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Receiver responses to referral reward programs in social networks

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Abstract Because online circumstances allows communication remotely and out of synchronization, along with a better communication capacity, online referral reward programs in social networks may have different characteristics compared with traditional referral reward programs. This paper studied the effects of reward allocation, tie strength and brand relationships on receivers' responses in referral reward programs and confirmed the mediating effects of social cost. It investigates the impact of online referral reward programs on receivers' responses from the perspectives of social norms and market norms. We identify the moderating conditions that are expected to affect when and how a reward leads the receiver to infer social norms, thereby increasing the referral's effectiveness. In study 1, because receivers with different tie may have relationships based on market norms or social norms (Wentzel et al. in J Serv Res 17(2):119–133, 2014), we examine the effect of tie strength and reward allocation on receivers' responses in online referral reward programs. Furthermore, we extended the analysis of study 1 in two ways through the introduction of brand relationships and reward characteristics. In study 2, we introduced brand relationships to analyze the effect of tie strength and reward allocation on receivers' responses. In study 3, we studied the effects of reward type

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and tie strength on receivers' responses in online referral reward programs. To capture the underlying process, we also examined the participants' perceptions of social cost in three studies. Finally, we conclude by discussing the theoretical and managerial implications of the findings. People with strong ties tended to accept a referral more often than those with weak ties, because people with strong ties gave their friends' benefits more consideration. However, in strong brand relationships, receivers with strong ties in No Reward conditions tend to respond to referrals more than those with strong ties in the Reward Recommender conditions, because rewarding recommenders makes social norms transfer into market norms. This paper extended the theory on effect of reward on receivers' responses in online referral reward programs and further verified that social cost was a key element of psychological mechanism that caused reward to strengthen receivers' responses under market norms or social norms. This paper researched how social norms and market norms affected consumers' behaviors differently, which helped company design online referral reward programs. This paper researched the relationships between market norms and social norms on receivers' responses in online social network.

Keywords Receivers' responses · Online social networks · Tie strength · Behavioral norms

1 Introduction

As a sociological phenomenon, word of mouth (WOM) is considered an increasingly key marketing tool in propaganda [1–4]. Recently, some campaigns have begun to utilize formal programs where existing customers are incentivized to make recommendations. Incentives to attract new customers include various types of rewards, such as member points, gifts and coupons, which constitute referral reward programs (RRPs) [5]. Companies have realized the importance of RRPs and utilized RRPs in customer relationship management (CRM). A core idea in CRM is that firms need to invest in retaining existing customers, not just finding new ones. Thus, RRPs can be a key CRM tool because of their potential to attract new customers and improve retention by rewarding existing customers [3, 6, 7].

When a WOM recommender receives a reward, recommending becomes a form of RRP. Researchers expect increased use of such programs because of their contribution to customers' lifetime value and firms' profitability [5, 8]. Several papers have looked at reward program design and firm profitability. For example, Biyalogorsky et al. [9] were the first to identify conditions under which RRPs are more profitable than price discounts. Others have studied optimal RRP designs for enhancing a firm's profitability [5, 10, 11]. Schmitt et al. [6] show that customers acquired through RRPs are, on average, 16% more valuable than those acquired through other means. Other works focus on the conditions that make consumers more likely to transmit a rewarded referral and those under which consumers respond positively or negatively to such referrals [11]. As an important link to tie

strength, incentives are particularly important in encouraging WOM to weak social ties (e.g., casual acquaintances) [10] and RRPs may be an effective way of spreading WOM beyond their usual circle of close friends and family [8]. Furthermore, there are several studies on the motivation of WOM recommendations [1] as well as studies of costs [1, 3]. For a referral program to be effective, firms need both a high likelihood of referral on the part of the WOM provider and a high receptivity to a referral on the part of the WOM receiver [8]. Recently, Tuk et al. [12] empirically demonstrated some conditions under which rewarded referrals are more likely to be negatively received, and Verlegh et al. [8] examined whether, how, and under what conditions providing a reward for a referral affects receivers' responses. However, these studies do not consider the effects of online social networks on receivers' responses in online RRPs, especially the effects of rewarded referrals from the perspectives of social norms and market norms.

Online social network services, such as MySpace, Facebook and Wechat, have become increasingly popular and received more attention. In online social networks, users can update their social ties with others at any time and any place. The range of customers' spreading negative reviews has risen sharply from 5 people in the real world [13] to 6000 potential connections in a network environment, because the majority of ties on social network sites are weak whereas the majority of ties in face-to-face are strong [14]. Therefore, tie strength is a key factor in online information propagation [15]. Because they permit remote and out of sync communication, online RRPs may have different characteristics than traditional RRPs. Therefore, customers who experience the two types of RRPs may perceive social cost differently and respond differently. In online social networks, when sharers recommend a product or service to receivers with weak ties in rewarded referrals, receivers will perceive little social cost, which is dominated by market norms [5]. Market norms are based on a utility metric in social exchange and characterized by a monotonic relationship between payment and effort [16]. However, when recommenders share the product or service in rewarded referrals, the receivers with strong ties may perceive more social cost, which is dominated by social norms. In layman's terms, social norms are like an everyday code of conduct that determines how you behave in certain situations [17, 18]. More precisely, social norms are injunctions to act that are 'not outcome-oriented', shared by other members of the group and enforced by sanctions but ultimately sustained by shame as an external rule [18, 19].

The basic distinction between social norms and market norms is based on the norms that govern the giving and receiving of benefits [17]. In different relationships, people follow distinct norms and different affective reactions arise when they give and receive benefits [20, 21]. In market norms, people follow the norms in which benefits are given with the expectation of receiving comparable benefits in return [17]. Giving a benefit without repayment may make someone experience a sense of inequity and distress [22] and decrease liking or other positive affect when an exchange relationship is expected [20, 21]. In general, any behavior violating the norms that a benefit is given in response to the receipt of a benefit would make people feel no good in market norms. In contrast to market norms, social norms indicate that a benefit is given in response to the other's need [20]. In

social norms, such as relationships among families and friends, members are concerned about the needs or welfares of others and care less about the repayments of benefits given [20]. People in social norms feel good when they help the other in the absence of prior aid from the other [20, 21]. Williamson and Clark [21] suggest that people help others sometimes simply because social norms suggest them to do so. In such conditions, the stress that one should help the other may play an important role. In online circumstances, due to the differences between traditional RRPs and online RRPs, tie strength plays a more important role. Online RRPs have a higher level of information communication [14, 23] and online social behaviors are influenced by friends' behavior and tie strength [15, 24]. From the perspectives of behavioral norms, we explain the impact of tie strength, brand relationships and reward types on receiver responses in RRPs, which are factors that influence whether exchanges are perceived as market norms or social norms.

