

# **Mobile Crowdsourcing: Intrinsic and Extrinsic Motivational Factors Influencing Online Communities in China**

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*The ubiquity of crowdsourcing has become a new tool for creativity activities of online communities by participating on social platforms in marketing spheres. Mobile crowdsourcing is emerging as new approach to attract mobile crowd in online creativity tasks. The aim of this research is to contribute to the current body of knowledge on intrinsic and extrinsic motivation to crowdsourcing via social networks by analyzing various motivational factors influencing users to perform tasks in online activities. This paper provides exploration of several motivational factors in online communities and we develop a research model to explain various motives in crowdsourcing activities. We then proceed to identify the driving factors to attract online users to participate in contribution through social platforms. Using a survey based research design, involving mobile users in China, we analyzed the impacts of intrinsic motivation and incentive factors to use Chinese social networks linked with online creativities. We find that intrinsic motivations are linked to higher level of online users' to contribute in crowdsourcing rather than extrinsic motivations in Chinese context. The findings of the study have significant practical implications for online creativities in crowdsourcing for crowds in China.*

## **INTRODUCTION**

Mobile crowdsourcing systems and applications in recent years has made easier to be more creative in interaction with communities and in innovation processes using open source software with technology (Kozinets et al., 2008) and this advancement has led to increase interest and the importance of networks of companies for consumers (Grefen et al., 2000). In order to derive potential benefits, organizations are combining information technology and knowledge sharing through online activities (Davenport and Prusak, 1998). High technology development in China is growing rapidly and has changed the way of business in China. The competition of business in China and potential impact of competitive Chinese technology has reduced dependency on foreign technology especially from Japan and United States (Adam Segal, 2011). Open source software and open source communities are based on community collaboration and are run completely by and for users (von Hippel & von Krogh 2009).

Mobile Industry is fast growing in services sector such as it includes smart phones, location-based services or mobile Internet. According to projection (Kessler, S. 2011, Microsoft tag-mashable), mobile internet consumption is increasing as compare to computer based internet consumption as 91% of mobile internet is used to access social platforms compared to 79% on desktops. Mostly the mobile phone is used as device for checking weather forecast, for search engines, for social networking and for gaming as well as for reading news. Internet usage in mainland China has promoted virtual civil society and over 618 million internet users in China (Liau, ZDNet, 2012). The President of top online media group 'Tencent' in China expressed his views on 24 June, 2014 in Beijing, "China's Internet will be increasingly integrated with other technologies and industries...those who adapt the fastest and with the most agility will succeed" (PRNewswire China, 2014). Cell phone and Internet connectivity and usage has increased dramatically in recent years and mobile services have been the big success story of telecoms in China. In China several brands and business companies had crowdsourced interesting ideas but they were remained on surface level. The big online power players of western countries like Google, Face book, Twitter, YouTube, EBay etc are popular in other countries but in Chinese society substitute of these sites are more popular. 'Baidu Encyclopedia' is just like Wikipedia, 'Qzone' the most popular social network around the world whose users are almost only Chinese, is in third place behind Face book and YouTube and others 'Weibo, Sina' works like Twitter, and Youku as YouTube. Mr Sun Baohong, a professor at the New York City Campus of Beijing-based Cheung Kong Graduate School says, "Compared with U.S. people, Chinese people prefer engaging with others through social media on mobile applications" (China Newsletter, 2014).

Intrinsic and extrinsic motivations are very important for users' participation. Although motivational factors are often considered to be general construct with online participation, an individual's desire to be the part of social setup but these individuals create value as online communities and develop social culture (Zheng et al., 2011; Konsonen et al., 2013; Grant et al., 2011). Different studies report quite different effects of motivational factors on online communities (Brabham 2010; Zheng et al., 2011; Grant et al. 2011). Nambisan and Baron (2009) talk about social and personal motivational factors and along with social and technical motivators; psychological factors are also discussed by Hoyer et al., (2010). In current available literature as described in next part, several studies have identified different intrinsic and extrinsic motivators for online communities' participation. Though previous researches enhance our understanding on motivational factors for crowds but the participation and incentive orientation varies in different cultures (Varnum et al., 2010). However there exist some gaps and our research fill this gap by investigating empirically role of intrinsic and extrinsic motivations online communities through mobile crowdsourcing. To map the motivations, our research develop a model based on intrinsic and extrinsic motivation relevance to crowdsourcing communities in different social set ups. This study objective is to explore what attributes on creating activities for mobile crowdsourcing and to examine broader scope of participation motivations in crowdsourcing. Academic research on motivational factors of participation in crowdsourcing using Chinese social networks is scarce and this study reports an empirical research conducted in China. The key questions in this article are thus which important benefits that motivates online communities to contribute for online activities.

