From the marketer's perspective, although attitudes are usually slow to change, they can be influenced through marketing communications, e.g., advertisements, or gratifying their psychological motives (Kim et al., 2011).

The evolution of information technology supports the high level of interactivity and stimulates the rapid growth of the Internet. Thus the Internet gradually replaces traditional mass media in communication (Roy, 2009). The previous research identified the important motivations underlying the use of the Internet including information, convenience, entertainment, and social interaction

(Ko et al., 2005). Luo's (2002) study of online consumer behavior indicated that entertainment and information are positively associated with attitudes toward the Web. In the era of social media, several scholars have applied the U&G approach to discover the psychological motivations of using social networking sites (Chang & Zhu, 2011; Chung & Austria, 2010; Ellison, Steinfield, & Lampe, 2006; Kim et al., 2011; Park, Kee, & Valenzuela, 2009; Sun, Liu, Peng, Y., & Barnes, 2014).

Chang and Zhu (2011) compared the differences between the pre-adopters and post-adopters on social networking sites in China and found information, meeting new friends, and conformity motivations have the same significant, positive effect on attitudes for both groups. However, entertainment motivation has a significant, positive effect on attitudes in the group of pre-adopters and connecting with old friends has a significant, positive influence on the post-adopters' attitudes only. In addition, Chang and Zhu (2011) reviewed the previous SNS studies and discovered that sociality and entertainment are the two dominant motivations to adopt SNS and the third one is information motivation. For ease of classification, Chang and Zhu (2011) merged two motivations, connecting with old friends and meeting new people, into one motivation namely sociality. In the research investigating gratifications underlying social media usage, Chung and Austria (2010) viewed social media usage derived from entertainment, social interaction, and information gratification and found social interaction and information gratification have a positive relationship to attitudes toward social media marketing messages. Ellison et al. (2006) noted that information, sociality, entertainment, and conformity are the chief motivations of American students in using Facebook. Kim et al. (2011) examined the motives of using SNS among college students in the US and Korea and the outcomes showed that the motives of seeking friends, entertainment, and convenience have a significant, positive influence on US students' attitudes toward the SNS. The motives of seeking social support and convenience have a significant, positive effect on Korean students' attitudes toward adopting SNS. However, the impact of seeking information on attitudes toward adopting SNS is not significant in both countries. Due to social and cultural differences, Kim et al. (2011) suggested that SNS users in different countries have different motives of adopting SNS. Park et al. (2009) investigated Facebook Groups users' gratifications and identified four needs for using Facebook Groups: socializing, entertainment, self-status seeking, and information. In a study of exploring Chinese users' continuance intention in online social networks, Sun et al. (2014) discussed users seeking useful information as one psychological motive of Chinese SNS users.

The previous discussions show that entertainment, sociality, and information are the most frequently discussed motives of using Internet and SNS. Thus, this study proposes that entertainment, sociality, and information are important motivations of Chinese users in adopting WeChat and they are the determinants of Chinese users' attitudes. People who have high entertainment, information, and sociality motivations are more likely to adopt WeChat.

Referencing the definitions of entertainment, sociality, and information from the previous studies (Chang & Zhu, 2011; Luo, 2002; Park et al., 2009), our research defines entertainment as the extent to which WeChat is fun and entertaining to its users. Information refers to the extent to which WeChat provides users with resourceful, timely, and convenient information. Sociality is defined as individuals interested in connecting with old friends, keeping relationships with existing friends, and meeting new people through WeChat. Hence, this study hypothesizes:

**H1.** Entertainment has a positive influence on attitudes toward the use of WeChat.

**H2.** Sociality has a positive influence on attitudes toward the use of WeChat.

**H3.** Information has a positive influence on attitudes toward the use of WeChat.

## 2.2. Trust, attitude, and positive word-of-mouth

Trust is defined as “existing when one party has confidence in an exchange partner’s reliability and integrity” (Morgan & Hunt, 1994, p. 23). Morgan and Hunt (1994)’s definition of trust is widely accepted and this definition shows the importance of confidence, integrity, and reliability in conceptualizing trust (Matos & Rossi, 2008). A customer tends to endorse a provider that he/she has previous experience with and confidence in (Gremler, Gwinner, & Brown, 2001). Trust could be either interpersonal trust (trust between people), organizational trust (trust between organizations), or intra-organizational trust (trust between individuals and organizations) (Gremler et al., 2001). This study focuses on trust between WeChat users and WeChat (intra-organizational trust) and explores whether WeChat users trust the comments on the products/services advertised on WeChat. Consumers’ trust in the service providers can help reduce their cognitive risk and insecurity and thus encourages the development of long-term relationship (Laaksonen, Jarimo, & Kulmala, 2009). Trust was found to have a significant positive effect on both the intention to use social networking sites (Sledgianowski & Kulviwat, 2009) and SNS users’ willingness to engage in word-of-mouth communications (Chu & Kim, 2011) reflecting the important role of trust in SNS.

