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The effect of intrinsic and extrinsic motivations on mobile coupon sharing in social network sites

The role of coupon proneness

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Abstract

Purpose – The purpose of this paper is to investigate the influence of two intrinsic (i.e. sense of self-worth and socializing) and two extrinsic motivations (i.e. economic reward and reciprocity) on mobile coupon (m-coupon) sharing by users in social network sites (SNSs). Moreover, this study examines how coupon proneness moderates the relationship between motivations and m-coupon sharing in SNSs.

Design/methodology/approach – A research model that integrates four motivations, coupon proneness, and m-coupon sharing is developed. Quantitative data from 247 users are collected via online and offline survey. Partial least squares technique is employed to evaluate the measurement model, and hypotheses are tested through hierarchical regression analysis.

Findings – Sense of self-worth, socializing, economic reward and reciprocity have positive effects on m-coupon sharing in SNSs. Furthermore, coupon proneness positively moderates the relationship of socializing and reciprocity with m-coupon sharing, whereas the moderating effects of coupon proneness on the relationship of sense of self-worth and economic reward with m-coupon sharing are insignificant.

Originality/value – The findings highlight the integrated effects of coupon proneness and motivations on m-coupon sharing in SNS. The impact of socializing and reciprocity on m-coupon sharing is higher for users with higher coupon proneness. However, the effect of sense of self-worth and economic reward on m-coupon sharing is the same regardless of coupon proneness of users. Therefore, although users with different motivations should be identified, SNSs and merchants should develop different incentive mechanisms to promote m-coupon sharing among various users.

Keywords China, E-commerce, Information management, Mobile communications

Paper type Research paper

1. Introduction

As an effective mobile marketing approach, mobile coupon (m-coupon) has been widely adopted by mobile commerce merchants. Juniper-Research (2012) predicted that the total redemption value of m-coupons globally will exceed USD43 billion by 2016. Numerous couponing applications (e.g. DingDing couponing and Doujiao couponing) and m-coupon websites (e.g. www.coupon.ddmap.com and www.doujiao.com) have been launched. One of these couponing applications, Dianping coupon, was revealed to



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have been downloaded more than 40 million times. Furthermore, m-coupons have been downloaded once, whereas users browse these coupons three times (CECRC, 2012).

m-Coupons are defined as coupons sent to and stored on a mobile device (such as smart phones and personal digital assistants) and can be exchanged for a monetary discount or a rebate (Juniper-Research, 2009). m-Coupons can carry messages including text, pictures, audio, and even videos (Dickinger and Kleijnen, 2008). Users also obtain and redeem m-coupons easily. m-Coupons have received considerable attention because they can be obtained and redeemed easily; in fact, m-coupons have a higher average redemption rate (10 percent) than traditional printed coupons and e-coupons (typically 1 percent or less) (Juniper-Research, 2012). m-Coupon sharing by users also facilitates the usage of m-coupons and enables merchants to obtain more revenue (Juniper-Research, 2012). Social media, such as social network sites (SNSs), serves as an effective online tool for word of mouth communications (Jansen *et al.*, 2009). SNS (e.g. Facebook) is a new social communication system that allows the individual to construct his/her profile; share text, images, and photos; and link to other members of the site through various communication services (boyd and Ellison, 2007). SNS has significant consumer penetration and can significantly change consumer attitudes and behaviors toward products and services (Nielsen, 2012). The integration of couponing platforms and SNSs can further promote m-coupon sharing (Juniper-Research, 2012). m-Coupons can be passed from one person to his/her personal network in SNSs. m-Coupon sharing in SNSs is an example of viral marketing behavior. Viral marketing describes the marketing instrument that leverages the power of personal networks to promote products or services, and it has been fueled by the growing popularity of SNSs these past few years (Sciuzze *et al.*, 2014). Compared with mass media marketing, marketing information is generated by users and shared in their networks in SNSs. The core goal of viral marketing is to promote information sharing in SNSs. A forwarded m-coupon in an SNS can reach numerous users without time and space constraints. In addition, viral marketing information from peers is considered reliable, and users rely more on the recommendation of peers than traditional advertising from merchants (Cheung and Lee, 2012; Cheung *et al.*, 2008; Hsueh and Chen, 2010).

Despite the lucrative prospect of m-coupon viral m-coupon marketing in SNSs, why users share m-coupons in SNSs remains unclear. Thus, the present study addresses this question by investigating the determinants of m-coupon sharing in SNSs. By using m-coupons, merchants can attract more consumers and develop a larger market, where users can buy products and services for lower price.

The present study also explores what motivates users to share m-coupons in SNSs. Motivation can shape the desire of a member to participate in knowledge and information sharing (MacInnis *et al.*, 1991). Prior studies on information sharing and knowledge contribution have identified several motivations that determine the sharing behavior of users. Such motivations are mostly based on two categories of motivations, namely intrinsic and extrinsic. Main intrinsic motivation factors include sense of self-worth and socializing. Sense of self-worth describes the positive cognition of an individual based on his/her contribution to others (Bock *et al.*, 2005; Pi *et al.*, 2013), while socializing describes the need to develop and maintain relationships with other SNS users (Lee and Ma, 2012). The primary extrinsic motivation factors include economic reward and reciprocity. Economic reward is a tangible return, such as extra discount or increased pay, for information sharing behavior (Kankanhalli *et al.*, 2005), while reciprocity means users expect to get returns in the future when sharing information (Cheung and Lee, 2012). However, previous studies have identified three gaps. First, the relationship between

motivations and sharing was never examined in the context of m-coupons. Second, the effects of intrinsic and extrinsic motivations on information sharing have been investigated separately (Chai and Kim, 2012; Yu *et al.*, 2010) rather than jointly. Third, the findings on the effect of intrinsic and extrinsic motivations on information sharing are inconsistent. For example, an extrinsic motivation, that is, economic reward, was found to have a negative impact on knowledge sharing (Bock *et al.*, 2005), but have positive impact in another study (Hau *et al.*, 2013). Therefore, the present study investigates how intrinsic and extrinsic motivations (i.e. sense of self-worth, socializing, economic reward, and reciprocity) influence m-coupon sharing in SNSs.