Social identity theory argues that people derive parts of their identity from the categories to which they belong [25]. Although people belong to many categories and have many social identities, cognitions and behaviors should only be affected by a particular identity when that identity is temporarily salient [26]. Salience refers to the extent to which an identity is an activated component of an individual's social self-schema and fluctuates in response to situational cues [27]. Importantly, when an identity is salient, individuals will be more sensitive to identity-relevant stimuli and more likely to engage in behaviors that are consistent with that identity [27]. In RRPs, shares have two different identities: the strength of the receiver's ties with the sharer and brand relationships between the sharer and store [7, 28]. Bettencourt et al. [29] and Morhart et al. [30] conceptualized employee WOM in terms of the brand relationship, arguing that employees may refer their friends when they identify with their firm. Although these studies are insightful, they have not considered the possibility that RRPs may depend not only on the brand relationship but also on the tie strength between shares and receivers [7]. Importantly, the association between tie strength and behavioral norms may help people to infer what kind of norms apply to an exchange. Receivers may be more willing to accept referrals with strong ties if they feel that they are reflective of social norms rather than market norms. Arguably, in strong brand relationships, when rewards are allocated to the recommender with strong ties, referral programs may evoke receiver' perceptions of market norms. Put differently, they may feel that sharers are flouting social norms and undermining their identity as a caring friend when accepting a referral reward [3]. Therefore, this article investigates the impact of online RRPs on receivers' responses from the perspectives of social norms and market norms. Specifically, we argue that a rewarded referral increases the effectiveness in the receiver regarding the norms that led to the recommendation. One ambiguity-resolution outcome is an inference of social norms (as opposed to market norms) as the main driver of the recommendation [16]. Based on this framework, we identify the moderating conditions that are expected to affect when and how the use of a reward leads the receiver to infer social norms, thereby increasing the referral's effectiveness (see Fig. 1). In study 1, because receivers with different ties may have relationships based on market norms or social norms [7], we examined the effect of tie strength and reward allocation on receivers' responses in

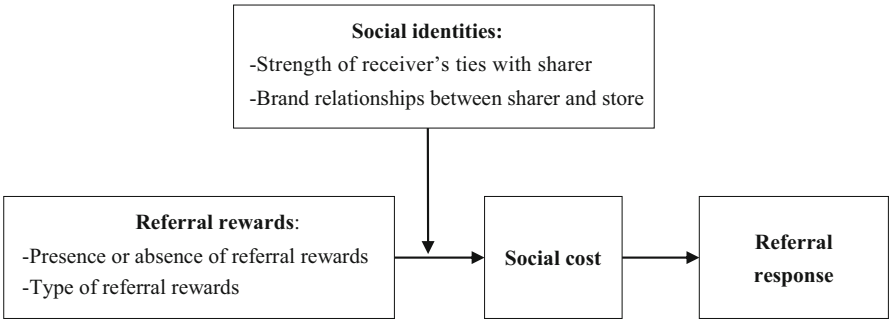

Fig. 1 Conceptual model of receiver responses to rewarded referrals

online RRPs. Furthermore, we extended the analysis of study 1 in two ways: through the introduction of brand relationships and reward characteristics. In study 2, we introduced brand relationship to analyze the impact of tie strength and reward allocation on receivers' responses. Compared with monetary rewards, with social rewards (i.e., gifts to charity or donations to a cause), the market is perceived to be a social norm [16]. In study 3, we studied the effects of reward type and tie strength on receivers' responses in online RRPs. To capture the underlying process, we also examined the participants' perceptions of social cost in three studies. Finally, we conclude the paper by discussing the theoretical and managerial implications of the findings.

2 Theoretical framework

2.1 Reward allocation and tie strength

In online social networks, tie strength is important in determining how social context affects referrals [2, 31]. Tie strength varies from strong primary, such as a spouse or close friends, to weak secondary. Research has shown that WOM between strong ties (e.g., family members and close friends) is more likely and more persuasive than that between weak ties (e.g., casual acquaintances) [2]. These results occur primarily because people regularly share product experiences with strong ties as part of a natural interaction and out of concern for the other's welfare [32]. With strong ties, people typically have communal relationships and social norms; in contrast, with weak ties, people may be more likely to have relationships based on market norms [7]. The mode of distribution in online RRPs is different from that in offline RRPs. First, receivers of RRPs do not communicate with the recommender face to face. Because they may be anonymous, unlike those providing traditional WOM, online information transmitters under less public opinion tend to express true feelings, such as satisfaction and anger [33]. In addition, the sharing of information and its reception are usually out of sync, so if the recommender is rejected, receivers might feel less uncomfortable compared with a traditional program. Furthermore, online RRPs are a one-to-many relationship. Therefore,

when the sharers recommend the products or the service in an online social network, they feel little social pressure. However, receivers with strong ties with the recommender will perceive social pressure, especially in the Reward Recommender conditions. Ryu and Feick [10] used the terms Reward Recommender and Reward Both for these two allocations schemes and in contrast to a Reward Recommender scheme, in a Reward Both scheme both the sender and the receiver benefit from the interaction.