Trust was recognized as a determinant of consumer attitudes (Shih, Lai, & Cheng, 2013; Shin, 2010; Suh & Han, 2003). Shih et al. (2013) surveyed users of an online discussion forum and their findings support trust in an online forum positively influencing users’ attitudes toward the forum. Shin’s (2010) study examined users’ security, trust, and privacy concerns regarding using social networking sites and found trust has a significant, positive effect on users’ attitudes toward SNS. In a Web survey of 502 Internet banking users, Suh and Han (2003) found that trust positively affects customers’ attitudes toward using e-commerce for trade transaction. Therefore, we propose the following hypothesis:

**H4.** Trust has a positive influence on attitudes toward the use of WeChat.

Westbrook (1987, p. 261) defines word-of-mouth communications as informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services and/or their sellers. The rationale of WOM is that information on products, services, and others can spread from one consumer to another either in person or via the communication media (Brown, Barry, Dacin, & Gunst, 2005). Although WOM could be positive or negative, marketers favor the positive recommendations. The positive WOM help promote products or services without incurring additional promotion or advertisement costs. Therefore, the positive WOM is the focus of our research.

Reviewing the previous studies exhibits that trust positively influences word-of-mouth communication (Chu & Kim, 2011; Gremler et al., 2001; Matos & Rossi, 2008; Ranaweera & Prabhu, 2003; Sichtmann, 2007). Chu and Kim (2011) investigated the determinants impacting consumers’ engagement in electronic word-of-mouth (eWOM) via social networks and found trust is positively associated with users’ eWOM behavior in SNS. Gremler et al. (2001) contended that the increase of a customer’s trust in employees enhances his/her propensity to engage in positive

WOM communication about the organization. Matos and Rossi (2008) identified trust as an antecedent of WOM and discovered a significant, positive effect of trust on WOM activity. In a large-scale survey of fixed line telephone users in the UK, Ranaweera and Prabhu (2003) indicated that trust encourages consumers to make positive comments on their service provider. Sichtmann (2007) found that the more the consumers trust a company’s products or services, the more likely they are to recommend them to others. Thus, this research hypothesizes:

**H5.** The higher the level of trust, the higher the level of positive word-of-mouth communication.

In the attitude–behavior relationship, it is usually considered logical that a person holding a favorable attitude towards some object performs favorable behaviors (Ajzen & Fishbein, 1977). Attitudes are the determinant of behavioral intention and have a positive effect on the intention to use information system (Yang & Yoo, 2004). Affective attitudes toward an online forum were found to positively influence electronic WOM intention (Shih et al., 2013). Bagozzi (1981) conducted a field study of students, faculty, and staff and his research confirmed attitudes have a positive effect on behavioral intentions. In sum, we develop the following hypothesis

**H6.** The higher the level of attitude, the higher the level of positive word-of-mouth communication.

## 3. Research model and methodology

### 3.1. Research model

The research model (shown in Fig. 1) consists of the antecedents of attitudes toward the use of WeChat including entertainment, sociality, information, and trust, and the exploration of whether WeChat users’ trust affects their positive word-of-mouth communications. This proposed model also examines the effect of WeChat users’ attitudes on positive WOM.

### 3.2. Research sample

The following three criteria guide our sample selection. First, only those WeChat users who sent out at least one message during the last month (monthly active users) were qualified to participate in the survey. This requirement fits with the assumption of U&G theory that media users are active. Second, this study surveyed only residents of Shanghai. Two reasons for surveying Shanghai residents are (1) Shanghai is the largest commercial city and financial center in China, thus many people use smart phones (2) the infrastructure of mobile connection in Shanghai is much better than in other cities in China. Third, according to Guo, Shim, and

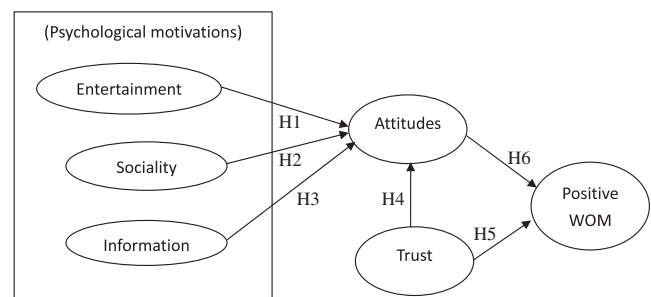


Fig. 1. The research model.

Otondo (2010), 73% of SNS users in China are between 13 and 34 years old. The previous research also identified younger generations are the target users of social media (Correa et al., 2010). Therefore, we surveyed respondents aged 18–30.