In the context of SNSs, several factors may affect the result of viral marketing. The inconsistent or even conflicting influence of motivations on information sharing intention reveals the existence of moderating factors. The effect of motivations on m-coupon sharing may vary among individuals with different levels of preference on m-coupons. In this study, we posit that coupon proneness can moderate the relationship between motivations and the intention to share m-coupons. Coupon proneness is conceptualized as an increased propensity to respond to a purchase offer because of the coupon form of promotion (Chen and Lu, 2011; Lichtenstein *et al.*, 1990). Consumers with high coupon proneness have high evaluation of the coupon value, such as socializing, condition, and economic value. The perceived coupon value can moderate the effect of motivations on the sharing and loyalty behavior (Anderson and Srinivasan, 2003). Thus, coupon proneness is reasonably expected to moderate the relationship between motivations and m-coupon sharing. Therefore, this study examines how coupon proneness changes the relationship between intrinsic and extrinsic motivations and the intention to share m-coupons in SNSs.

The rest of the paper is organized as follows: first, we introduce the theoretical background of this study and present the research model and hypotheses. Next, the research methodology and the results of hypotheses are presented. Subsequently, we discuss the findings. Finally, we present the theoretical and managerial implications of this study.

2. Theoretical background, research model, and hypotheses development

2.1 *m-Coupon sharing in SNSs*

Sharing m-coupons in SNSs is a form of viral marketing that was initially referred to as “network-enhanced word of mouth (eWOM)” which describes the marketing strategy of the free e-mail service Hotmail (Jurvetson and Draper, 1997). Merchants send electronic content (i.e. the URL containing detailed promotion information) to “seed” consumers who are motivated to pass along the electronic content to their friends. When the information is forwarded and picked up by a large group of users, the promotion information becomes “viral.” Viral marketing uses consumer-to-consumer communication, which is different from merchant-to-customer communication in traditional mass media marketing. Merchants also initiate promotion and send information to their targets in SNS. This form of marketing is not viral marketing because the information comes from merchants and cannot be shared between users. Viral marketing is an efficient way to locate target customers, capture the attention of recipients, trigger interests, and facilitate adoption (De Bruyn and Lilien, 2008). SNS (e.g. Renren.com and Facebook) is a platform for interpersonal communication and fosters the development of viral marketing. Viral marketing of m-coupon in SNS aims to develop promotion information picked by hundreds or thousands of people. The shared m-coupon has a high level of acceptance because of additional trust from friends.

The viral marketing of m-coupons typically starts with firms creating m-coupons in the form of texts and images to improve redemption rate. The URL that contains the information on the coupon will be created when shared with friends and relatives in SNSs. A SNS user can post the URL of the m-coupon in his/her personal homepage as a broadcast or forward it to particular friends. The forwarded m-coupon in SNSs contains pictures of the coupon and a URL. SNS Users who are interested in the m-coupon can download the coupon and save it on their cell phone. If the m-coupon is forwarded and users who receive it redeem and share it, the m-coupon will obtain a higher redemption rate and reach a larger group of users.

2.2 Intrinsic and extrinsic motivations

Despite the encouraging prospect of m-coupon sharing in SNSs, the underlying dynamics that explain why users have been participating in this viral marketing remains unexplored. We use motivation theories to explore the motivations in m-coupon viral marketing in SNSs. Motivations that drive the behavior and formation of consumer attitude has long been investigated. Motivations serve as forces that shape the desires of members or their readiness to participate in m-coupon sharing. Motivations can be divided into two categories, namely, intrinsic and extrinsic. According to self-determination theory (SDT), humans are intrinsically motivated to approach activities that are interesting, optimally challenging, and spontaneously satisfying (Deci and Ryan, 2000). Intrinsic motivation is driven by values provided directly within the work itself (Niemiec *et al.*, 2006). In our study, sense of self-worth and socializing are intrinsic motivations that trigger the intention of users to share m-coupons.

Sense of self-worth describes inner happiness and satisfaction when sharing m-coupons in SNSs. Sense of self-worth is the degree of positive cognition based on one's feeling of personal contribution to others based on m-coupon sharing behavior (Bock *et al.*, 2005). SDT proposes that an understanding of human motivation requires a consideration of innate psychological need for competence, autonomy and relatedness (Deci and Ryan, 2000). As a macro theory of motivation, SDT is widely used to investigate human behavioral motivations (Deci and Ryan, 2008). Sense of self-worth is a social-psychological force and a motivation for people to construct an image of themselves as competent (Stefanone *et al.*, 2011). It is regarded as one of the basic psychological needs according to SDT and as an antecedent in information sharing (Yan and Davison, 2013).