The remainder of the article is as follows. First, we review the related work about motivational factors and online communities. We then describe a research model based on the literature of motivational theories and research hypotheses developed on the basis of intrinsic and extrinsic motivations. Next the data and methods for the study are described. Then statistical analysis is done and the discussion part is presented. Finally, we discuss the main findings and practical implications of research.

## **RELATED WORK**

Mobile crowdsourcing is about sociology and psychology more than technology and is becoming socio technical in China. One of the great promises of mobile networks in China is that it offers new ways of bringing people together and various online communities are converted from 'smart mobs' (Rheingold, 2002) to 'crowdsourcing' (Shirky, 2008). The culture of youth innovation in China is getting intensified

in the term 'user-created-content' and that creativity should be encouraged. In China, social activity sites are growing rapidly on mobile devices and more young people are getting influenced by modern western culture (Marina, 2010). China is moving ahead of the west in mobile online usage both in technology wise and businesswise. The increasing connectivity and interaction of the Chinese people by mobile crowdsourcing has empowered millions of Chinese to form a collective power. Researchers in China developed system for mobile crowdsourcing micro-tasks available to crowd on mobile. Mobile crowdsourcing (mCrowd) platforms in Chinese network users can rapidly create, deliver and perform micro-tasks and social incentives are protruding to encourage smart phone based crowdsourcing.

A number of studies are explored in online communities (Lakhani & Wolf, 2005; Shah, 2006; Jappesen & Molin, 2003). The main agents of innovations in online communities are users themselves (von Hippel, 1988) and most of the time these users are co-creators (Nambisan, 2002). In China, mostly firm hosted platforms are used by online communities, where users freely share products and services with other users. Academic research on online communities 'participation in mobile crowdsourcing is yet scarce and research on importance of motivational factors including social, psychological need and different interactive characteristics is required (Porter et al., 2001, Nambisan and Baron, 2009). Internet as a collaborative platform is a crucial prerequisite for crowdsourcing and participatory motivation on internet takes a new quality, a new scale and new capabilities. Online communities are engaged in crowdsourcing activities or in any aspect of online contribution most of the times are motivated to participate. The understanding of online communities' participation in crowdsourcing in different regions is necessary and lot of studies and surveys have been conducted on motivation of participation in crowdsourcing (Brabham, 2010). All studies indicate that there are some extrinsic and intrinsic motivations related to many common reasons of participation. Online communities participate with same motivations in crowdsourcing as in other participatory platforms such as tagging content on flickr (Nov et al., 2008), contributing to Wikipedia (Nov, 2007), posting videos (Huberman et al., 2009) or blogging (Liu et al., 2007).

Many studies have investigated potential influence that motivates people to participate in online communities and identified motivational factors for contribution to online activities such as positive effect on one's feeling of efficacy (Bandura, 1977), positivity in reputation (Kollock, 1999), enjoyment (Wasko and Faraj, 2000), improving learning skills (Hertel et al., 2003) and to face challenge (Lakhani & von Hippel, 2003). Intrinsic motivations are related to the pro-social feelings and extrinsic motivations are desire to satisfy own needs. Both intrinsic and extrinsic motivations have also been recognized as important factors on behavioral consequences and effect of both motivations have different characteristics. Most past empirical studies investigate a lot motivating factors for participating in crowdsourcing in online communities (Brabham, 2010; Stewart, 2010; Olson et al., 2012; Afuah et al., 2012; Bloodgood, 2013; Dodge et al., 2013; Huberman et al., 2009; Kosonen et al., 2013). Past research on motivational theories are discussed by Maslow's (1987) five level pyramid, Eccles and Wigfield (2002) focus on the reasons for participation, Schunk (1991) who argues motivational factors and Zheng & Dahui (2011) distinguishes between extrinsic and intrinsic motivation. Extrinsic motivation is related to recognition rewards (Zheng & Dahui, 2011) or to instrumental or external reasons (Eccles and Wigfield, 2002) and related to monetary rewards and reputation (Ryan and Deci, 2000). Intrinsic motivation is related to curiosity, eager to learn (Ryan and Deci, 2000) and this is more towards natural tendency that comes from individuals' internet interests. Several studies are done on effects of intrinsic and extrinsic motivations on online contribution with regard to western social online platforms (Wasko & Faraj, 2005; Fuller, 2006; Shah, 2006; Roberst et al, 2006; Lampel & Bhalla, 2007; Nov, 2007).

