The effects of value co-creation practices on building harmonious brand community and achieving brand loyalty on social media in China

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ABSTRACT

Social media activities generated by consumers in brand communities are claimed to have a potentially game-changing impact on interaction among brand entities and brand building. In this article, we explore whether value co-creation practices in brand community have positive effects on the consumer-brand and consumer-other consumers’ relationships, as well as, community commitment and brand loyalty. A survey based empirical study with 286 respondents was conducted. The results of structural equation modeling show that four value co-creation practices positively influence consumer-other consumers’ relationships and only two of the four positively influence consumer-brand relationships. The consumer-brand-consumer triad relationships could significantly enhance brand loyalty directly, as well as indirectly through community commitment. Finally, theoretical and managerial implications are discussed.

1. Introduction

For researchers and marketers, through the relationship marketing or building consumer relationships, to improve consumer loyalty has been an important issue (Berry, 1995; Payne & Frow, 2005). A brand community is “a specialized, non-geographically bound community, based on a structured set of social relationships among admirers of a brand” (Muniz & O’Guinn, 2001), which provides a new, important and effective means for establishing the deep and long term bonds between consumers and brands (Thompson & Sinha, 2008). In brand communities these consumer-centric, relational and co-creative practices are increasingly paraded as backbone of good ties between consumers and the elements of community (McAlexander, Schouten, & Koenig, 2002). Marketing scholars invest considerable effort to understand the various practices’ roles in the nurture process of harmonious relationships within brand community (Muniz & O’Guinn, 2001; Nuttavuthisit, 2010; Schouten, McAlexander, & Koenig, 2007).

The rapidly growing popularity of social networking technologies has provided brand community with a new platform and opportunity to retain existing customer and attract new one (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). Due to the characteristics of brand community based on social media, such as no time constraint, non-geographically bound, high information transparency, and multi-party communication, it has become an important platform for placing a variety of value co-creation practices, where consumers can easily share consumption experiences and interact with each other (Muniz & Schau, 2005), and brand managers can “listen to” and interact with their consumers (Kaplan & Haenlein, 2010). Schau, Muñiz, and Arnould (2009) systematically organized four thematic categories: social networking, community engagement, impression management, and brand use to represent a constellation of practices coalesce to create value-added brand community experiences, such as sharing information, perpetuating the history and culture of the brand, and providing assistance. Although many researches point out that these common practices had an important influence on fostering loyal consumers (Leigh, Peters, & Shelton, 2006; McAlexander et al., 2002; Muniz & O’Guinn, 2001; Muniz & Schau, 2005), there are few literatures interpret the specific role process from the empirical perspective.

In response, taking the perspective of building solid relationships in brand community, this paper pursues an empirical investigation to show how value co-creation practices influence the consumer-brand-consumer triad relationships in brand community, and brand loyalty. Furthermore, we study how the effects of brand community translate to brand loyalty. In doing so, we believe that community commitment has a key role, which has been neglected in previous studies.

The remainder of this article is organized as follows. We begin with a brief review of the theoretical background of important
concepts such as brand community and value co-creation practices. Then we develop our hypotheses which relate to our conceptual model of how value co-creation practices can influence the construction of harmonious brand community, community commitment, and brand loyalty. Finally, we report the results of our study. We conclude with a discussion of our findings, limitations of our research and avenues for future research.

2. Literature review

Brand community is essentially “a group of consumers with a shared enthusiasm for a certain brand and a well-developed social identity, with members who engage jointly in the group action to achieve the collective goals and/or express mutual feelings and commitment” (Bagozzi & Dholakia, 2006). In brand communities, consumers are usually self-motivated and enthusiastic in exchanging, sharing and debating ideas, and contribute to the improvement of products and services, which play an important role in developing consumer-brand loyalty via relational marketing (Anderson & Weitz, 1992). The social relationships built within a brand community can create consumer exit barriers and maintain the longevity of consumer loyalty (Alesheimer, Dholakia, & Herrmann, 2005; McAlexander et al., 2002).

As a second generation of web development and design features, social media websites facilitate communication, information sharing, and collaboration among people (Paris, Lee, & Seery, 2010). The combination of both brand community and social media brings out the brand community based on social media, whose distinctive platform for hundreds of thousands of consumers who share common interests about brands is the main differentiator compared with the traditional brand community. With the aid of social media, brand communities provide available venues where marketers can obtain insight into consumers' needs, and where the relationship between brand and consumers is established at negligible costs (Kim, Sung, & Kang, 2014; McWilliam, 2012; Webb, Ireland, Hitt, Kistruck, & Tihanji, 2011). Compared to traditional community, brand communities based on social media have both lower entrance and exit barriers. It is relatively easy for people to become a member of community due to the less strict requirements. The advanced communication technology led people to approach and evaluate brands without any time and geographical constraints. Instead, they can easily discard unwanted alternatives. So, there may be a need for more and better efforts in bringing people to the brand community based on social media and retain them as loyal consumers.