What receivers may infer from a recommendation is of concern to sharers when they are contemplating participating in an RRP. These considerations largely determine the level of social costs. What changes are expected when a reward is offered for a referral? Ahrens et al. [34] conducted a field experiment on online RRPs with receivers and recommenders. There is the potential social risk of negatively affecting a relationship if an economically driven referral does not work out. Similarly, with weak ties, equity theory suggests that a recommender will regard a referral as a favor done for the receiver so that referrals yield inequity [22]. Receivers with weak ties to the sharer make decision based on market norms and tend to be more influenced by external incentives, such as economic motives [10]. However, individuals lack the deep concern for the other person and frequency of contact that characterize strong ties. In addition, less contact between weak ties means fewer opportunities to assess the trustworthiness of the other person. Less knowledge and less concern with weak ties will tend to lead to less favorable responses to the referral [8]. When sharers recommend a product or service, the receivers do not have a strong intrinsic motivation to respond [8]. From our previous discussion, it is clear that ulterior motives are likely to be inferred as a primary driver of a recommendation from weak ties and receivers do not consider the feeling of presenters [34]. Therefore, receivers have little guilt and perceive few social costs, if they do not respond to a referral [35]. When the strength of receivers' ties with the recommender is weak, receivers tend to concentrate on external rewards. Receivers in the Reward Both conditions may have a higher response than those in No Reward conditions and in the Reward Recommender conditions.

With strong ties, receivers' responses are determined voluntarily by consumers who do not perceive being utilized by others because receivers pay little cost to help presenters obtain the reward, such as clicking a link or registering. Relationships between recommenders and receivers conform to communal sharing and social norms, because helping is its own reward and there is no need to expect something in return [32]. If they do not help friends obtain benefits in the rewarding programs (involving in the Reward Both conditions and in the Reward Recommender conditions), receivers will feel pressure or guilt out of fear of being estranged from the referrer [36], informing individuals that they have violated personal or social standards, and motivate reparative action [37]. Furthermore, tie strength affects receivers' altruistic and mutual-help behaviors [38]. Finally, in social norm relationships, effort is shaped by altruism, the amount of compensation is irrelevant, and individuals work as hard as they can regardless of payment [39]. Altruism results in a level of performance that is high, constant, and insensitive to payment level [16]. In the rewarding programs, if receivers respond to a referral, RRPs can bring benefits to the sharer and reduce social pressure of receivers. In contrast, in No

Reward conditions, because recommenders just share the products and do not gain any benefits, receivers with strong tie with recommender will perceive little social cost. Compared with in the rewarding programs, receivers are less willing to respond in No Reward conditions. With strong tie strength, receivers' response in the rewarding programs may be higher than those in No Reward conditions.

In summary, we expect the social costs associated with Reward Recommender and Reward Both to be greater when the tie strength is strong than when it is weak. We propose the following hypotheses:

H1: In online RRPs, with strong ties, receivers' responses in rewarding programs will outweigh responses in No Reward conditions.

H2: In online RRPs, with weak ties, receivers' responses in the Reward Both conditions will outweigh responses in the Reward Recommender conditions or in No Reward conditions.

H3: Receivers' social cost mediates the interactive effect of tie strength and reward allocation on receiver responses.

2.2 Tie strength and brand relationships

Existing research has focused on consumer-to-consumer referrals and has not considered another group that may also make referrals, namely, a firm's stakeholders (e.g., employees or friends of the store) [7], who are members of social networks that transcend the firm and that may be leveraged to recruit customers. This paper utilizes brand relationships as the relationships between recommenders and firms. Current academic studies agree that the definition of brand relationships was created by Blackston [40]. Brand relationship means the consumers' attitudes toward a brand and the interactions between consumers' attitudes and the brand, in which consumers and the brand are viewed as the same and interact with each other. If a brand or product in online RRPs belongs to or is related to sharers closely, there are strong brand relationships between recommenders and the product (or brand). In the opposite case, there are weak brand relationships [41].

In strong brand relationship conditions, since the recommender has nothing to gain economically from the recommendation, an unrewarded recommendation with strong ties is likely to be interpreted as being driven by genuine, intrinsic motives originating from product experience or knowledge [8]. As a consequence, the recommender and his recommendation usually will be perceived as communal sharing and social norms [42]. Then, receivers will respond to recommenders as an altruistic behavior [43, 44]. In strong brand relationship conditions, receivers will consider that rewarded sharers may introduce a 'sales' aspect into an intrinsically motivated friendship, which may upset their social relationships [3, 8, 45]. People feel that friendships should be formed for their own sake and not for extrinsic benefits that may accrue from the relationship [10]. As a result, they are often reluctant to engage in commercial exchange with their friends. That is, because friendships encourage a lack of instrumentality and because commercial exchange

usually encourages at least some instrumental considerations, friendship and business create expectations that are likely to conflict [45]. Furthermore, receivers consider that the referrer is making the referral solely on the basis of potential personal gain and that the referring consumer is taking advantage of the receiver [8]. Therefore, in strong brand relationship conditions, when a reward is not involved in the compensation scheme, a social norm is invoked, according to which effort is shaped by altruism. In other words, rewards prime people for business transactions rather than social relationships such that they demonstrate less cooperative, communal, and altruistic behavior [46].

In strong brand relationship conditions, people with weak ties may comply with the relationships based on market norms [7], and receiver responses in the Reward Recommender conditions and in No Reward conditions are similar. In weak brand relationships, the effects of reward allocation and tie strength on the receiver responses are almost the same as the scenario of H1 and H2; therefore, the related literature is similar to that described in Sect. 2.1. Based on the above, this paper proposes the following hypothesis:

H4: In weak brand relationship conditions, receivers with strong ties have higher responses in the Reward Recommender conditions than those in No Reward conditions, whereas receivers with weak ties respond to a referral similarly in the Reward Recommender conditions and in No Reward conditions.

H5: In strong brand relationship conditions, receivers with strong ties have higher responses in No Reward conditions than in the Reward Recommender conditions, whereas receivers with weak ties respond to a referral similarly in the Reward Recommender conditions and in No Reward conditions.

2.3 Tie strength and reward type

In recent years, social norms have gained much attention from economists as an important driving force or motivational mechanism for individual behavior. There have been a vast number of studies on interactions between economic incentives and intrinsic motivation [47]. Many economists have noted the shortcomings of the Walrasian paradigm for its very limited account of social interactions and have endeavored to integrate new considerations to answer critics and solve research puzzles. Bowles and Gintis [48] provide an illustrative outline of some salient facts of social interaction, particularly social interactions involving non-contractual interactions, not only in non-market transactions but also in highly competitive markets. Such non-contractual interactions are ubiquitous in neighborhoods and families as well as in relation to workplaces. Research in behavioral economics has shown that introducing monetary rewards into a social exchange (such as the exchange of friendly advice about a good product) changes the underlying social contract, increasing the likelihood that participants will interact in ways resembling sales or marketplace interactions [16].