As an altruistic behavior, contributing information may be driven by the need to be helpful and the potential to enhance their sense of self-worth. As a type of altruism motivation, sense of self-worth positively affects participation (Bock *et al.*, 2005; Hennig-Thurau *et al.*, 2004; Ho and Dempsey, 2010). Promotional information is forwarded to users who may need it in viral marketing. Individuals who evaluate the hint link between their contribution and the welfare of other members are more likely to contribute information (Cheung and Lee, 2012; Oh, 2012). The altruism gratification is essential in m-coupon viral marketing. Self-efficacy derived from sense of self-worth positively affects knowledge sharing behavior in virtual communities (Hsu *et al.*, 2007). Thus, we propose the following hypothesis:

- H1.* Sense of self-worth has a positive effect on the intention to share m-coupons in SNSs.

Socializing is another intrinsic motivation that is described as affiliation need and the enjoyment of being connected (Jeon *et al.*, 2011). Socializing originates from uses and

gratification (U&G) theory, which describes how social and psychological needs motive an individual to select a particular social media (Lee and Ma, 2012). Based on the U&G framework, socializing benefit is one of the most critical motivations that trigger individuals to participate in information sharing in SNSs (Nambisan and Baron, 2009; Park *et al.*, 2009). Socializing refers to the need to develop and maintain relationships with other SNS users (Lee *et al.*, 2010). Following users and gratification theory, social gratification, such as sense of belonging, can be derived from the use of social media.

Several scholars have uncovered the possible relationship between socializing gratification and media consumption. Socializing is regarded as one of the gratifications that motivate individuals to use SNSs and to share news (Lee and Ma, 2012). Socializing is a key gratification that affects sharing on the internet (Ji and Fu, 2013) and motivates users to participate in a Facebook group (Park *et al.*, 2009). Lee *et al.* (2010) detected the significant relationship between socializing and content sharing within a game-based environment. Studies on eWOM in SNS have also verified the importance of socializing gratification. Moreover, Cheung and Lee (2012) noted that users with a sense of belonging with the group are willing to contribute eWOM. Therefore, individuals with socializing gratification are more likely to share m-coupons in their social network. Thus, we propose the following hypothesis:

H2. Socializing has a positive effect on the intention to share m-coupons in SNSs.

Extrinsic motivations satisfy indirect or instrumental needs. Social exchange theory suggests that the interaction between individuals is based on the exchange of tangible or intangible resources (Lambe *et al.*, 2001). It is widely used as a theoretical justification for organizational behavior such as knowledge sharing (Jin *et al.*, 2010). Economic reward and reciprocity are associated with an actor's own welfare and have been adopted to explain word-of-mouth spreading based on social exchange theory (Cheung and Lee, 2012).

Economic reward is an extrinsic motivation. Adequate economic reward provides satisfaction derived from m-coupon sharing. Prior studies have contradicting findings on the effect of economic reward on information sharing. Economic rewards, such as promotions, salary raises, and larger bonuses, have a significant effect on information providing (Lee *et al.*, 2011; Lin and Huang, 2013). However, Bock *et al.* (2005) suggested that extrinsic rewards hinder, rather than facilitate, the formation of positive attitudes toward knowledge sharing. Hau *et al.* (2013) indicated that the influence of organizational rewards that is dependent on information character has a negative effect on the intention of employees to share tacit knowledge but has a positive effect on their intention to share explicit knowledge.

In this study, we posit that economic reward positively influences the intention to share m-coupons in SNSs. Economic rewards are regarded as incentives for one's contribution and are effective in promoting information sharing (Hau *et al.*, 2013). Moreover, economic reward can reduce the intrusiveness for sharing information, such as m-coupon information (Chang *et al.*, 2013). M-coupon sharing is likely to occur when users perceive that economic incentives exceed the costs. Thus, we propose the following hypothesis:

H3. Economic reward has a positive effect on the intention to share m-coupons in SNSs.

Reciprocity is a sense of mutual indebtedness. Based on social exchange theory, users expect reciprocity to justify their expense and effort in m-coupon sharing (Chiu *et al.*, 2006). Users who send an m-coupon to their friends and relatives may expect reciprocity in SNSs.

Reciprocity also affects information sharing (Cheung and Lee, 2012; Jeon *et al.*, 2011). Individuals who receive reciprocity from others in SNSs exhibit supportive behaviors, such as knowledge sharing. Gratification from mutual helping also motivates users to share information in online communities (Chiu *et al.*, 2006). In addition, employees have a positive attitude toward knowledge sharing based on their desire to be fair and reciprocate (Bock *et al.*, 2005). In the context of m-coupon viral marketing, users contribute m-coupon to others with the expectation of being helped in the future. As a measurement of relational capital in SNS, reciprocity also facilitates information sharing (Rao *et al.*, 2011; Wasko and Faraj, 2005). Therefore, we propose the following hypothesis:

H4. Reciprocity has a positive effect on the intention to share m-coupons in SNSs.

2.3 Motivations, coupon proneness, and intention to share m-coupons

Coupon proneness is the psychological characteristic of individuals toward m-coupons that describes their personal preference to the form. Consumers with high coupon proneness perceive that m-coupons have high value, which can enhance the effect of sense of self-worth on m-coupon sharing. Users with high coupon proneness tend to forward m-coupons because these can produce monetary value for receivers. Therefore, higher coupon proneness results in strong gratifications of being helpful, which further enhances m-coupon sharing (Zha *et al.*, 2012). We hypothesize that:

H5. The effect of sense of self-worth on the intention to share m-coupons is greater for users with high coupon proneness than for those with low coupon proneness.