Numerous studies have pointed out that value co-creation practices strengthen the interaction among members of a brand community, which helps bring members closer together and increase member affective connection to the brand, and become crucial in their brand choice (Carlson, Suter, & Brown, 2008; Lemon, Rust, & Zeithaml, 2001; Zaglia, 2013). A new stream in the marketing literature indicates customers need no longer be mere passive recipients of value propositions offered by firms but co-creators of value, product innovation and competitive strategy (Payne, Storbacka, Frow, & Knox, 2005; Prahalad & Ramaswamy, 2004). The new understandings emphasize that the firm does not create and deliver value to the passive consumers, but through interaction and dialogue embeds value into the co-creation process between the firm and active consumers. The move the focus of marketing to a process of co-creating value through a series practices of exchange and interaction with consumers (See-To & Ho, 2014), that is developing a service orientation based on processes of collective value creation (Vargo & Lusch, 2004). Seeking opportunity and gaining a competitive advantage in the new environment, many businesses are responding by engaging their consumers to actively involve into the process of joint value creation.

Due to brand community based on social media platforms, the growth of Internet-based interest groups, and widespread high-bandwidth communication and social interaction technologies, the firms and consumers are now informed, connected, networked, and empowered on a scale as never before. Through this medium, consumers’ activities regarding innovation and interactions within a community become more efficient and effective (Lee, Kim, & Kim, 2012; Lee, Xiong, & Hu, 2012). Social media based on information technology enables the combination of competences, capabilities and knowledge that underpin value co-creation in dynamic relationships with their partners (Srivastava & Gnyawali, 2011). Specially, it introduces unprecedented direct-to-consumer processes and creates new distribution channels, which increasingly affect the brand promotion and bridging the gap between the firm and consumer, and among consumers (Hyde, 2008; Pan & Li, 2011). Despite the emerging role of social media, little is known about how value co-creation practices in brand community based on social media enables the construction of harmonious brand community. Next, we explore the effects of value co-creation practices happen within the brand communities on the relationship between consumers, brand, and other consumers, and depict how these relationships can enhance community commitment and brand loyalty.

3. Development of the model and the hypotheses

3.1. Effects of value co-creation practices on consumer-brand and consumer-other consumers' relationships

The process of collective value creation in brand community is mainly driven by a set of practices: social networking, community engagement, impression management and brand use. These practices include a variety of specific activities, such as welcoming, empathizing, milestoneing, documenting, evangelizing, justifying, customizing, commoditizing and so on (Schau et al., 2009). Through these practices in brand communities, members obtain the continuous interaction and in-depth understanding of brand, which facilitates the formation of a triad consisting of consumers, brand and other consumers (Muniz & O’Guinn, 2001). Social capital theory indicates that frequent interpersonal interactions would be propitious to establish and strengthen the social networks and trustworthy relationships, and enhance the togetherness of brand communities (Chang & Chung, 2011; Lee, Kim, & Kim, 2012; Lee, Xiong, & Hu, 2012); thus promoting the identification with the brand (Alesheimer et al., 2005). For instance, Muniz and Schau’s (2005) study of the Apple Newton brand community found that even six years after Apple Computer Inc. had officially discontinued the Newton product, users still relied on themselves, as well as the larger community, to keep their Newtons operating and advocate the products’ use to outsiders. During observing a jeep brand community, McAlexander et al. (2002) reported that participants shared their driving experiences in the form of ritual storytelling facilitated by a Jeep Brandfest event and skilled jeep drivers helped neophytes make a difficult stream crossing, which result in strengthening ties among all elements of brand community.

With the advent of social media, consumers are more frequently exposed to the brand’s pages, comments, fans and marketers, which facilities communication, information dissemination and the capability of members to be in touch with each other in brand community. So, the platform of social network provides favorable condition to carry out value co-creation practices (i.e., social networking, community engagement, impression management and
brand use) and bring members and other elements of a brand community to a high-context interaction, which strengthens the triangle relationships of consumer-brand-other consumers within brand community (Muniz & O’Guinn, 2001). Therefore based on analysis of above theory, we hypothesize that (Fig. 1):

H1. Social networking practices positively influence (a) consumer-brand relationship, and (b) consumer-other consumers’ relationship.

H2. Community engagement practices positively influence (a) consumer-brand relationship, and (b) consumer-other consumers’ relationship.

H3. Impression management practices positively influence (a) consumer-brand relationship, and (b) consumer-other consumers’ relationship.