Firms could use nonmonetary rewards for referrals. Such include gifts to charity or donations to a cause (hereafter social rewards) and do not involve personal

financial gain for the recommender [8]. Instead, these rewards generate psychological or social benefits. Since these rewards less explicitly link the referral to personal gain for the recommender, we expect that receivers will be more likely to infer social norms than with monetary rewards and thus will be more likely to increase the favorability of referral responses. Compared with the monetary rewards, social rewards can strengthen the degree of social norms [16]. To improve their self-perception, receivers influenced by social norms tend to engage in online RRPs. This response arises more obviously in strong ties than in weak ties and we also expect that this effect of reward type is more likely to operate in the case of strong-tie referrals than weak-tie referrals.

Therefore, this paper proposes following hypothesis:

H6: In online RRPs, with strong ties, rewarded referrals using social (vs. market) rewards are more likely to increase the responses to the referral.

H7: In online RRPs, with weak ties, there is no significant difference in receivers' responses between social rewards and market rewards.

3 Experiment design and research methods

3.1 Scenario control

WeChat is a mobile text and voice messaging communication service developed by Tencent in China, and it is currently the largest stand-alone messaging app by monthly active users. This application provides text messaging, hold-to-talk voice messaging, broadcast (one-to-many) messages, the sharing of photographs and videos, and location sharing. In particular, in Moments, an application module, users can see their friends' photographs, videos, and broadcasting messages. Therefore, WeChat's Moments module suits this paper's research aims.

This paper followed the logic of research on the interaction between market norms and social norms. In study 1, we examine the effect of tie strength and reward allocation on receivers' responses in online RRPs. We then extend the analysis of study 1 in two ways through the introduction of brand relationship and reward characteristics. In study 2, we introduce brand relationships to analyze the effect of tie strength and reward allocation on receivers' responses. Study 3 studies the interaction of tie strength and reward type on the receiver response. Study 3 is a 2 (market rewards vs. social rewards) × 2 (tie strength: strong ties vs. weak ties) between-subject factorial experiment.

3.2 Pre-test

3.2.1 Participants and design

Before the formal experiment, because every study in this paper involved tie strength as a variable, tie strength was rated on a 7-point Likert scale from Frenzen

and Davis [49] and Steffes and Burgee [2]. The data from this pre-test were collected by an online information service company. The online information service company distributed and collected questionnaires, and participants filled in the questionnaires remotely.

The pre-test involved 60 participants (58.3% are female, mean age = 30.11) who did not participate in the formal experiment. Tie strength was evaluated by giving one of two scenarios, which are shown in Table 1. After participants read descriptions of tie strength, they were asked to evaluate the tie strength between him/her and people using a 7-point Likert scale, where "1" was extremely weak and "7" was extremely strong.

3.2.2 Results

Tie strength manipulation was successful. The mean of tie strength rating was significantly higher with strong ties (M = 6.4) than with weak ties (M = 2.7) condition (t (58) = 2.46, $p < 0.01$). Therefore, the following experiments adopted the same description of tie strength.

3.3 Study 1: reward allocation and tie strength

3.3.1 Participants and design

To test H1, H2 and H3, Study 1 was a 3 × 2 between-subject factorial design in which we varied reward allocation (No Reward, Reward Recommender, Reward Both) and tie strength (strong ties, weak ties) by simulating a scenario in WeChat. We also collected these data from an online information services company.

A total of 240 participants were randomly assigned to one of six experimental conditions. In the pre-test, all participants were asked whether they used WeChat frequently in the last 3 months. We removed 12 invalid samples whose answers were "no" because these participants could not understand the scenarios well in the following experiments (WeChat). Therefore, there were 228 valid samples (51.75% female. Mean age = 27.54).

Table 1 Description of tie strength in studies 1, 2 and 3

Tie strength	Description of scenario
Strong ties	One of your closest friends with whom you constantly share your life. In Wechat, you constantly talk with him/her privately and comment, click Likes for her/his update in Moments
Weak ties	A casual acquaintance whom you know but seldom communicate with for personal matters in Wechat or Moments, instead, only consulting for business matters

3.3.2 Procedure

We used a mobile phone as the product for the study due to their necessity and universality. Participants were asked questions which asked them to imagine that they were browsing WeChat on the subway or during other leisure time. They read a sale-promotion message in Moments shared by their friends with strong or weak ties, which is manipulated as shown in Table 1. Reward allocation is manipulated as shown in Table 2. To avoid the influence of prior brand expressions, we did not mention the brand of the product, and participants were informed that this product had a good WOM and was sold with a price of RMB 799.

For example, a participant of strong ties and no reward would read the following material: Imagine when you browse WeChat on the subway or during other leisure time, you read a sale-promotion message in Moments shared by your friend. AAA is a common brand with a good word of mouth that is sold at a price of RMB 799. He or she is one of your closest friends with whom you constantly share your life. The message is as follows (Fig. 2).

Participants were asked to anchor their likelihood of responding on a scale between 0% ("certain not to click this message or accept this RRP") and 100% ("certain to click this message and accept this RRP") [49]. To capture the underlying process, social cost associated with the likelihood was also measured using the five-point scale in Table 3 (1 = strongly disagree, 5 = strongly agree). The five-item scale was modified from Ryu and Feick [10].