The samples were randomly collected from the database of Sojump ([www.sojump.com](http://www.sojump.com)) during January 3 and February 18, 2014, in Shanghai. Sojump is a professional online survey network consisting of 100,000 members in China and the head office is in Shanghai. A total of 317 qualified members replied. After deleting samples with questionable responses (e.g., participants answered “Strongly Disagree” or “Strongly Agree” to all questions in the first section of the questionnaire), the numbers of valid observations were 264.

### 3.3. Measures

A survey questionnaire was developed with two sections. The first section includes the six constructs (entertainment, sociality, information, trust, attitudes, and positive WOM) in this study. The second section contains respondents' demographics (gender, education, marriage, monthly expenditures), how many friends do they have on WeChat, their daily time spent on WeChat, and how long have they used WeChat. The developed questionnaire was pre-tested on 30 WeChat users and the result showed the instructions and questions were well understood. The measurement of entertainment contains three items which were modified from Ducoffe (1996). The sociality scale contains three items and these items were modified from Raacke and Bonds-Raacke (2008) and Chang and Zhu (2011). The measurement of information contains three items which were adapted from the study of Chang and Zhu (2011). The trust scale (three items) was modified from the study of Matos and Rossi (2008). The measurement of attitudes was altered from Chung and Austria (2010) and includes three items. The measurement of positive WOM was adjusted from Shih et al. (2013) and contains three items. The total 18 items (shown in Appendix A) were measured by a five-point Likert scale ranging from “strongly disagree = 1” to “strongly agree = 5”.

### 3.4. Demographic data

Among the 264 respondents, 64.6% of them were females. The respondents tend to be single (94.3% were not married) and well-educated (76.1% of them had a bachelor or graduate degree). 59.8% of the respondents spent more than 1 h on WeChat daily and 64% of them have used WeChat for more than one year. 56.4% of the respondents' monthly expenditures were less than 2000 RMB (=319.5 US\$) and 75% had less than 100 friends on WeChat. Table 1 shows the summary of demographic statistics.

## 4. Results

### 4.1. Measurement model

Confirmatory factor analysis (CFA) was first conducted using AMOS 18 to test a measurement theory based on the overall model fit, construct reliability, and validity. After that, a structural model was used to examine the structural relationships among the constructs. Anderson and Gerbing (1988) suggested this two-step approach making the results more meaningful than merely using a one-stage approach.

Table 2 shows the results of absolute fit indices ( $\chi^2/\text{d.f.} = 1.075$ ; RMSEA = 0.017; RMR = 0.015) and the incremental fit indices (CFI = 0.996; AGFI = 0.929; IFI = 0.996; TLI = 0.995) demonstrating a good model fit (Hair, Black, Babin, Anderson, & Tatham, 2010). Internal consistency was assessed by composite reliability (CR).

**Table 1**

Summary of demographic statistics ( $N = 264$ ).

	Frequency	%
<i>Gender</i>		
Males	94	35.6
Females	170	64.4
<i>Married</i>		
Yes	15	5.7
No	249	94.3
<i>Education</i>		
Middle school	1	0.4
High school	10	3.8
Two-year college diploma	52	19.7
University Degree	179	67.8
Graduate Degree	22	8.3
<i>Daily time spent on WeChat?</i>		
<30 min	48	18.2
30 min–1 h	58	22.0
1–2 h	86	32.5
2–3 h	39	14.8
>3 h	33	12.5
<i>How long have you used WeChat?</i>		
<3 months	5	1.9
3–6 months	25	9.5
6 months–1 year	65	24.6
1–2 years	109	41.3
>2 years	60	22.7
<i>Individual monthly expenditures?</i>		
<RMB 1000 (=US\$159.7)	38	14.4
RMB 1000–2000 (US\$159.7–US\$319.5)	111	42.0
RMB 2001–3000 (US\$319.6–US\$479.2)	53	20.1
RMB 3001–4000 (US\$479.3–US\$638.9)	30	11.4
RMB 4001–5000 (US\$639.1–US\$798.7)	19	7.2
>RMB 5000 (US\$798.7)	13	4.9
<i>How many friends do you have on WeChat?</i>		
<50	88	33.3
50–100	110	41.7
101–150	39	14.7
151–200	21	8.0
>200	6	2.3

All the CRs exceed the threshold value of 0.7 (Hair et al., 2010) indicating good reliability. Convergent validity was accessed by factor loadings, average of variance extracted (AVE), and squared multiple correlations (SMC) (Fornell & Larcker, 1981; Hair et al., 2010). High loadings on a factor indicate that they converge on the latent construct (Hair et al., 2010). The factor loadings ranged from 0.72 to 0.862 exceed 0.7 showing high convergent validity. AVE represents the mean variance extracted for the items loading on a construct. The AVE for each construct exceeds 0.5 (Fornell & Larcker, 1981; Hair et al., 2010) suggesting adequate convergence. The value of SMC represents the variance of a measured variable explained by a latent construct. All values of SMC exceed 0.5 also support convergent validity (Hair et al., 2010). Table 3 summarizes the statistical outcomes of confirmatory factor analysis.