Theories related to motivations tried to explain the contribution factors to online creativity crowdsourcing. Motivation for online communities to participate that influence individuals are based on cognitive benefits, social integrative benefits, and personal integrative benefits and hedonic or affective benefits (Katz et al., 1974). A number of psychologists and economists suggested motivation theories based on behavior of individuals. Psychological literature provides broadest level of impact on motivation based on different elements and economic literature advocates reward as positive impact on motivation. With regard to intrinsic motivation, psychologists studied the motivational factors and task interest in

online participation. Different motivation theories such as self-determination theory (SDT), cognitive evaluation theory (CET) (Deci, 1971, Ryan and Deci, 2000), General Interest theory (GIT) (Cameron & Pierce, 1994) and regulatory focus theory (RFT) (Judge et al., 2002) and these theories provide systematic way to categorize motivations. SDT/CET, GIT argues that circumstantial factors can have effect on intrinsic motivation and GIT focuses on more towards behavioral perceptions in broader than SDT/CET while RFT focuses on individual orientation in crowdsourcing communities.

### **Theoretical Background And Research Model**

Social psychology develops the impact of cultural characteristics in collaboration on online activities. The basic assumptions that characterize culture significantly how people perceive and how they interact with others. Self-determination, cognitive evaluation and general interest theory scholars provide us systematic model to categorize different motivations. General Interest Theory suggests that personal relevance to interesting activities is factor linked to individual need of satisfaction for contribution in crowdsourcing online communities (Cameron et al., 2001). Theory of Regulatory focus maintains that individual orientation are formed within personality and shaped by culture (Higgins, 1997, Higgins, 2000). We ground our assumption on intrinsic and extrinsic motivating factors impact to participate in online activities of crowdsourcing from prior research (Afuah et al. 2012; Archak 2010; Bayus 2013; Bloodgood 2013; Boudreau et al. 2013; Brabham 2010; DiPalantino et al. 2009; Dodge et al. 2013; Hossain 2012; Huberman et al. 2009; Kaikati et al. 2013; Kosonen et al. 2013; Majchrzak et al. 2013; Olson et al. 2012; Stewart et al. 2010). It is common knowledge that nations and regions differ in belonging, value systems and generic differences associated with each culture (Lloyd, 1996). Asian cultures emphasize on ability to support social processes (Setlock and Fassell, 2010), especially, East Asians are more holistic while westerns tend to be more analytic (Varnum et al., 2010). Collectivism dimension is one that makes Chinese different from westerns (Nicholas Breeley, 1993). *Guanxi* (social exchange) is a major leitmotif in Chinese society for social interaction (Pye, 1985).

Mobile phone has become an important symbol to a channel of social interaction and networking in urban Chinese daily lives. Mobizens are online communities with interests to participate in online networks that increase technology of citizenship to promote and contribute in online activities.

There are several studies on motivational factors on different forums but the motives for Chinese users' to participate in crowdsourcing via mobile platforms in Chinese characteristics way is scarce. Influence mechanism may not be attractive for Chinese users (Mason & Watts, 2009) so to formulate the factors that motivate Chinese crowds to participate through Chinese platforms will be an exclusive study. We derive motivational factors from theoretical perspectives that are inculcating in Chinese culture and persuade users to contribute for crowdsourcing in Chinese networks.

Two main streams of motivations are presented in research model intrinsic and extrinsic. Three main variables as motivational factors are identified under each dimension with several measurements under in Chinese context.

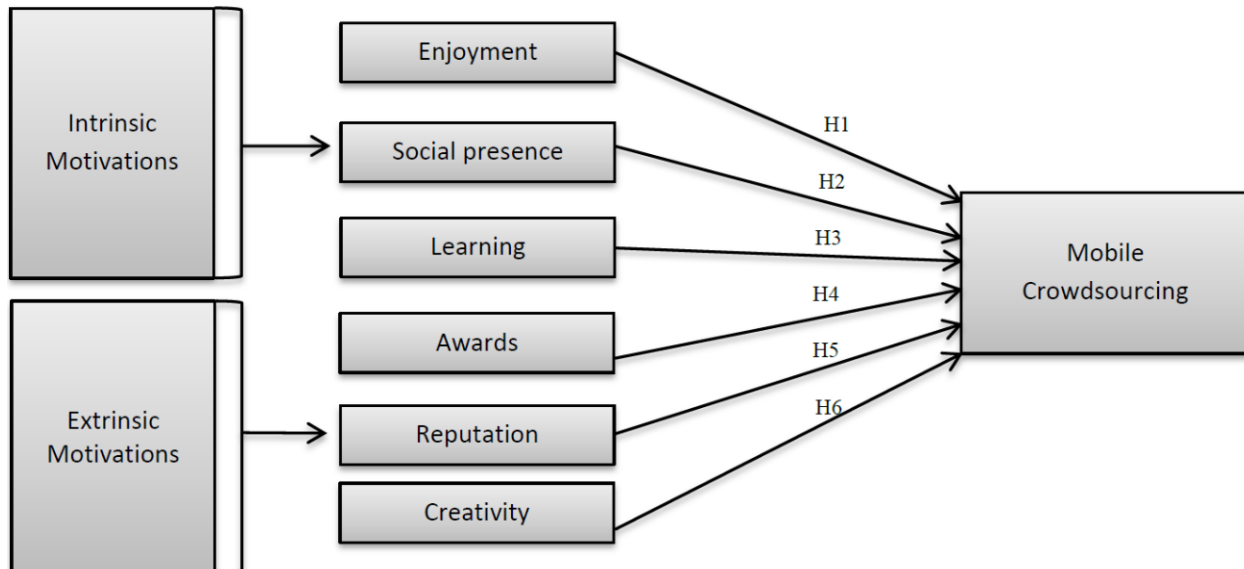
The first potential motivation in intrinsic factors which is related to enjoyment (Zwass, 2010; Battistella et al., 2012) is the most valuable return is happiness. There is a chance of gain enjoyment to satisfy inner self instead of eternal purpose in the community. Based on the discussion regarding enjoyment as motivation in Chinese way in online communities (Yang et al., 2011), the following hypothesis is derived.