Table 2 Description of the reward allocation scenario in studies 1 and 2

Reward allocation	Description of scenario
No reward	New AAA mobile phone is coming ~ Better than you imagined!
Reward recommender	New AAA mobile phone is coming ~ Clicking this message helps me get a coupon (RMB 30) ~
Reward both	New AAA mobile phone is coming ~ Click this message! Both you and I will gain a coupon (RMB 15) ~

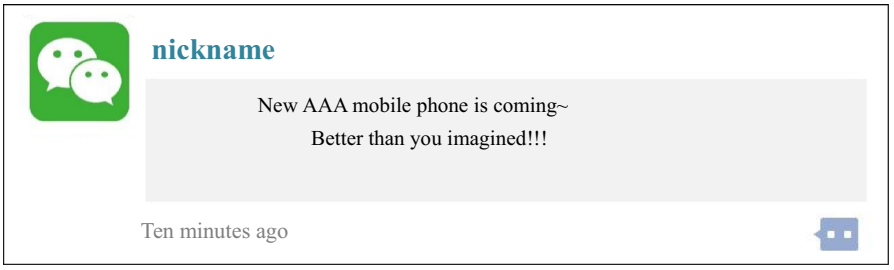

Fig. 2 An example in study 1

Table 3 Measurement of social cost in studies 1, 2 and 3

1. If you do not respond to the recommendation, you will become more estranged from the referrer
2. If you respond to the recommendation, you will think that you are willing to help the referrer
3. If you do not respond to the recommendation, you will feel guilt towards the referrer
4. If you respond to the recommendation, you will feel the referrer has taken advantaged of you (reverse coded)
5. If you respond to the recommendation, you will think you spend less time and energy

3.3.3 Results and discussion

The tie strength manipulation [strong tie (M = 5.9), weak tie (M = 2.8) condition (F (1, 222) = 20.12, $p < 0.01$)], which was the same as that in 3.2 pre-test, was successful. The measurements of social cost showed acceptable reliability ($\alpha = .90$) and were utilized as a composite index for further analysis.

We analyzed the likelihood of responses with an analysis of variance (ANOVA). Two main effects for experimental variables were significant. Consumers with strong ties had a higher response likelihood (M = 59.86%) than those with weak ties (M = 45.12%, F (1, 222) = 32.96, $p < 0.01$). In reward allocation, receivers had a higher response likelihood (M = 60.86) in the Reward Both conditions than those in the Rewarding Recommender conditions (M = 52.31, F (1, 222) = 8.39, $p < 0.01$), and receivers in the Reward Recommender conditions had a higher response likelihood than did in the No Reward conditions (M = 44.29, F (1, 222) = 4.84, $p < 0.05$).

An ANOVA showed an interaction effect between reward allocation and tie strength (F (2, 222) = 24.92, $p < 0.01$) (Fig. 3). With strong ties, there was no significant difference in the response likelihood between Reward Both (M = 65.9%) and Reward Recommender (M = 63.82%, F < 1). However, the response likelihood (M = 49.82%) in No Reward conditions were significantly lower than that in the Reward Recommender conditions (F (1, 222) = 10.34, $p < 0.01$), which supported H1. With weak ties, there was no significant difference

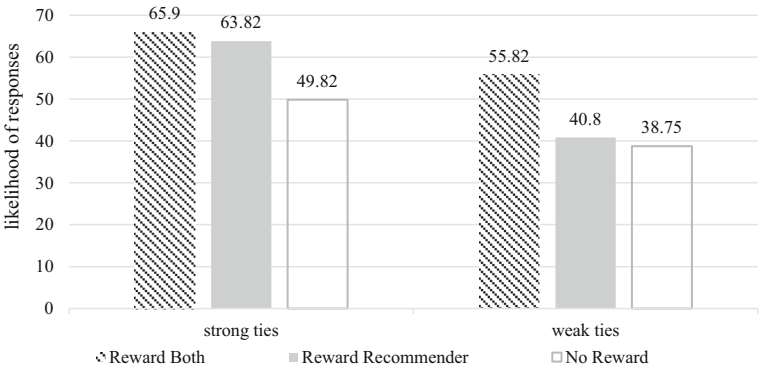

Fig. 3 Study 1 results

in the response likelihood between No Reward conditions (M = 38.75%) and Reward Recommender conditions (M = 40.8%, F < 1), but the response likelihood in No Reward conditions was significantly lower than that in Reward Both conditions (M = 55.82%; F (1, 222) = 12.15, $p < 0.01$), which supported H2.

To test whether the interactive effects between tie strength and reward allocation were mediated by social cost, we performed a mediated moderation analysis using the bootstrapping procedure described in Zhao et al. [50] and Preacher et al. ([51], Model 8, 5000 bootstrap samples). The results indicated that social cost was predicted by the reward allocation × tie strength interaction in the mediator model (B = 0.84, t (222) = 2.68, $p < 0.01$). In the dependent variable model, social cost predicted the response likelihood (B = 8.26, t (222) = 7.57, $p < 0.01$), whereas the reward allocation × tie strength interaction was no longer significance (B = − 0.23, t (222) = 1.34, $p > 0.1$). Furthermore, the indirect effect of the reward allocation × tie strength interaction with social cost was significant (95%, B = 6.94, CI 1.65–12.36), indicating successful mediation through this path.

Reward Both had the highest proportion of receiver responses, followed by Reward Recommender and No Reward, suggesting that reward allocation had an obvious positive effect on likelihood of receivers' responses. With strong ties, receivers' response likelihood in the Reward Both conditions or in the Reward Recommender conditions was higher than those in No Reward conditions. However, with weak ties, because relationships between recommenders and receivers were under market norms, receivers' response in Reward Both conditions was higher than those in No Reward conditions and those in Reward Recommender conditions. Strong ties increased receivers' responses because people with strong ties tend to consider the recommenders' benefit, which attributed to increasing the social cost. Receivers with weak ties tend to pay more attention their own interests, Therefore, people with weak ties had lower response likelihood. An investigation into the mechanism underlying demonstrated that social cost mediated the interactions of tie strength and reward allocation on receivers' responses, which supported H3.

Study 1 analyzed the effects of tie strength and reward allocation on receivers' responses, which supported our hypotheses preliminarily. The following study analyzed the effects of tie strength and reward allocation on receivers' responses when brand relationships between recommenders and products are strong or weak.