In discriminant validity, according to the suggestion of Fornell and Larcker (1981), the AVE of construct should be greater than the squared correlations between any two constructs. The outcomes indicate that the AVE values of all constructs (diagonal elements in Table 4) exceed the squared correlations between any two constructs (off-diagonal elements in Table 4), which supports the discriminant validity. In sum, the measurement model in this study displays adequate model fit, good reliability, and sufficient convergent and discriminate validity.

### 4.2. Structural model

AMOS 18 was employed to test the structural model and the model fit indices ( $\chi^2/\text{d.f.} = 1.233$ ; RMSEA = 0.030; RMR = 0.037;



**Table 2**  
Fit indices for the measurement model.

Model fit measures	Model fit criterion	Index value	Good model fit (Y/N)
<i>Absolute fit indices</i>			
RMSEA	<0.08	0.017	Y
RMR	<0.05	0.015	Y
$\chi^2/\text{d.f.}$ ( $\chi^2 = 129.054$ , d.f. = 120)	<3	1.075	Y
<i>Incremental fit indices</i>			
CFI	>0.9	0.996	Y
AGFI	>0.8	0.929	Y
IFI	>0.9	0.996	Y
TLI	>0.9	0.995	Y

**Table 3**  
Statistical outcomes of confirmatory factor analysis.

Constructs and items	Loading (>0.7)	T-value	SMC (>0.5)	CR (>0.7)	AVE (>0.5)
<i>Entertainment (E)</i>				0.846	0.647
E1	0.840		0.706		
E2	0.800	13.986*	0.641		
E3	0.771	13.409*	0.594		
<i>Sociality (S)</i>				0.796	0.566
S1	0.743		0.552		
S2	0.718	10.403*	0.516		
S3	0.794	11.148*	0.631		
<i>Information (I)</i>				0.864	0.678
I1	0.828		0.685		
I2	0.830	14.278*	0.689		
I3	0.812	14.011*	0.660		
<i>Trust (T)</i>				0.847	0.648
T1	0.812		0.660		
T2	0.806	12.807*	0.650		
T3	0.798	12.728*	0.636		
<i>Attitudes (A)</i>				0.819	0.602
A1	0.797		0.636		
A2	0.747	12.081*	0.558		
A3	0.782	12.665*	0.612		
<i>Positive word-of-mouth (PW)</i>				0.861	0.675
PW1	0.744		0.553		
PW2	0.852	12.991*	0.726		
PW3	0.863	13.047*	0.745		

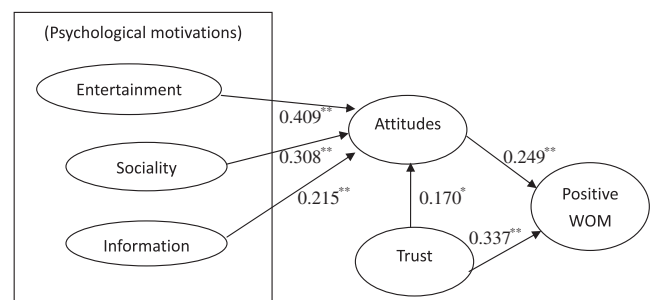
Note: CR, construct reliability; SMC, squared multiple correlations; AVE, average variance extracted.

\*  $p < 0.001$ .

**Table 4**  
Discriminant validity.

	E	S	I	T	A	PW
E	<b>0.647</b>					
S	0.436	<b>0.566</b>				
I	0.277	0.178	<b>0.678</b>			
T	0.060	0.041	0.076	<b>0.648</b>		
A	0.533	0.450	0.338	0.135	<b>0.602</b>	
PW	0.134	0.082	0.046	0.183	0.111	<b>0.675</b>

Note: E, entertainment; S, sociality; I, information; T, trust; A, attitude; PW, positive word-of-mouth. Diagonal elements (bold) are AVE. Off-diagonal elements are squared correlations between constructs.



Note: \*  $p < 0.01$ , \*\*  $p < 0.001$

**Fig. 2.** Path analysis result

CFI = 0.987; AGFI = 0.919; IFI = 0.988; TLI = 0.985) indicate a good model fit. Then this study evaluated the structural model to examine the hypothesized relationships. The outcomes show the standardized path coefficients are statistically significant supporting the proposed hypotheses.