Chen and Lu (2011) investigated the influence of coupon proneness on m-coupon redemption behavior and found a positive relationship between coupon proneness and monetary and social values of m-coupons. Meanwhile, coupon proneness is also related to the perceived social value of m-coupons. As the sharing behavior helps interactions with other members, m-coupon sharing is likely to occur for users with high coupon proneness and eager to enhance their self-image and keep in touch with others. Thus, we hypothesize as follows:

H6. The effect of socializing on the intention to share m-coupons is greater for users with high coupon proneness than for those with low coupon proneness.

Coupon proneness is the preference for coupons for the monetary saving they provide, and users with high coupon proneness are more concerned about the monetary values in using and sharing m-coupons (Bawa and Shoemaker, 1987). Users also expect extra incentives for their efforts in m-coupon sharing (Dickinger and Kleijnen, 2008). In such a case, the economic reward is more influential in motivating the users to share m-coupons. We propose that the moderating effect of coupon proneness is significant in the relationship between economic reward and intention to share m-coupons:

H7. The effect of economic reward on the intention to share m-coupons is greater for users with high coupon proneness users than for those with low coupon proneness.

With high coupon proneness, SNS users who share information expect coupons from friends when sharing m-coupons (Wasko and Faraj, 2000). They emphasize the value of reciprocity in sharing information (Bawa and Shoemaker, 1987). Users with high coupon proneness often collect and use m-coupons. If receivers can obtain m-coupons because of their contributing behavior, users with high coupon proneness are more

likely to share them in SNSs. Thus, coupon proneness enhances the influence of reciprocity on m-coupon sharing. We propose the following hypotheses:

H8. The effect of reciprocity on the intention to share m-coupons is greater for users with high coupon proneness than those with low coupon proneness.

Subsequently, we propose the research model shown in Figure 1 based on the above statements. Both intrinsic and extrinsic motivations (i.e. sense of self-worth, socializing, economic reward, and reciprocity) have positive effects on the intention of users to share m-coupons in SNSs. Moreover, coupon proneness positively moderates the effects of motivations on m-coupon sharing in SNSs.

3. Research methodology

3.1 Data collection

A survey instrument was developed to collect quantitative data. The survey was conducted both online and offline in China. The online questionnaire was posted on a social media site for ten days (from July 2 to 11, 2013). Each respondent was promised to receive CNY 2 after completing the survey. A total of 1,122 visitors were recorded, but only 105 respondents returned the questionnaire. The offline survey was conducted based on the promotion activity of a m-coupon application from July 2 to 7, 2013.

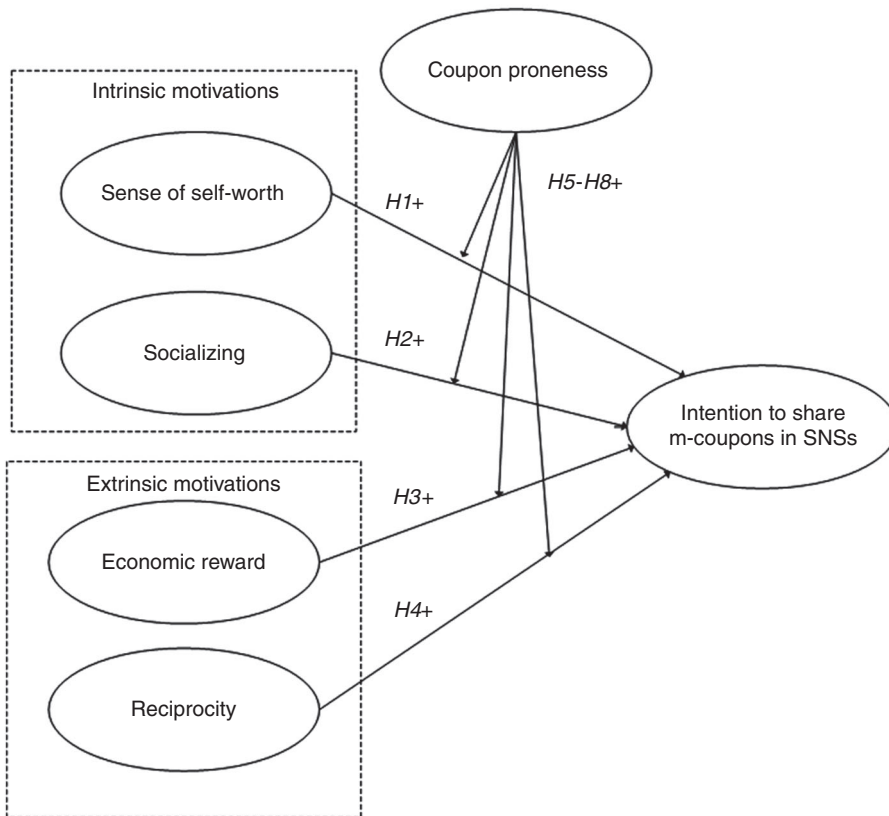


Figure 1.
Research model

A total of 142 m-coupon users returned the questionnaires. Therefore, the total sample size was 247 and the overall response rate was 22 percent. The sample demographics are presented in Table I.