*H1. Enjoyment as motivational factor has a positive effect on Chinese users to participate in mobile crowdsourcing.*

Social presence (Short et al., 1976; Afuah et al, 2012; Brabham, 2010) includes the social interaction with friends and other community. This kind of presence can improve the contribution of certain participants in online crowdsourcing. The online platforms provide chances to easily get comments from community and improve the tasks. The following hypothesis is tested to know the technology integration as motivational factor.

*H2. Social presence as motivational factor has a positive effect on Chinese users to participate in mobile crowdsourcing.*

**FIGURE 1  
RESEARCH MODEL**



Online communities participate in online crowdsourcing activities in order to learn and expand their skills (Fuller, 2006; Nov, 2007). Participants can get more opportunities to learn on online crowdsourcing platforms. Online crowdsourcing platforms can add the learning in a specific innovative task and enables participants to learn. The following hypothesis is derived to test:

*H3. Learning as motivational factor has positive effect on Chinese users to participate in mobile crowdsourcing.*

Rewards in shape of monetary incentives or recognition in a contest and solving the problem may satisfy the desire of individual for winning monetary rewards and recognized by communities (Horton & Chilton, 2010; Zheng & Dahui, 2011; Bayus, 2013). Study of Zheng & Dahui (2011) shows that the motivation to solve more online problems increases the desire of higher monetary reward. Based on the discussions regarding awards, the following hypothesis is derived:

*H4. Award as motivational factor has positive effect on Chinese users to participate in mobile crowdsourcing.*

Reputation is an important motive for users to participate some activities and the users may get more attraction from the platform recognition in online communities. In study of Lakhani et al. (2007), reputation and career is important when there is a chance of being recognized in the community. From the arguments above, the following hypothesis is derived:

*H5. Reputation as motivational factor has positive effect on Chinese users to participate in mobile crowdsourcing.*

Problem Solving in crowdsourcing gives the satisfaction and experience of challenging task (Lakhani et al, 2007). Personal desire to get ability of creativity for performing a task provides internal incentive and reward (Battistella et al., 2012). Within the concept of creativity to solve a problem, the following hypothesis is derived:

*H6. Creativity as motivational factor has positive effect on Chinese users to participate in mobile crowdsourcing.*

## RESEARCH METHOD

### Data Collection

In order to test the research model (Figure 1) and to assess the impact of intrinsic and extrinsic motivational factors in crowdsourcing via mobile, we selected potential online Chinese networks platforms that are popular social networks. This study is located in China and university students are used as sample population because online services have become the routine in urban Chinese youth daily lives and students from various provinces of China are the part of study.

For the measurement of motivational factors an online survey questionnaire was developed and a total of 6000 questionnaires were distributed directly and with link of web based questionnaire by email to university students studying in different universities located in major cities of China. In person visits were also made to ask the participants to fill the questionnaire in hard form to collect the data from participants whose emails were not accessed. After sending several reminders, 3,500 respondents filled out questionnaire. In all, 3200 participants answered all survey items completely that were included in data analysis.

### Measures

The items in the research instrument were developed based on the literature review and adapted from validated scaled from prior studies. Measurement items for intrinsic motivations were adapted from previous studies (Zwass, 2010; Battistella et al., 2012; Yang et al., 2011; Short et al., 1976; Afuah et al., 2012; Brabham, 2010; Fuller, 2006; Nov, 2007). Measurements for extrinsic motivational factors were developed from study of Horton & Chilton, (2010); Zheng, (2011); Bayus, (2013) Lakhani et al. (2007) and Battistella et al., (2012). We used standard translation in Chinese and back translation in English to ensure the scales in Chinese context.