Entertainment ( $\beta = 0.409$ ,  $p < 0.001$ ), sociality ( $\beta = 0.308$ ,  $p < 0.001$ ), information ( $\beta = 0.215$ ,  $p < 0.001$ ), and trust ( $\beta = 0.170$ ,  $p < 0.01$ ) are found to have a significant, positive effect on attitudes

indicating they are important predictors of attitudes. Thus, hypotheses 1–4 are statistically corroborated. Attitudes ( $\beta = 0.249$ ,  $p < 0.001$ ) and trust ( $\beta = 0.337$ ,  $p < 0.001$ ) significantly influence positive WOM displaying that they are determinants of positive WOM. Hence, hypotheses 5 and 6 are statistically supported. Fig. 2 and Table 5 show the outcomes of hypotheses testing and path coefficients.

**Table 5**  
Path results of structural model.

Hypotheses	Paths	Standardized coefficient	T-value
H1	Entertainment → attitudes	0.409	4.513**
H2	Sociality → attitudes	0.308	3.598**
H3	Information → attitudes	0.215	3.217**
H4	Trust → attitudes	0.170	3.147*
H5	Trust → positive WOM	0.337	4.698**
H6	Attitudes → positive WOM	0.249	3.591**

\*  $p < 0.01$ .

\*\*  $p < 0.001$ .

## 5. Conclusion and discussion

This study is an initial study contributing to the literature on examining the effects of entertainment, sociality, information, and trust on attitudes toward the use of WeChat and in assessing the influence of WeChat users' attitudes and trust on positive word-of-mouth. The results confirm the path effects showing that entertainment, sociality, information, and trust positively influence WeChat users' attitudes and users' trust and their attitudes significantly affect positive WOM. Over half of the young WeChat users are single and well-educated, connect with less than 100 friends, use WeChat for more than one year, spend less than 2000 RMB (=319.5 US\$) monthly, and use WeChat for more than 1 h daily.

To explain the model completely, it is imperative to discuss the standardized direct, indirect, and total effects of the model (Lin & Lu, 2011). The direct-effect analysis of psychological motivations (entertainment, sociality, information) on attitudes reveals that entertainment (0.409) is the most influential factor of attitudes, followed by sociality (0.308) and information (0.215). The indirect effects of entertainment, sociality, and information on positive WOM through attitudes are 0.102 ( $=0.409 \times 0.249$ ), 0.076 ( $=0.308 \times 0.249$ ), and 0.054 ( $=0.215 \times 0.249$ ), respectively. These findings support the dominant role of entertainment in influencing WeChat users' attitudes. The outcome is consistent with Ellison et al. (2006) and partly supports Kim et al.'s (2011) research findings regarding American students placing relatively greater emphasis on seeking entertainment from using SNS (but not for Korean students). The free entertainment applications on WeChat include ChatPark, WeChat Hacker APK, Fontsy, Sticker More for WeChat, etc. Providing more free entertainment applications enhances Chinese users' attitudes which in turn will strengthen their propensity to engage in positive WOM communications. In terms of information, WeChat is a convenient and good source of information and also offers timely information to users. Information is found to positively influence users' attitudes and the result is consistent with Chang and Zhu (2011) and Sun et al. (2014) who show that seeking useful and timely information is an important motive of Chinese users in adopting WeChat. Chinese users see WeChat as a tool to receive and share important and timely information. WeChat should often update information on products/services and provide users with reliable quality of real-time information transmission to improve their attitudes which will eventually lead to the positive WOM. As per sociality, users can chat and connect with friends and meet new friends through WeChat easily. The significant, positive effect of sociality on users' attitudes supports Chang and Zhu (2011) demonstrating that social interaction is a major motivation of Chinese users in adopting WeChat. An example of motivating WeChat users to actively interact with their friends is the event of "Chinese new year red envelope" started in January, 2014. Traditionally, the Chinese gift one another in the lunar New Year by filling red envelopes with money for good luck. WeChat launched an official "new year red envelope" account and allowed its users to send and receive a virtual

"red envelope". The amount of money put in each red envelope is credited to the receiver's bank account. To make it more entertaining, users can select one friend to send a red envelope to, or let the app randomly divide money between a group of friends, with only the first 20 people to open their envelope receiving the money (<https://sg.news.yahoo.com/wechat-launches-online-39-red-envelope-39-app-170906276.html>). Sending a red envelope to friends helps to activate interaction and participation in social networks and create a common concern and topic. This novel app service introduced by WeChat contains both social interaction and entertainment and is a clever integration of Chinese tradition into a digital product.