3.2 Construct measurement

We adopted measurement items that have been validated in previous studies to ensure the validity of the instruments. Three control variables that may have an effect on m-coupon sharing intention were introduced, namely, gender, age, and education. A previous study indicated that gender and age had a significant impact on the usage of knowledge sharing systems (Yan and Davison, 2013). Therefore, gender and age may also influence m-coupon sharing in SNSs. Moreover, users with a high level of education are prone to coupon use (Bawa and Shoemaker, 1987). Thus, we control the effect of education on m-coupon sharing. The measurement items were modified to satisfy the research context. The original items were in English, and thus, back translation was conducted. The initial questionnaire was reviewed and pretested by two researchers and ten postgraduate students of information system (IS) to ensure that it is understandable. Subsequently, the questionnaire was revised based on the feedback of the researchers and students. The constructs and items are shown in Table II. All items were measured with a seven-point Likert scale that ranges from "strongly disagree" to "strongly agree."

3.3 Data assessment

Common method bias is a potential threat to the sample. This bias was tested via two methods. First, we performed Harman's single factor test, in which all constructs are entered into the exploratory factor analysis (Liang *et al.*, 2007; Yoon and Rolland, 2012). Factors were extracted with eigenvalues greater than one, and no factor explained most of the variance. Second, partial least squares (PLS) was used to check for common method bias as suggested by Liang *et al.* (2007). We added a common method factor in the measurement model that included all principal construct indicators. The variances of each indicator that were substantively explained by the principal construct and by the method factor were calculated. As shown in Table III, all method loadings were insignificant. Moreover, substantive variances for each single-indicator construct were greater than method variances. Thus, common method bias was not a serious concern in our study.

Characteristics	Range	Number	%
Gender	Male	136	55.1
	Female	111	44.9
Age	≤18 years	1	0.4
	18-24 years	153	61.9
	24-30 years	74	30
	30-35 years	14	5.7
	35 to 40 years	4	1.6
	> 40 years	1	0.4
Education	Secondary school or less	2	0.8
	Junior college	22	8.9
	Bachelor's level	136	55.1
	Master's level or higher	87	35.2

Table I.
Sample
demographics

Constructs	Items	Measurement of items	Reference
Coupon proneness (CPro)	CPro1	I use coupons regardless of the amount I save by doing so	Lichtenstein <i>et al.</i> (1990)
	CPro2	I have favorite brands/stores, but intend to buy the brand or at the store I have a coupon for	
	CPro3	I am more likely to buy brands or at stores for which I have a coupon	
	CPro4	Coupons have caused me to buy products that I normally would not buy	
	CPro5	I enjoy searching for coupons from newspapers, Internet, or mobile phone	
Sense of self-worth (SSW)	SSW1	My m-coupon sharing in SNS would help other members solve problems	Bock <i>et al.</i> (2005), Zha <i>et al.</i> (2012)
	SSW2	My m-coupon sharing in SNS would create new opportunities for other members	
	SSW3	My m-coupon sharing in SNS would help other members get monetary value	
Socializing (SO)	SO1	I can interact with people when sharing m-coupon on SNS	Lee <i>et al.</i> (2010), Lee and Ma (2012), Park <i>et al.</i> (2009)
	SO2	I can keep in touch with people when sharing m-coupon on SNS	
	SO3	I feel like that I belong to a community when sharing m-coupon on SNS	
Economic reward (ER)	ER1	I will receive monetary rewards in return for sharing m-coupon on this SNS	Bock <i>et al.</i> (2005), Hau <i>et al.</i> (2013)
	ER2	I will receive additional points for promotion in return for sharing m-coupon on this SNS	
Reciprocity (ReC)	ReC1	When I share m-coupon through this SNS, I believe that I will get an m-coupon for sharing an m-coupon	Cheung and Lee (2012)
	ReC2	When I share m-coupon through this SNS, I expect somebody to respond when I'm in need	
	ReC3	When I share m-coupon through this SNS, I expect to get back m-coupon when I need it	
	ReC4	I know that other members in this SNS will share m-coupon, so it's only fair to share m-coupon	
Intention to share (InS)	InS1	I intend to share m-coupon in this SNS in the future	Bock <i>et al.</i> (2005), Lee and Ma (2012), Rao <i>et al.</i> (2011)
	InS2	I expect to share m-coupon in this SNS contributed by other users	
	InS3	I plan to share m-coupon in this SNS regularly	

Table II.
Constructs and items

Kruskal-Wallis test was performed to check if there were differences between the responses from the online survey and those from the offline survey. The significant levels of all sample characteristics are higher than 0.05 (Liu, 2015). Therefore, no difference exists in our sample and there is no significant method bias in our study.

3.4 Measurement assessment and results

In this section, we checked the validity and reliability for the measurement model. PLS was used for data analysis. PLS is component-based SEM method (Qureshi and Compeau, 2009) that have been accepted by IS researchers (Chow and Chan, 2008; Keil *et al.*, 2013; Liang *et al.*, 2007). We selected PLS for two reasons. First, PLS works well for a small sample size (Liu and Wang, 2014a; Wetzels *et al.*, 2009). Second, PLS is