3.4 Study 2: tie strength and brand relationships

3.4.1 Participants and design

In this study, we tested H4 and H5 by simulating a scenario in WeChat. Study 2 was a 2 × 2 × 2 between-subject factorial experiment in which we varied the reward allocation (No Reward, Reward Recommender), tie strength (strong ties, weak ties) and brand relationships (strong brand relationships, weak brand relationships). Because rewards had an obvious main effect in study 1, this study simplified reward allocation. To confirm and generalize the results of study 1, we conducted this study in a real scenario by asking participants to read materials in a classroom.

The participants were full-time postgraduates from the Beijing University of Posts and Telecommunications. A total of 330 participants were randomly assigned to one of eight experimental conditions. Using a pre-test asking whether participants used WeChat frequently in the last 3 months and whether participants were acquainted with an online store, we removed 16 invalid samples, yielding 314 valid samples (65.14% were female, mean age = 24.51).

3.4.2 Procedure

We used an online food store, an online cosmetics store, and an online department store as the products for the study due to their universality. These stores were distributed randomly in 314 questionnaires. The scenario, reward allocation and tie strength manipulation were the same as those in study 1. Then, we manipulated brand relationships by adding the following description: For strong brand relationships, participants were informed that the sharer was a stakeholder of the online store. For weak brand relationships, participants were informed that sharer was merely a consumer of the store. To verify that brand relationships were manipulated successfully, we measured the brand relationships using a seven-point scale ("1" = weak: I could hardly feel a connection between this store and recommender, "7" = strong: I could feel a strong connection between the store and recommender). We coded the customers who accepted a recommendation as 1 and those who did not as 0. Finally, the description and measurement of social cost are shown in Table 3.

3.4.3 Results and discussion

There was successful tie strength manipulation before the formal experience [strong tie (M = 6.1), weak tie (M = 2.9) condition (F (1, 306) = 8.67, $p < 0.01$)]. The mean brand relationship rating was significantly higher in the strong brand relationship conditions (M = 5.92) than in the weak brand relationship conditions (M = 2.65) condition (F (1, 306) = 5.47, $p < 0.05$), suggesting that the manipulation of brand strength was successful.

In our logistic regression model, reward allocation, brand relationships, tie strength, and all of their interaction terms were studied as predictors. The analysis yielded main effects for brand relationship (B = 3.24, χ^2 (1, 314) = 15.76, $p < 0.01$) and tie strength (B = 1.21, χ^2 (1, 314) = 23.13, $p < 0.01$), a brand relationships × reward allocation interaction (B = − 0.86, χ^2 (1, 314) = 7.35, $p < 0.01$), a brand relationships × tie strength interaction (B = 2.28, χ^2 (1, 314) = 4.55, $p < 0.05$) and a three-way interaction (B = − 0.93., χ^2 (1, 314) = 10.28, $p < 0.01$) (Fig. 4).

In a strong brand relationship, the analysis showed a main effect of tie strength (B = 1.65, χ^2 (1, 158) = 18.46, $p < 0.01$) and a reward allocation × tie strength interaction (B = 0.73, χ^2 (1, 158) = 5.54, $p < 0.05$). Participants with a strong tie who were in the Reward Recommender conditions were less likely to response to referrals (52.3%) than those who were in No Reward conditions (69.2%, χ^2 (1, 158) = 3.93, $p < 0.05$). However, there was no significant difference between

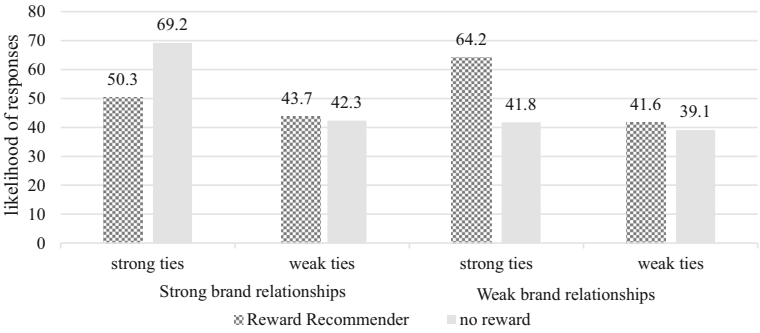

Fig. 4 Study 2 results

participants with weak tie in the Reward Recommender conditions (43.7%) and in No Reward conditions (42.3%, χ^2 (1, 158) = 2.17, ns), which supported H5. For weak brand relationships, the analysis showed a main effect of tie strength (B = 1.18, χ^2 (1, 156) = 10.57, $p < 0.01$) and a reward allocation × tie strength interaction (B = 0.63, χ^2 (1, 156) = 7.11, $p < 0.01$), participants with strong tie tend to respond to recommendations more in the Reward Recommender conditions (64.2%) than that in No Reward conditions (41.8%, χ^2 (1, 156) = 4.27, $p < 0.05$). However, participants with weak tie received referrals similarly in the Reward Recommender conditions (41.6%) and in No Reward conditions (39.1%, χ^2 (1, 156) = 1.23, ns), which supported H4.

An ANOVA on social cost yielded a significant main effect of tie strength (F (1, 306) = 6.34, $p < 0.05$), a main effect of reward allocation (F (1, 306) = 18.45., $p < 0.01$), a tie strength × reward allocation interaction (F (1, 306) = 26.89, $p < 0.01$), and, more importantly, a three-way interaction (F (1, 306) = 5.72, $p < 0.05$).

We further tested the mediating role of social cost using a bootstrapping procedure (5000 bootstrap samples). In the mediator model, social cost was predicted by the brand strength × reward allocation × tie strength three-way interaction (B = − 1.47, t = − 2.28, $p < 0.05$). In the dependent-variable model, social cost predicted likelihood (B = 0.45, z = 5.23, $p < 0.01$), whereas the brand strength × tie strength × reward allocation three-way interaction was non-significant (B = − 1.43, z = − 1.31, ns). In the dependent-variable model, the indirect effect through social cost was significant (95%, B = − 0.66, CI − 1.35 to − 0.10), which indicated successful mediation through this path and further supported H3.