Trust is found to have a significant positive effect (0.170) on attitudes. Trust is also found to have a significant direct impact (0.337) and an indirect effect through attitudes ( $0.170 \times 0.249 = 0.04$ ) on positive WOM with a total effect of 0.377. The positive influence of trust on attitudes is consistent with previous research (Shih et al., 2013; Shin, 2010; Suh and Han, 2003). Trust is significantly associated with positive WOM corroborating previous studies (Chu and Kim, 2011; Gremler et al., 2001; Matos and Rossi, 2008; Ranaweera and Prabhu, 2003; Sichtmann, 2007). The higher the trust level users have on the comments of products/services on WeChat, the more likely they will feel comfortable in using WeChat and will engage in making positive products/services ratings on WeChat. The overall mean of trust is 3.04 (out of 5), showing that the WeChat users in China slightly agree with the reliability of products/services comments posted on WeChat. One possible reason is that Chinese users usually trust the products/services comments posted/sent from their good friends and the well-known companies. If the products/services comments are posted/sent from others (e.g., unclosed friends or the unknown companies), the Chinese WeChat users may not have full confidence in the veracity of the comments. Using testimonials, the recognized certificates and awards of the products/services, and WeChat certified official account (<http://act.wechat.com/showcase/en/>) are ways to build users' trust. WeChat launched an official account platform in August, 2012. If WeChat users find a company posts incorrect messages on its certified official account, they can report it to WeChat and the company's certified official account will be canceled. Thus, the reliability of posted products/services comments will increase. Although a company can create its certified official account on WeChat, not every company did. One major reason is that a company needs to hire experienced people to manage its certified official account and to reply the questions raised by users which increase the operating costs. Another reason is a Chinese shortage of experienced people who specialize in managing certified official accounts ([http://news.xinhuanet.com/fortune/2014-03/03/c\\_119569328.htm](http://news.xinhuanet.com/fortune/2014-03/03/c_119569328.htm)). However, we observe that recently more Chinese WeChat users have added certified official accounts to their social networks which may motivate more companies (especially for those small to medium sized enterprises) to create their certified official accounts on WeChat.

In terms of attitudes, the overall mean of attitudes is 4.27 (out of 5), reflecting the Chinese users have positive attitudes toward the use of WeChat. Attitudes have a significant effect (0.249) on positive WOM supporting Shih et al. (2013). Motivating users through entertaining, inspiring social interaction, providing timely and convenient products/services information, and building users' trust improves their attitudes which in turn will increase their willingness in making positive comments on products and services on WeChat.

The overall mean of making positive WOM is 3.5 (out of 5), indicating that the Chinese WeChat users have the willingness to positively comment on the products and services. The improved users' attitudes toward WeChat and the increased trust on WeChat will

enhance Chinese WeChat users' intentions in explaining the positive properties of the purchased products/services to their friends.

## 6. Limitations and directions for future research

There are four limitations associated with this study. First, this study examines WeChat users' motivations, attitudes, trust, and positive WOM in China and the results may not be generalized to WeChat users in other countries. Second, this research surveyed WeChat users in Shanghai only. Since Shanghai is the financial center of China with good mobile infrastructure, WeChat users in Shanghai may not be representatives of the total WeChat population in China. Third, entertainment, sociality, and information were identified as three major psychological motivations of using SNS in the literature and are used in our research. The three motivations may not fully reflect Chinese users' motivations. Fourth, our study specifically investigates young adults (aged 18–30). However, it is noted that the older, white-collar adults (aged 31–50) in China have gradually become important WeChat users and they may have different attitudes and behaviors toward the use of WeChat than young adults.

For future research, assessing other age groups (e.g. older white-collar adults) and the countrywide survey in China may generate new insight on the relationships among motivations, attitudes, trust, and positive WOM. In addition, further research could study other possible Chinese WeChat users' motives, such as convenience, conformity, and social support. Comparing WeChat users in different countries (e.g., China and Canada) regarding their motivations for using WeChat and their associated behaviors is a topic worth exploring. Satisfaction represents whether WeChat users are satisfied with WeChat and is an important antecedent of positive word-of-mouth. Investigating the effect of WeChat users' satisfaction on positive WOM is also a good topic for the future study. Perceived service quality reflects a user's overall impression of the relative superiority or inferiority of the services provided by WeChat. So far, little is known about WeChat users' perceived service quality and its influence on users' satisfaction and positive WOM. Measuring the direct effect of service quality on positive WOM and the indirect effect on positive WOM mediated by satisfaction are suggested. Finally, it seems more companies would like to capitalize on WeChat to promote their products/services. Therefore, evaluating the effectiveness of marketing promotion through WeChat deserves research.