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Construct	Indicator	Substantive factor loading ($R1$)	$R1^2$	Method factor loading ($R2$)	$R2^2$
Cpro	Cpro1	0.3***	0.09	0.351***	0.123
	Cpro2	0.349***	0.122	0.306***	0.094
	Cpro3	0.682***	0.465	0.094	0.009
	Cpro4	0.923***	0.852	-0.107*	0.011
	Cpro5	0.802***	0.643	0.019	0.0004
SSW	SSW1	0.881***	0.776	0.015	0.0002
	SSW2	0.922***	0.85	-0.034	0.0012
	SSW3	0.718***	0.516	0.024	0.0006
SO	SO1	0.709***	0.503	0.158**	0.025
	SO2	0.933***	0.87	-0.087	0.0076
	SO3	0.811***	0.658	-0.074	0.0055
ER	ER1	0.936***	0.876	-0.019	0.0004
	ER2	0.909***	0.826	0.019	0.0004
ReC	ReC1	0.609***	0.371	0.21**	0.044
	ReC2	0.955***	0.912	-0.08	0.006
	ReC3	0.954***	0.91	-0.149**	0.022
	ReC4	0.672***	0.452	0.039	0.002
InS	InS1	0.849***	0.721	0.045	0.002
	InS2	1.011***	1.022	-0.168**	0.028
	InS3	0.749***	0.561	0.116	0.013
Average			0.650		0.020

Table III.
Common method
bias analysis

Notes: *, **, ***Significant at $p < 0.05$, $p < 0.01$, $p < 0.001$, respectively

appropriate for exploratory study (Gefen *et al.*, 2011). All constructs were modeled to be reflective, as suggested by Petter *et al.* (2007).

The convergent and discriminate validity were first examined in our study. The convergent validity was tested by the following three criteria: all item-to-construct loadings should be greater than 0.7; the composite reliability (CR) should exceed 0.70; and the average variance extracted (AVE) should be higher than 0.50 (Liu, 2016; Liu and Wang, 2016). Table IV shows the item-to-construct loadings and Table V shows the values of CR and AVE. The three criteria have been met, and our model exhibits good reliability and convergent validity. Moreover, we checked for the discriminant validity by examining whether the square root of the AVE of each construct is larger than its correlations with the other constructs (Liu and Wang, 2014b). Table V also shows all of the values of AVE and the correlations of each pair of constructs. Our model passed the discriminant validity. Therefore, the entire measurement model manifests the satisfied properties.

Hierarchical regression analysis was conducted with PLS to test the hypotheses in the research model. Several models were tested stepwise. The model began with control variables (Model 1), and then independent variables were introduced in Model 2a. Next, the moderating effects were examined in Model 3 by integrating independent variables, moderators, and their interactions. The main effects ($H1-H4$) were evaluated in Model 2a. The moderating effects ($H5-H8$) were then evaluated in Models 3a-3d. We conducted bootstrap analysis, and the bootstrap sample size was set to 247, which was equal to the sample size. Table VI shows the standardized path coefficients, explained construct variances (R^2), incremental changes in R^2 , and effect sizes between each model.

The results indicated that all control variables have no significant effect on the intention to share m-coupons. Model 2a in Table VI shows that two intrinsic motivations (i.e. sense of self-worth and socializing) and two extrinsic motivations

	CPro	ER	InS	ReC	SO	SSW	Mobile coupon sharing in social network sites
CPro1	0.70	0.44	0.43	0.42	0.30	0.37	<hr/> 111 <hr/> <p style="text-align: right;">Table IV. Item to construct loadings</p>
CPro2	0.76	0.31	0.56	0.30	0.34	0.37	
CPro3	0.75	0.39	0.43	0.33	0.29	0.29	
CPro4	0.75	0.38	0.39	0.26	0.30	0.19	
CPro5	0.74	0.37	0.42	0.35	0.32	0.27	
ER1	0.40	0.92	0.47	0.50	0.43	0.38	
ER2	0.52	0.93	0.49	0.52	0.40	0.35	
InS1	0.53	0.46	0.89	0.54	0.49	0.56	
InS2	0.48	0.41	0.86	0.49	0.42	0.44	
InS3	0.58	0.49	0.85	0.55	0.46	0.44	
ReC1	0.43	0.49	0.54	0.80	0.46	0.43	
ReC2	0.39	0.42	0.52	0.88	0.48	0.36	
ReC3	0.29	0.47	0.45	0.82	0.33	0.37	
ReC4	0.31	0.40	0.43	0.70	0.37	0.33	
SO1	0.37	0.39	0.48	0.51	0.84	0.46	
SO2	0.34	0.37	0.42	0.38	0.86	0.30	
SO3	0.31	0.34	0.38	0.37	0.75	0.20	
SSW1	0.37	0.35	0.54	0.42	0.35	0.91	
SSW2	0.37	0.34	0.49	0.40	0.33	0.90	
SSW3	0.29	0.32	0.35	0.36	0.35	0.71	

(i.e. economic reward and reciprocity) have positive effects on the intention to share m-coupons in SNSs. Thus, *H1-H4* are supported. Models 3a, 3b, 3c, and 3d tested the interaction effect between coupon proneness and each motivation. The interaction terms with significant and positive coefficients between socializing and coupon proneness ($\beta=0.11$, $p < 0.01$) and between reciprocity and coupon proneness ($\beta=0.09$, $p < 0.01$) demonstrated a significant effect on the intention to share m-coupons. The value of *F* hierarchical likewise indicated that changes in explained variance were significant. Thus, *H6* and *H8* are supported. However, the interaction terms with coefficients between sense of self-worth and coupon proneness ($\beta=0.03$, $t=0.877$ and between economic reward and coupon proneness ($\beta=0.01$, $t=0.311$) indicated an insignificant effect on the intention to share m-coupons. Thus, *H5* and *H7* are not supported. The results of hypothesis testing are summarized in Table VII.