In weak brand relationship conditions, study 2 testified the results in study 1 that with strong ties receivers' responses in the Reward Recommender conditions were higher than those in No Reward conditions, but with weak ties there was no significant difference in response likelihood between Reward Recommender conditions and No Reward conditions. In strong brand relationship conditions, with strong ties, response likelihood reversed and receivers' responses in the Reward Recommender conditions were lower than those in No Reward conditions. The reason was that receivers often feel that using market norms in social norms

may produce conflict and may put their identity as a caring friend into question [52]. With weak ties, there were no significant difference in receivers' responses between Reward Recommender conditions and No Reward conditions and brand relationships had no effects on receivers' responses in the Reward Recommender conditions and in No Reward conditions.

Based on the above, tie strength, reward allocation, and brand relationships caused conflicts between social norms and market norms when consumers made decisions influenced by social cost. Furthermore, we will study the effects of tie strength and reward type on receiver responses and analyze the internal mechanism how interaction of tie strength and reward type affects receivers' responses.

3.5 Study 3: tie strength and reward type

3.5.1 Participants and design

In this study, we tested H6 and H7 by simulating a scenario in WeChat. Study 3 was a 2 (market rewards, social rewards) × 2 (strong ties, weak ties) between-subjects factorial experiment.

The participants were students with an Engineering Master from Beijing University of Posts and Telecommunications. A total of 134 participants (45.76% female, mean age = 30.43) were randomly assigned to one of four experimental conditions.

3.5.2 Procedure

The scenario and tie strength manipulation were as the same as in study 1 and 2. Tie strength manipulation was the same as in the 3.2 pre-test. Because the sharer could add a description above the promotion's title, market rewards or social rewards were manipulated by providing different scenarios, as shown in Fig. 5.

Fig. 5 An example in study 3

First, participants were asked to anchor their likelihood on a scale between 0% ("certain not to click this message or accept this RRP") and 100% ("certain to click this message or accept this RRP") [49]. Next, on a five-point scale, modified from Ryu and Feick [10], the participants reported the social cost as shown in Table 3.

3.5.3 Results and discussion

There was successful tie strength manipulation (strong tie($M = 6.4$), weak tie($M = 3.1$) condition ($F\ (1,\ 130) = 11.32,\ p < 0.01$). We analyzed receiver responses with an analysis of variance (ANOVA). Two experimental variables had significant main effects: tie strength ($F\ (1,\ 130) = 43.47,\ p < 0.01$), reward type ($F\ (1,\ 130) = 36.73,\ p < 0.01$) and, more importantly, a reward type × tie strength interaction ($F\ (1,\ 130) = 5.51,\ p < 0.05$) (Fig. 6). Specifically, with weak ties, there was no difference in the response likelihood between those under social rewards ($M = 42.12$) and those under market rewards ($M = 40.23,\ t\ (64) = 1.32,\ p > 0.1$), which supported H7. With the strong ties, receivers' response likelihood under the social rewards ($M = 74.35$) was higher than that under the market rewards ($M = 63.24,\ t\ (66) = 3.74,\ p < 0.01$), which supported H6.

To test whether the interactive effects between tie strength and reward type were mediated by social cost, we performed a mediated moderation analysis using the same bootstrapping procedure used in study 1. The results indicated that social cost was predicted by the tie strength × reward type interaction in the mediator model ($B = 1.26,\ t\ (130) = 5.72,\ p < 0.01$). In the dependent variable model, social cost predicted the likelihood ($B = 0.57,\ t\ (130) = 4.66,\ p < 0.01$), whereas the reward type × tie strength interaction was no longer significant ($B = -0.43,\ t\ (130) = 0.77,\ p > 0.1$). Furthermore, the indirect effect of the tie strength × reward type interaction through social cost was significant (95%, $B = 0.72$, CI 0.14–1.35), indicating successful mediation through this path, which supported H3.

Study 3 confirmed that with strong ties, receivers' responses under social rewards were higher than those in market rewards, but with weak ties, there were no significant differences of receiver responses between social rewards and market rewards. Furthermore, study 3 confirmed that even when recommenders just asked for help and did not recommend a product, receivers' responses with strong ties were higher than those with weak ties. From a new point of view, in social

Fig. 6 Study 3 results

networks, receivers with strong ties tend to be affected by social cost, so they prefer to provide help.

4 General discussion

We used three studies to examine the conflicts between market norms and social norms in receiver responses and analyze the mediating effect of social cost in different situations. In study 1, we analyze mainly the effects of tie strength and reward allocation on receivers' responses. When the tie strength is strong, there is no significant difference in receivers' responses between Reward Both conditions and Reward Recommender conditions, which are higher than receivers' responses in No Reward conditions. When the tie strength is weak, receivers' responses in the Reward Both conditions outweigh receivers' responses in the Reward Recommender conditions or in No Reward conditions, but there is no significant difference in receivers' responses between Reward Recommender conditions and No Reward conditions. Verlegh et al. [8] confirm that with strong ties, disclosure (vs. non-disclosure) of ulterior motives is likely to reduce the favorability of responses to the rewarded referral; in contrast, disclosure with weak ties will have little impact on referrals, because when a strong tie discloses a financial motive, the disclosure highlights the importance of the financial incentive as a driver of the recommendation. The reasons for the differences between our research and that of Verlegh et al. [8]' are as follows: (1) Due to one-to-many relationships in online social network, whether receivers are willing to help recommenders to gain reward depends on initiative and is voluntary. With strong ties, receivers and recommenders are in the frame of social norms, so receivers tend to help recommenders [36]. (2) With weak ties, receivers and recommenders are in market norms, so our conclusions are consistent with existing results [8, 12, 53]. Compared with unrewarded referrals, rewarding referrals evoke less favorable responses to the referral [54], which is contrary to our results. The reason is that receivers of strong ties tend to help recommenders avoid feeling guilty in online social networks. A common theoretical basis between our research and others [8, 12, 53] is that receivers' responses under social norms will increase with strengthening factors (such as tie strength) of social norms, but receivers' responses under market norms will increase with strengthening factors of market norms.