## Appendix A

Constructs and items
<i>Entertainment (E)</i> (Ducoffe, 1996)
E1: WeChat is fun to use
E2: Using WeChat is entertaining
E3: Using WeChat is pleasing
<i>Sociality (S)</i> (Chang and Zhu, 2011; Raacke and Bonds-Raacke, 2008)
S1: I can meet new friends through WeChat
S2: I can find old friends through WeChat
S3: I can keep in touch with my friends through WeChat
<i>Information (I)</i> (Chang and Zhu, 2011)
I1: WeChat is a convenient source of information
I2: WeChat is a good source of information
I3: WeChat provides timely information
<i>Trust (T)</i> (Matos and Rossi, 2008)
T1: The comments of products/services on WeChat are correct

## Appendix A (continued)

Constructs and items
T2: Comments on WeChat are reliable
T3: I am confident on the comments of products/services posted on WeChat
<i>Attitudes (A)</i> (Chung and Austria, 2010)
A1: I feel comfortable in using WeChat
A2: I like using WeChat to communicate with my friends
A3: I have a positive attitude toward WeChat
<i>Positive Word-of-Mouth (PW)</i> (Shih et al., 2013)
PW1: I explain the positive properties of my purchased products/services to my friends on WeChat
PW2: I positively comment on the popular products and services on WeChat
PW3: I make positive product/service ratings on WeChat

## References

- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 84(5), 888–918. <http://dx.doi.org/10.1037/0033-2909.84.5.888>.
- Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.
- Bagozzi, R. P. (1981). Attitudes, intentions, and behavior: A test of some key hypotheses. *Journal of Personality and Social Psychology*, 41(4), 607–627. <http://dx.doi.org/10.1037/0022-3514.41.4.607>.
- Brown, T. J., Barry, T. E., Dacin, P. A., & Gunst, R. F. (2005). Spreading the word: Investigating antecedents of consumers' positive word-of-mouth intentions and behaviors in a retailing context. *Journal of the Academy of Marketing Science*, 33(2), 123–138. <http://dx.doi.org/10.1177/0092070304268417>.
- Brown, J., Broderick, A. J., & Lee, N. (2007). Word of mouth communication within online communities: Conceptualizing the online social network. *Journal of Interactive Marketing*, 21(3), 2–20. <http://dx.doi.org/10.1002/dir.20082>.
- Chang, Y. P., & Zhu, D. H. (2011). Understanding social networking sites adoption in China: A comparison of pre-adoption and post-adoption. *Computers in Human Behavior*, 27(5), 1840–1848. <http://dx.doi.org/10.1016/j.chb.2011.04.006>.
- Chu, S. C., & Choi, S. M. (2011). Electronic word-of-mouth in social networking site: A cross-cultural study of the United States and China. *Journal of Global Marketing*, 24(1), 263–281. <http://dx.doi.org/10.1080/08911762.2011.592461>.
- Chu, S. C., & Kim, Y. (2011). Determinants of consumer engagement in electronic word-of-mouth (eWOM) in social networking site. *International Journal of Advertising*, 30(1), 47–75. <http://dx.doi.org/10.2501/IJA-30-1-047-075>.
- Chung, C., & Austria, K. (2010). Social media gratification and attitude toward social media marketing messages: A study of the effect of social media marketing messages on online shopping value. *Proceedings of the Northeast Business & Economics Association*, 581–586.
- Correa, T., Hinsley, A. W., & de Zuniga, H. G. (2010). Who interacts on the web? The interaction of users' personality and social media use. *Computers in Human Behavior*, 26(2), 247–253. <http://dx.doi.org/10.1016/j.chb.2009.09.003>.
- Ducoffe, R. H. (1996). Advertising value and advertising on the Web. *Journal of Advertising Research*, 36(5), 21–35.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2006). Spatially bounded online social networks and social capital: The role of Facebook. In *The annual conference of the international communication association (ICA) in Dresden, Germany*.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Gao, F., & Zhang, Y. (2013). Analysis of WeChat on iPhone. In *2nd international symposium on computer, communication, control, and automation* (pp. 278–281).
- Gremler, D. D., Gwinner, K. P., & Brown, S. W. (2001). Generating positive word-of-mouth communication through customer-employee relationship. *International Journal of Service Industry Management*, 12(1), 44–59. <http://dx.doi.org/10.1108/09564230110382763>.
- Guo, C., Shim, J. P., & Otondo, R. (2010). Social network services in China: An integrated model of centrality, trust, and technology acceptance. *Journal of Global Information Technology Management*, 13(2), 76–99.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate Data Analysis* (7th ed.). New Jersey: Pearson Education Inc.
- Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Utilization of mass communication by the individual. In J. G. Blumer & E. Katz (Eds.), *The uses of mass communications: Current perspectives on gratifications research* (pp. 19–32). Beverly Hills, CA: Sage.
- Kim, Y., Sohn, D., & Choi, S. M. (2011). Cultural difference in motivations for using social network sites: A comparative study of American and Korean college