The survey was consisted out of three parts. First part, some questions with regards to the demographic aspects of each participant is given such as age, education, and gender etc. The second part includes questions about their social networks usage duration and for what purposes they use. The third part consists of questions about the intrinsic and extrinsic motivations to participate in mobile crowdsourcing. The questions are based on a Likert response scale with a 5-point format from 1= strongly disagree to 5 = strongly agree. The key independent variables are six motivational factors enjoyment, social presence, learning, awards, reputation and creativity. 'Reasons to use social networks' are used as dependent variable. In addition to key independent and dependent variables, the control variables gender, education and age are used in this research.

For the analysis of the data several statistical tests were used. For each of the motivational items, descriptive statistics including mean standard deviation and Skewness/Kurtosis were calculated. Factor analysis was conducted on the motivational items and correlation analysis was conducted, followed by regression analysis in order to share common characteristics and further hypotheses were tested.

### Demographic Features

The data for this study presents demographic characteristics and mobile social network usage in table 2. As it can be seen in table 1, the sample is little skewed towards males as the results show that 1,844 (57.6%) male and 1,356 (42.4%) females have responded in this study. The age bracket of the respondents is from 18 to 37 years as 2,155 (67.3%) are aged between 18-22 years, 895 (28.0%) are aged between 23-27 years, 112 (3.5%) are aged between 28-32 years while 38 (1.2%) are between 33-37 years. In terms of education attaining, 2,063 (64.5%) respondents are from graduate studies, 789 (24.7%) are from master studies and 348 (10.9%) are from PhD studies. All respondents are having smart phones with mobile internet connection and 363 (11%) are having both devices (smart phones & tablets). The sample population is using popular social apps and networks from the last 13 years and majority respondents 2,091 (65.3%) are using mobile apps and social networks up to four to six years. The most important reason to use these networks is tabulated and it is found that 2,572 (80.4%) respondents use these social networks for updates and to interact with society. The sample is relatively representative of the population

from east, west, south, north, central, south east, north east, north west, south west, south central, coastal eastern, north east and mostly all parts of China as respondents are from different provinces of China studying in universities.

**TABLE 1  
DEMOGRAPHIC FEATURES**

	Demographics			Mobile Networks	
	N	%		N	%
<b>Gender</b>			<b>Mobile Chat Network Users</b>		
Female	1,356	42.4	QQ	3,081	96.3
Male	1,844	57.6	WeChat	2,178	68.1
Total	3,200	100.0	Line	94	2.9
<b>Age</b>			Weibo	1,031	32.2
18-22 years	2,155	67.3	Wangwang	304	9.5
23-27 years	895	28.0			
28-32 years	112	3.5	<b>Mobile Social Blogs</b>		
33-37 years	38	1.2	QQ	2,831	88.5
<b>Total</b>	3,200	100.0	WeChat	2,309	72.2
<b>Level of Education</b>			RenRen	1,062	32.2
Graduation	2,063	64.5	Weibo	1,478	46.2
Master	789	24.7	Pengyou	321	10.0
PhD	348	10.9			
<b>Total</b>	3,200	100.0	<b>Mobile Networks for Online Products</b>	<b>N</b>	<b>%</b>
<b>Phone Devices Users</b>	<b>N</b>	<b>%</b>	Tmail	2,188	68.4
Smart Phones	3,200	100.0	Alibaba	712	22.2
Tablets & Smart Phones	363	11.3	Amazon	1,120	35.0
Mobile Internet Users	3,200	100.0	Taobao	2,410	75.3
<b>Duration Using Networks</b>			Jingdong	1,421	44.4
1-3 years	499	15.6	Suning	277	8.7
4-6 years	2,091	65.3	1haodian	419	13.1
7-9 years	449	14.1	VIPshop	426	13.3
10-13 years	166	8.8	JD.Com	1,155	36.1
Total	3,200	100.0	163.com	271	8.5
<b>Reasons to Use Networks</b>	<b>N</b>	<b>%</b>			
Social Symbol	15	0.5	<b>Mobile Networks for Information</b>	<b>N</b>	<b>%</b>
Popularity of Networks	47	1.5	QQ.com	730	22.8
Interact with Society	361	11.3	Baidu	3,092	96.6
Get Updates	2,572	80.4	Soso.com	501	15.7
For Online Products	83	2.6	Weibo	381	11.9
Technology Advancement	122	3.8	Sohu	393	12.3
<b>Belonging Home Towns</b>			Sina	402	12.6