Based on study 1, we added brand relationships as a new factor reflecting the relationships between the recommenders and the store in study 2. We verified that in weak brand relationship conditions, receivers' responses with strong ties in the Reward Recommender conditions outweighed those in No Reward conditions; however, with weak ties, there were no significant differences between Reward Recommender conditions and No Reward conditions. In strong brand relationship conditions, receivers with strong ties have higher responses in No Reward conditions than those in the Reward Recommender conditions, but consumers with weak ties respond similarly in the Reward Recommender conditions and in No Reward conditions. Furthermore, people with weak ties tend to be influenced by market norms, such as rewards. However, given strong ties and strong brand

relationships, Reward Recommender' behavioral norms were transferred from social norms to market norms, which made a reversion to receivers' responses, but unrewarded recommendations manifested social norms. For weak brand relationships, the conclusions are as the same as previous discussions. In strong brand relationship conditions, Wentzel et al. [7] find that rewarding employees may backfire in the context of employees' referrals. In turn, employees may find referrals of friends more acceptable if they feel that they are reflective of social norms rather than market norms. These authors confirm that when referrals are framed in social norms, employees will report a greater referral likelihood than when referrals are framed in terms of market norms, but there are no differences across different levels of identity salience. Although the above discussions are different from ours, a common theoretical basis is that receivers with strong ties under communal sharing or social norms tend to accept the recommendation and receivers with weak ties under market norms have lower responses. Our conclusions indicate that in strong brand relationship conditions, Reward Recommender with strong ties transferred social norms into market norms so receivers' responses were lower than those in No Reward conditions.

Study 3 confirmed that there were interactions between reward type and tie strength on receivers' response, and social cost was also a mediator. People with strong ties under social rewards had higher responses than those under market rewards. Conversely, people with weak ties had similar responses under market rewards or under social rewards. Furthermore, in the three studies, receivers' social cost mediated the effects of reward allocation and tie strength on responses. However, Verlegh et al. [8] demonstrate that rewarded referrals using social (vs. monetary) rewards are less likely to reduce the favorability of responses to the referral and this effect is stronger when the referral is made by a weak (vs. strong) tie. Those authors considered that compared with market rewards, social rewards contribute to helping increase receivers' response, which supports our conclusion. However, due to characteristics in online social networks, we find that with strong ties, receivers' responses under social rewards outweigh those under market rewards.

5 Contributions

5.1 Theoretical contributions

This study makes several contributions to the literature on RRPs and the psychological consequences of behavioral norms. At the most basic level, this paper extends the theory on the effect of rewards on receivers' responses in online RRPs, where receivers are incentivized to respond to promotions from their friends or acquaintances. Although rewards create confusion to referral responses, previous studies have focused on incentivizing recommenders to perform actions that have consequences for only themselves or a psychologically distant group of people (i.e., blood donations) [16]. This paper demonstrates that the favorable effects of rewards also exist in the marketing context. We further verify that social costs play a key

role in the psychological mechanism that causes rewards to strengthen receivers' responses under social norms. In a broader sense, this research also advances theories on incentives in labor economics as well as theories on the psychological consequences of rewards [16, 46].

In sum, online RRPs heighten the transformation between social norms and market norms. First, in online RRPs, we testify that with strong ties, rewarding referrals affect receivers' responses positively, which is not in accordance with existing research [8, 12, 53]. We find that in online social networks, rewarding referrals with strong ties make social norms transfer into market norms. Then, in strong brand relationship conditions, receivers' responses with strong ties are lower in Reward Recommender conditions than those in No Reward conditions, because strong brand relationships make the behavioral norms with strong ties transfer from social norms to market norms. Finally, with strong ties, a social reward frame can strengthen receivers' responses, but with weak ties, the effects of reward on receivers' response are similar under market rewards or under social rewards. Previous research has speculated about the potential responses that might be generated by rewarding referrals [10, 12, 53]. To our knowledge, our study is the first systematic investigation of receivers' responses in online social networks. Our research provides important insights about when and how rewarding referrals can be expected to result in favorable receiver responses and suggests a framework that can be used to preliminarily predict responses to rewarding referral in online social networks.

5.2 Managerial implications

The results of this research also have important managerial implications. We have identified the conditions under which rewarding referrals affect consumers' responses in online social networks and offered multiple actionable suggestions that can help limit or overcome these unfavorable responses.

In online social networks, companies should make market promotions according to the effects of reward allocation, tie strength and brand relationships through the application of RRPs. First, according to the conclusions in study 1, rewarding recommender behaviors are in the framework of social norms with strong ties but in the framework of market norms with weak ties. Therefore, when firms design RRPs, they should consider the tie strength between recommenders and receivers. Because of one-to-many relationships in online social networks, when tie strength is difficult to distinguish, firms should mainly consider rewarding recommenders, the cost of which is lower than that that of rewarding both recommenders and receivers. When consumers recommend information, due to a higher social cost, receivers' responses of strong ties outweigh those of weak ties. Then, according to results of study 2, when receivers with strong ties are in strong brand relationships, rewarding recommendations are viewed as market norms so receivers' responses are lower. Therefore, when companies design and optimize RRPs, brand relationships are a main factor, especially with strong ties. In strong brand relationship conditions, when receivers' ties with recommenders are strong, companies should hide rewarding information so receivers will feel recommendations based on

recommenders' experiences and concern for others [7], which maintains the frame of social norms. Offering a reward in an RRP could not only encourage the efficiency of the program but also generate positive impressions regarding the firm's motives where social norms dominate. Therefore, firms can design programs by making customers perceive more social costs in social norms to optimize online RRPs. As demonstrated in study 3, Keeping the details of the external incentives, that social rewards dominate market rewards may also be a plausible solution. Alternatively, designing a program to increase social costs associated with rewards can also help firms attract customers and increase receivers' responses.

5.3 Future directions

Despite the implications of our findings, we realize that the present research also has certain limitations that may provide a broad area for future research. This paper concentrated on the effects of reward allocation, tie strength, and brand relationships on social cost and receivers' responses but did not accurately study mechanism how social norms or market norms work in decision making. Furthermore, regarding social norms and market norms, we limited our attention to reward allocation, tie strength, and brand relationships and did not consider the frequency of recommendation. With strong ties in social networks, does higher frequency harm social norms and does it make market norms more effectively? In reality, social and market factors are involved in a wide range, especially in online circumstances. Therefore, a deeper examination of the impacts of various factors within the scope of social and market norms on acceptance success could constitute an interesting avenue for future research.

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