- students. *Computers in Human Behavior*, 27(1), 365–372. <http://dx.doi.org/10.1016/j.chb.2010.08.015>.
- 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. <http://dx.doi.org/10.1080/00913367.2005.10639191>.
- Laaksonen, T., Jarimo, T., & Kulmala, H. I. (2009). Cooperative strategies in customer–supplier relationships: The role of interfirm trust. *International Journal of Production Economics*, 20(1), 79–87. <http://dx.doi.org/10.1016/j.ijpe.2008.07.029>.
- Lin, K. Y., & Lu, H. P. (2011). Why people use social networking sites: An empirical study integrating network externalities and motivation theory. *Computers in Human Behavior*, 27(3), 1152–1161. <http://dx.doi.org/10.1016/j.chb.2010.12.009>.
- 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>.
- Matos, C. A., & Rossi, C. A. V. (2008). Word-of-mouth communications in marketing: A meta-analytic review of the antecedents and moderators. *Journal of the Academy of Marketing Science*, 36(4), 578–596. <http://dx.doi.org/10.1007/s11747-008-0121-1>.
- Maxham, J. G. (2001). Service recovery's influence on consumer satisfaction, positive word-of-mouth, and purchase intentions. *Journal of Business Research*, 54(1), 11–24. [http://dx.doi.org/10.1016/S0148-2963\(00\)00114-4](http://dx.doi.org/10.1016/S0148-2963(00)00114-4).
- Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationship between providers and users of marketing research: The dynamics of trust within and between organizations. *Journal of Marketing Research*, 29(3), 314–329.
- Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20–38. <http://dx.doi.org/10.2307/1252308>.
- Park, M., 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. <http://dx.doi.org/10.1089/cpb.2009.0003>.
- Raacke, J., & Bonds-Raacke, J. (2008). MySpace and Facebook: Applying the uses and gratifications theory to exploring friend-networking site. *CyberPsychology & Behavior*, 11(2), 169–174. <http://dx.doi.org/10.1089/cpb.2007.0056>.
- Ranaweera, C., & Prabhu, J. (2003). On the relative importance of customer satisfaction and trust as determinants of customer retention and positive word of mouth. *Journal of Targeting, Measurement and Analysis for Marketing*, 12(1), 82–90. <http://dx.doi.org/10.1057/palgrave.jt.5740100>.
- Roy, S. K. (2009). Internet uses and gratifications: A survey in the Indian context. *Computers in Human Behavior*, 25(4), 878–886. <http://dx.doi.org/10.1016/j.chb.2009.03.002>.
- Shih, H. P., Lai, K. H., & Cheng, T. C. E. (2013). Informational and relational influences on electronic word of mouth: An empirical study of an online consumer discussion forum. *International Journal of Electronic Commerce*, 17(4), 137–165. <http://dx.doi.org/10.2753/JEC1086-4415170405>.
- Shin, D. H. (2010). The effects of trust, security, and privacy in social networking: A security-based approach to understand the pattern of adoption. *Interacting with Computers*, 22(5), 428–438. <http://dx.doi.org/10.1016/j.intcom.2010.05.001>.
- Sichtmann, C. (2007). An analysis of antecedents and consequences of trust in a corporate brand. *European Journal of Marketing*, 41(9), 999–1015. <http://dx.doi.org/10.1108/03090560710773318>.
- Sledgianowski, D., & Kulviwat, S. (2009). Using social network sites: The effects of playfulness, critical mass and trust in a hedonic context. *Journal of Computer Information Systems*, 49(4), 74–83.
- Suh, B., & Han, I. (2003). The impact of customer trust and perception of security control on the acceptance of electronic commerce. *International Journal of Electronic Commerce*, 7(3), 135–161.
- Sun, Y., Liu, L., Peng, X., Dong, Y., & Barnes, S. J. (2014). Understanding Chinese users' continuance intention toward online social networks: An integrative theoretical model. *Electronic Markets*, 24(1), 57–66. <http://dx.doi.org/10.1007/s12525-013-0131-9>.
- Tencent (2013). Fourth quarter and annual results announcement <<http://www.tencent.com/en-us/content/ir/news/2014/attachments/20140319.pdf>>.
- Westbrook, R. A. (1987). Product/consumption-based affective responses and post-purchase processes. *Journal of Marketing Research*, 24(3), 258–270.
- Yang, H. D., & Yoo, Y. (2004). It's all about attitude: Revisiting the technology acceptance model. *Decision Support System*, 38(1), 19–31. [http://dx.doi.org/10.1016/S0167-9236\(03\)00062-9](http://dx.doi.org/10.1016/S0167-9236(03)00062-9).