	N	%		N	%	Netease	217	6.8
An hui	112	3.5	Jiang Su	119	3.7	<i>Mobile Networks for Video/Photo Sharing</i>	N	%
Beijing	14	.4	Jiang xi	119	3.7	QQ	2,402	75.1
Chong-qin	24	.8	Jilin	14	.4	WeChat	1,974	61.7
Fu jian	77	2.4	Liao-ning	56	1.8	RenRen	908	28.4
Gansu	21	.7	Macau	7	.2	Weibo	1,032	32.2
Guang-don	84	2.6	Ningbo	7	.2	Sina	706	22.1
Guang xi	84	2.6	Ningxia	28	.9	Kuaibo	460	14.4
Guizhou	70	2.2	Qing hai	21	.7	Sohu	702	21.9
Hai nan	28	.9	Shan-dong	120	3.8	Youku	1,614	50.4
He bei	49	1.5	Shan xi	147	4.6	Ifeng.com	453	14.2
He Nan	308	9.6	Shanghai	21	.7	Toudou	971	30.3
Hei ling	12	.4	Si chuan	140	4.4			
Hu Nan	161	5.0	Tianjin	7	.2			
Hubei	1155	36.1	Xinjiang	42	1.3			
Inner - Mongolia	42	1.3	Yun nan	28	.9			
Ji Lin	14	.4	Zhe-Jiang	42	1.3			
<b>Total</b>				3200	100%			

The percentage of mobile platforms users as shown in table 1, among the respondents it reflects that in chat networks, 3,081 (96%) participants use QQ, 2,178 (68%) use WeChat and 1,031 (32.2%) use Weibo. Among mobile social blogs, 2831 (88.5%) respondents use QQ, 2,309 (72.2%) use WeChat, 1,478 (46.2%) use Weibo and 1,062 (32.2%) use RenRen. Among online products networks, Taobao is used by majority of the respondents followed by Tamil, Jingdong, JD.com and Amazon. Among networks for information and updates, Baidu is used by 3,092 (96.6%) respondents and among videos and pictures sharing networks, the most popular are QQ (2,402, (75.1%)), WeChat 1,974 (61.7%) and Youku 1,614 (50.4%) used by respondents.

## DATA ANALYSIS AND RESULTS

### Scale Validation: The Measurement Model

The model is tested to achieve satisfactory scale assessment. Reliability of the model is assessed by means of composite reliability. As shown in Table 2, all composite reliabilities are higher than 0.7, which is the cutoff value. Convergent validity is assessed by examining factor loading and average Variance extracted (AVE). In our study, all the other factor loadings ranged close to or above 0.7. Moreover, all AVEs were higher than 0.50. Therefore, sufficient convergent validity is met in the study.



**TABLE 2  
MEASURES**

Constructs	Items	Loading	t-Statistic	Composite Reliability	AVE
Intrinsic Motivation (Enjoyment)				0.92	0.80
	Enjoy_1	0.93	54.01		
	Enjoy_2	0.89	46.23		
Intrinsic Motivation (Social Presence)				0.92	0.79
	Soc-Pres_1	0.90	33.09		
	Soc-Pres_2	0.89	23.59		
Intrinsic Motivation (Learning)				0.92	0.79
	Learn_1	0.92	41.88		
	Learn_2	0.88	28.71		
Extrinsic Motivation (Awards)				0.78	0.66
	Award-M_1	0.88	28.71		
	Awards-M_2	0.85	30.47		
Extrinsic Motivation (Reputation)				0.85	0.65
	Repu-1	0.87	40.45		
	Repu-2	0.85	31.31		
Extrinsic Motivation (Creativity)				0.81	0.59
	Creat-1	0.88	17.40		
	Creat-2	0.74	13.63		

Descriptive results for each variable are presented in table 3. These descriptive results indicate the perception of respondents and motivational items with higher mean score indicates they were highly evaluated by the respondents compared to those which has a low mean score. The mean values of items under each variable in this research are fairly high in mean score ranging from 3.12 to 3.98. Skewness refers to the symmetry of distribution and Kurtosis refers to the peakness of the distribution. The Skewness and Kurtosis of variables shown in table 3 falls within acceptable range as the most commonly critical value for Z (Kurtosis/skewness) distribution is  $\pm 2.58$ .

**TABLE 3  
DESCRIPTIVE STATISTICS**

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
<b>Intrinsic Motivations</b>							
Enjoyment	3200	3.38	1.257	-.417	0.43	-.887	.087
Social Presence	3200	3.62	1.202	-.657	0.43	-.467	.087
Learning	3200	2.95	1.322	-.063	0.43	-1.175	.087
<b>Extrinsic Motivations</b>							
Awards	3200	3.42	.874	-.495	0.43	.109	.087
Reputation	3200	3.98	1.183	-.021	0.43	-.853	.087
Creativity	3200	3.12	1.218	-.244	0.43	-.901	.087

Pearson correlation analysis method is used to test the linear correlation between motivational variables and demographic variables in table 4. The first five variables relate to demographic characteristics of the respondents while the remaining six variables are the intrinsic and extrinsic motivational determinants. The results suggest a positive significance relationship between the constructs and the results indicate that important capacities where motivation to participate in online activities ought to be directed.