4. Discussions and implications

4.1 Theoretical implications

This study is an attempt to explore the determinants of m-coupon sharing in SNSs. We investigated motivations that promote m-coupon sharing by users in SNSs. We build a model to test the direct effect of the four kinds of motivations, namely, sense of self-worth, socializing, economic reward, and reciprocity. Both intrinsic (i.e. sense of self-worth and socializing) and extrinsic (i.e. economic reward and reciprocity) motivations were proved to have positive effects on the intention to share m-coupons in SNSs, which provides a comprehensive picture of the effectiveness of intrinsic and extrinsic motivations. The moderating effect of coupon proneness was also tested. The effect of socializing and reciprocity on m-coupon sharing is higher for users with high coupon proneness than for those with low coupon proneness. Therefore, the effects of both intrinsic (e.g. socializing)

Table V.
Factor correlation
coefficients and
scale properties

	Mean (SD)	CPro	SSW	SO	ER	ReC	InS	AVE	CR	Cronbach's α
CPro	4.81 (1.02)	(0.74)						0.55	0.86	0.80
SSW	4.89 (1.01)	0.41**	(0.84)					0.71	0.88	0.80
SO	4.63 (0.97)	0.42**	0.40**	(0.82)				0.67	0.86	0.75
ER	5.39 (1.13)	0.50**	0.40**	0.45**	(0.92)			0.85	0.92	0.82
ReC	5.23 (1.88)	0.45**	0.46**	0.52**	0.56**	(0.80)		0.65	0.88	0.82
InS	4.84 (1.04)	0.61**	0.55**	0.53**	0.52**	0.61**	(0.87)	0.75	0.90	0.84

Notes: *, **Significant at $p < 0.05$, $p < 0.01$, respectively, two-tailed t -test was performed

	Model 1	Model 2a	Model 2b	Model 3a	Model 3b	Model 3c	Model 3d
<i>Block 1: Control variables</i>							
Education	-0.13	-0.09	-0.04	-0.04	-0.04	-0.04	-0.04
Gender	0.08	-0.01	-0.05	-0.04	-0.04	-0.06	-0.04
<i>Block 2: Main effects</i>							
Sense of self-worth		0.29**	0.23**	0.24**	0.25**	0.23**	0.24**
Socializing		0.18**	0.14*	0.14**	0.16**	0.14**	0.15**
Economic reward		0.17*	0.07	0.07	0.08	0.08	0.08
Reciprocity		0.29**	0.25**	0.25**	0.24**	0.25**	0.25**
Coupon proneness			0.31**	0.31**	0.30**	0.31**	0.30**
<i>Block 3: Moderation effects</i>							
Sense of self-worth × Coupon proneness				0.03			
Socializing × Coupon proneness					0.11**		
Economic reward × Coupon proneness						0.01	
Reciprocity × Coupon proneness							0.09**
ΔR^2 (intention to share)		0.501	0.061	0.001	0.011	0.000	0.007
F^2 (effect size)		1.050	0.147	0.002	0.027	0.000	0.017
R^2 (intention to share)	0.022	0.523	0.584	0.585	0.595	0.584	0.591
F hierarchical		252.075	35.192	0.578	6.519	0.000	4.108
Notes: *,**Significant at $p < 0.05$, $p < 0.01$, respectively, one-tailed t -test was performed as the direction of differences was hypothesized							

Table VI.
The results of hierarchical regression analysis

Hypothesis	Result
H1: Sense of self-worth → Intention to share m-coupon in SNS	Supported
H2: Socializing → Intention to share m-coupon in SNS	Supported
H3: Economic reward → Intention to share m-coupon in SNS	Supported
H4: Reciprocity → Intention to share m-coupon in SNS	Supported
H5: Sense of self-worth × Coupon proneness → Intention to share m-coupon in SNS	Not supported
H6: Socializing × Coupon proneness → Intention to share m-coupon in SNS	Supported
H7: Economic reward × Coupon proneness → Intention to share m-coupon in SNS	Not supported
H8: Reciprocity × Coupon proneness → Intention to share m-coupon in SNS	Supported

Table VII.
Results of hypothesis testing

and extrinsic (e.g. reciprocity) motivations on the intention to share m-coupons in SNSs are moderated by coupon proneness.

We found that sense of self-worth facilitates users to share m-coupons positively. When users conceive that their friends and relatives in SNSs can benefit from their contribution, such as obtaining a price reduction when shopping, they are willing to share m-coupons. The vital role of sense of self-worth in the viral marketing of m-coupons is consistent with prior research. Bock *et al.* (2005) proved that employees with a high sense of self-worth are more likely to share knowledge with other members. The evaluation of the helpfulness to forward information is essential in the viral marketing environment, where useless product information is unwelcome and the integrity of the sender is suspected when sharing irrelevant information (Michaelidou *et al.*, 2011). Users who are confident with the benefits of forwarding m-coupons share