**TABLE 4  
INTERCONSTRUCT CORRELATION**

		1	2	3	4	5	6	7	8
Demographic	1	1							
	2	.00	1						
	3	-.06**	.83**	1					
	4	-.05**	.10**	.08**	1				
	5	.09	.27**	.30**	.07**	1			
Main Variables	6	.76*	.37**	.24**	.24**	.41**	1		
	7	.39**	.27**	.38**	.43**	.39**	.10	1	
	8	.17**	.35**	.13**	.19**	.15**	.26**	.02	1
	9	.18**	.26**	.12**	.27**	.31**	.15**	.01	.11**
	10	.09**	.22**	.15**	.24**	.16**	.53**	.07	.16**
	11	.12**	.14**	.09**	.22**	.09**	.46**	.57**	.02

\*correlation is significant at the 0.05 level (2-tailed).

\*\*correlation is significant at the 0.01 level (2tailed)

Key: 1 = Gender, 2 = Education, 3 = Age, 4 = Reasons of Networks usage, 5 = Duration of using networks, 6 = Enjoyment, 7 = Social Presence, 8 = Learning, 9 = Awards, 10 = Reputation, 11 = Creativity

Regression analyses are conducted for each of the hypotheses shown in table 5. Enjoyment has a significant effect on crowdsourcing (coefficient = 0.34,  $p < 0.001$ ). Therefore, H1 is supported. Social presence has significant effect on crowdsourcing (coefficient = 0.28,  $p < 0.001$ ). Therefore, H2 is supported. Motivation to learning is significantly associated with crowdsourcing (coefficient = 0.18,  $p < 0.001$ ), supporting H3. Furthermore, we find that reward has a positive effect on crowdsourcing participation intention (coefficient = 0.16,  $p < 0.05$ ), so H4 is supported. Reputation has a significant effect on crowdsourcing (coefficient = 0.15,  $p < 0.01$ ). Therefore, H5 is supported. Creativity is also significantly associated with crowdsourcing (coefficient = 0.14,  $p < 0.1$ ), indicating that H6 is supported. According to the results, intrinsic motivations are found to have a strong significant effect on mobile crowdsourcing comparing the effects of extrinsic motivation in mobile crowdsourcing.

**TABLE 5**  
**HYPOTHESES TESTING**

Hypothesis		Coefficient	Significance level	Supported/ Not supported
H1	Enjoyment → Mobile Crowdsourcing	0.34	$P < 0.001$	Supported
H2	Social Presence → Mobile Crowdsourcing	0.28	$P < 0.001$	Supported
H3	Learning → Mobile Crowdsourcing	0.18	$P < 0.001$	Supported
H4	Awards → Mobile Crowdsourcing	0.16	$P < 0.05$	Supported
H5	Reputation → Mobile Crowdsourcing	0.15	$P < 0.01$	Supported
H6	Creativity → Mobile Crowdsourcing	0.14	$P < 0.1$	Supported

## DISCUSSION

Emerging research interest in motivational factors in crowdsourcing, we develop and test a research model that examines the motivational factors influencing user's participation. In this paper, intrinsic and extrinsic motivational factors to participate in online activities for mobile crowdsourcing have been put forward. The most essential motivational items are addressed in this article related to Chinese social networks as mobile phone is also symptomatic of a new individualism in China (Yu, 2004). This research addresses the quantity of potential motivations into intrinsic and extrinsic motivations: enjoyment, social presence, learning, awards, reputation and creativity (Battistella et al., 2012; Yang et al., 2011; Short et al., 1976; Afuah et al, 2012; Brabham, 2010). Private space, personal desire and individual interest are embedded in Chinese society and mobile communication based on personal choices and for individual pleasure encourages Chinese users for online contribution. The motivational factors in Chinese online users' interaction with society are more important as found in this study. The online motivation is becoming increasingly important in Chinese networks to involve users in companies' crowdsourcing. Mobile crowdsourcing practices are likely to become a major managerial concern because online activities have a potential role to influence company's innovation (von Hippel, 2005).

Mobile crowdsourcing is not simple promotional tool but rather a continuous customer participation process to engaging online communities in Chinese context. Chinese online networks are communication networks between friends, family members and this tie of social interactions create motivation tendencies more towards online activities. Chinese culture is a high context culture and people are deeply related to one another rooted into collectivist. Mobile crowdsourcing with Chinese networks fits with social factors and the present analysis regarding online communities' crowdsourcing motivations via mobile present to investigate for the firms to engage networks participants. Chinese social networks are essential mechanism in social interaction in this community that motivates online communities to be engaged for their personal interest (Zheng, 2011).

According to our results, the sample is skewed toward younger, well-educated and diverse individuals using popular social networks on mobiles. We note that largest amount of users are between 18 to 25 years of age as 95% of young Chinese and middle aged are particularly enthusiastic about mobile communications (Yu, 2004). Some interesting results are shown in the study intrinsic motivations are interrelated closely with social network usage for online activities than extrinsic motivations. Another very interesting point, considered to have a positive relationship with online social networks. From all the variables, enjoyment and social presence showed the strongest positive relationship which is backed by the multiple regression analysis (table 5).