in SNSs. The socializing is also a salient factor that motivates users to share m-coupons in SNSs. Users are willing to engage in commercial information sharing practices in SNS because they can keep in touch with “friends” by sharing a m-coupon. In m-coupon viral marketing, users interact with others and exchange usage experience. Previous research on eWOM has also revealed that maintaining a strong social tie with other members is an essential consideration in eWOM and information sharing (Hau *et al.*, 2013; Lee and Ma, 2012; Rao *et al.*, 2011). SNS users who keep a close and constant connection with friends share m-coupons merely to connect with others. The economic reward has a positive effect on the intention to share m-coupons. We also found that economic reward is a kind of approval utility that motivates users to share eWOM, consistent with prior work (Hennig-Thurau *et al.*, 2004). The utilitarian benefit is a critical factor in m-coupon viral marketing in SNSs. An economic reward should be provided to increase the intention of SNS users to share m-coupons. Similarly, reciprocity positively affects the intention to share m-coupons. Reciprocity differs from economic rewards in that it is based on the exchange relationship between coupon providers and receivers. Users who believe their contribution will be rewarded in the future will share m-coupons in SNSs, which is consistent with prior research (Bock *et al.*, 2005; Lee *et al.*, 2011). As relation capital in social media, reciprocity relationship can determine the knowledge sharing behavior of users (Chiu *et al.*, 2006).

The moderating effect of coupon proneness on the relationship between sense of self-worth and m-coupon sharing intention was not supported. This result may have two explanations. First, consumers with high coupon proneness seem to enjoy the sense of achievement and excitement from receiving a better deal and saving money (Schindler, 1989). Second, sense of self-worth in the context of virtual community served as a self-motivational force for information sharing regardless of psychological characteristics (Cheung and Lee, 2012). The helpfulness of the forwarded m-coupon must be ensured even for users with low coupon proneness to maintain good images in SNSs. The moderating effect of coupon proneness was significant as regards the relationship between socializing and m-coupon sharing intention. General coupon proneness is greater for consumers who are more price and value conscious (Swaminathan and Bawa, 2005). Moreover, coupon proneness motivates consumers to hold a high evaluation of the social value of m-coupons. The effect of socializing gratifications on m-coupon sharing is stronger for users with high coupon proneness than it is for those with low coupon proneness. Thus, users with high coupon proneness are more likely to communicate and interact with other SNS members by sharing m-coupons. We can see the insignificant interaction effect between economic reward and coupon proneness. Economic rewards are needed to motivate m-coupon sharing regardless whether users possess high coupon proneness. Coupon proneness significantly moderates the relationship between reciprocity and m-coupon sharing intention. Users with high coupon proneness use m-coupons to save money and receive a better deal (Garretson and Burton, 2003). Reciprocity relationship is built upon m-coupon sharing, and users can benefit by receiving m-coupons contributed by friends in the future.

4.2 Managerial implications

Our study investigated the antecedents of m-coupon sharing intention. Thus, the results provide practical implication for m-coupon providers and retailers who want to improve the redemption rate of m-coupon. First, SNSs should identify and reward

members who have provided useful m-coupons to other members and positive feedbacks to enhance sense of self-worth. Moreover, m-coupon providers should not only guarantee the face value of m-coupon but also make the redemption easy to enhance the perceived benefit of forwarding m-coupons. Second, because users who feel they are connected with others by sharing m-coupon contribute m-coupons to “friends” in SNSs. Thus, m-coupon providers should conduct a viral marketing program that encourages the involvement of users and their “friends,” such as a completion game. Third, our result shows a significant relationship between economic reward and m-coupon sharing. Thus, m-coupon providers should offer monetary rewards to impel the contribution of m-coupons in SNSs. Fourth, reciprocity positively affects m-coupon sharing. Thus, SNSs platform should build a fairness culture and maintain a reciprocity relationship among users. Fifth, users with high coupon proneness are more satisfied with being connected with others by sharing m-coupons than those with low coupon proneness. Therefore, m-coupon providers should encourage users with high coupon proneness to initiate a group or forum dedicated to m-coupons. In addition, users with high coupon proneness are more sensitive to reciprocity in sharing m-coupon than those with low coupon proneness. Hence, m-coupon providers should provide them with m-coupons after their contributions.

5. Limitations and directions for future research

This study has certain limitations. First, the online survey adopted a convenience sample, which meant that a respondent may submit more than one questionnaire (Manfreda *et al.*, 2002). To avoid this issue, we checked whether each response had a unique IP address to ensure that all responses were generated by different respondents. Second, other factors might affect m-coupon sharing in SNSs. Possible factors include the personality factors, such as opinion leadership, perceived ease of use, and perceived entertainment. Further exploration on this area is necessary. Third, we do not distinguish the different types of m-coupon in our study. Sciuize *et al.* (2014) suggested that the characteristics of product (e.g. utilitarian and hedonic) moderate the effect of viral marketing mechanism. Thus, future research may focus on the effect of product characteristics on m-coupon sharing intention. Factors that may inhibit m-coupon sharing intention (e.g. privacy concern, cost of time, and laborite) should be investigated further. Finally, many studies have focussed on the behavior of consumers in sharing or using m-coupons, but only a few have investigated from the perspective of merchants. Future research can explore how merchants adopt m-coupons in SNSs.

6. Conclusion

This study is one of the first attempts to integrate intrinsic and extrinsic motivations, coupon proneness, and m-coupon sharing in SNSs. This study has several contributions. First, four intrinsic and extrinsic motivations, namely, sense of self-worth, socializing, economic reward and reciprocity, have positive effects on m-coupon sharing in SNSs, which indicates that m-coupon sharing was affected by both the internal and external factors of users. Second, we find that coupon proneness positively moderates the effect of socializing and reciprocity on m-coupon sharing. Therefore, the effect of motivations on m-coupon sharing differs among users with different coupon proneness.

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