All hypotheses are supported on the basis of results and one finding of our analysis was that to be part of society encourages their participation in mobile crowdsourcing. Social presence and learning is also important as motivation factors (Yang et al., 2011) in Chinese context. Extrinsic motivations can be more attractive factor with incentives and benefits of personal creativity (Horton & Chilton, 2010).

We find that Chinese networks are tending to provide meaningful channel to contribute online crowdsourcing. Therefore, in the Chinese context, online activities with standardized incentives to individuals can not only motivate Chinese online communities to provide creative ideas, but also make it more convenient for companies to get their needed tasks. Chinese online social networks should put more efforts to connect with considerable monetary reward and promote psychological aspect and participating motivations for Chinese people with incentive mechanism (Zheng, 2011).

## **PRACTICAL IMPLICATIONS**

The findings of the current study also highlight some crowdsourcing elements for sponsors. These findings have a number of implications for social networks in general but primarily for companies' link to these networks, where knowledge about online communities and factors to engage communities in Chinese context is still scarce. This study finding can be practically implemented to motivate Chinese communities. Companies can make use of this by linking these perceived motivations in their online activities connected to mobile social networks. Especially a focus on personal benefits can have strongest output for mobile as the findings of the crowdsourcing study shows motivational factor to be promoted for individual benefits.

These findings do not support Nambisan and Baren (2009) for monetary awards as potential motivator because we found that personal enjoyment, learning and social presence are considered as potential motivation for Chinese communities' without financial incentives. Other factors incentives and awards are already present and are focused by online communities on Chinese social networks for mobile crowdsourcing as proved by this study but are not having much important motivational element. From a theoretical point of view, the findings of our analysis was that addressing online communities motivational factors (Cameron et al., 2001, Higgins, 2000) to mobile crowdsourcing through Chinese social networks. This clearly goes against incentives motivation what one would expect the most important motivation in Chinese networks. As majority of the respondents in our sample preferred enjoyment, social and learning motivational factors.

The findings add to the literature by introducing a partial explanation for the relationship between social and personal interests of mobile crowdsourcing in Chinese society. More broadly, the study helps to bridge the gap between companies and social network connectivity in mobile crowdsourcing literature. More over this research provides an attempt the helping people behaviors (Zheng, 2011) might represent much stronger motive of social and technology to participate in mobile crowdsourcing.

## **LIMITATIONS**

We note several limitations in this study and that the interpretations of the findings should be generalized to other contexts with caution. This study has theoretical and a number of other limitations as all academic research have. The first concern is that there is lack of research on motives to participate in mobile crowdsourcing in Chinese context, we relied on studies in online communities motivations done in

other parts of world. The other concern is with selected data collection method of this study, the findings of this research cannot be largely generalized. However the findings of this research can still be taken as add up to advantage to some extent by companies in mobile crowdsourcing.

The main limitation is that all mobile social networks users participating in crowdsourcing or not were considered. Drawing on studies in multiple literatures (Brabham, 2010; Stewart, 2010; Olson et al., 2012; Afuah et al., 2012; Bloodgood, 2013; Dodge et al., 2013; Huberman et al., 2009; Kosonen et al., 2013) we developed a list of twelve items under six dimensions. Two factors enjoyment and social presence proved to be more important although other factors were also very important in crowdsourcing motivation that was not emerged as potential factor in this study. One main factor regarding this sample is that Chinese users may be more driven by extrinsic motivation than by intrinsic motivation.

## CONCLUSION

As presented in this paper, the motives, enjoyment, social presence, learning and reputation are significantly affect the participation in online crowdsourcing. Crowdsourcing still remains little understood and create space for many questions (Hopkins, 2011). This study enriches emerging way of mobile crowdsourcing to motivate online communities. Our findings are helpful for both companies and mobile social networks to create activities in mobile crowdsourcing. Social motivations are (Writz et al., 2013) very important to mobile crowds in online activities. Crowdsourcing and mobile apps and linking networks are very important for companies. The results of this study hopefully contribute to the body of knowledge in mobile crowdsourcing with social networks.

Based on the results in this study, we conclude that mobile crowdsourcing is a promising approach for further research. Future research can be lead to the mobile crowdsourcing activities and crowdsourcing practices. Further studies might choose to address potential motivational factors to increase personal integration in mobile crowdsourcing and types of incentives companies can employ in various Chinese social networks.

Furthermore research on companies networks association with online communities for mobile crowdsourcing topics are encouraged. In the future research, we will investigate online review system in Chinese consumers for crowdsourcing ideas.

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