H4. Brand use practices positively influence (a) consumer-brand relationship, and (b) consumer-other consumers’ relationship.

3.2. Effects of consumer-brand and consumer-other consumers relationships on community commitment and brand loyalty

In the light of transaction cost theory, special relationship investment cannot be reassigned easily to other relationships; that is, they create a lock-in situation for the consumers (Burnham, Frels, & Mahajan, 2003). The main purposes of building brand community based on social media are to consolidate relationships with the existing consumers’ and get access to potential consumers, where businesses launch various of activities to attract the consumers’ attention and encourage them to actively participate. In the process, consumers are willing to put in time and effort to acquaint with the brand and interact with other consumers and marketers. Therefore, once consumers formed a good relationship with the elements of brand community, they often to better maintain the stability of the relationships. As a core feature of relationship marketing management (Doney & Cannon, 1997), in the context of triangular relationships of brand community (Muniz & O’Guinn, 2001), commitment refers to member’s attitude toward the community, accepting short-term sacrifices in order to maintain relationships and assuring the stability of the relationships (Anderson & Weitz, 1992). That is, commitment can be used as a predictor of members’ actual behaviors in brand community based on social media, such as offering help to other members, participating in community activities, and advocating the brand for others. Considering the role of commitment in the relationship with actual behaviors in the community, commitment should be treated as an important factor that emphasizes the value of continuing relationships between their community and themselves, as presented in Fig. 1.

H5. Consumers’ relationships with the (a) brand, and (b) other consumers, positively influence community commitment.

Advances in information and communication technologies, in particular internet and mobile related ones, has brought new challenges and opportunities to the relationship marketing, in which brand communities has received the attention from researchers and businesses. There is agreement among brand researchers that building and enhancing brand communities and consumer experiences within the context of brand community play an important role in making consumers loyal to the brand (Brodie, Illic, Juric, & Hollebeek, 2013; Jang, Olfman, Ko, Koh, & Kim, 2008; McAlexander et al., 2002; Muniz & O’Guinn, 2001). A brand community is often defined in terms of the relationships in which the consumers situated, including relationships between the consumer and the brand, and among fellow consumers (Muniz & O’Guinn, 2001). In brand community, consumers establish enduring relationships with the elements of brand community and draw values from the long-term interactions through value co-creation practices, which make them to trust and love the brand (Zhou, Zhang, & Su, 2012; Stokburger-Sauer, 2010). Like McAlexander et al. (2002) referred to the effect of good relationships in the consumer-centric brand community on the consumer loyalty, we argue that (Fig. 1):

H6. Consumers’ relationships with the (a) brand, and (b) other consumers, positively influence brand loyalty.

3.3. Effects of community commitment on brand loyalty

Calculative commitment plays a crucial role in maintaining long-term relationships (Fournier, 1998; Lee, Sirgy, Brown, & Bird, 2004), which induces consumers to remain in the existing
service and prevent them from turning to the competitors’ brands (Sheth & Parvatiyar, 1995). Some studies have identified the positive effect of community commitment on brand loyalty (Filler, Jawekki, & Mühlbacher, 2007; Hur, Ahn, & Kim, 2011; Jang et al., 2008). Even come across issues during the consumption, committed consumers the failure is directed toward the performance of the company, not the company itself, and they therefore tend to express their bad experience to the company and try to understand (Schouten & McAlexander, 1995). However in the context of social media, there is little emphasis on this relationship, so we hypothesize that (Fig. 1):

H7. Community commitment positively influence brand loyalty.

4. Methodology

4.1. Subjects and procedure

Responses were collected through a web-based questionnaire survey so we made sure that everyone was exposed and responded to all questions. Also the survey enabled us to measure the time everyone spent on each question, and did not allow participants to fill out the questionnaire more than once. Potential respondents were recruited from an online community of Chinese mobile phone brands based on Sina Weibo. The research platform has around 0.31 million members, with sufficient amount of collective practices and member interactions for analysis. Invitation letters with a questionnaire link were sent to potential participants, or left at offline members’ homepages. In total, 1002 community members were contacted, with 301 responses and 286 valid completed surveys (response rate = 28.54%). Respondents’ profiles are presented in Table 1. Respondents were asked to provide their unique community ID number, which allowed us to retrieve members’ community involvement data to identify respondents and non-respondents.

4.2. Measures

All constructs were measured with multiple item-scales. Some items were adopted from the related literature and modified to suit the study, and some were developed from the literature (Appendix A). The items of social networking, community engagement, impression management and brand use practices were constructed from the definition given by Schau et al. (2009) and the scales developed by Laroche, Habibi, Richard, and Sankaranarayanan (2012). Members of consumer-brand and consumer-other consumers’ relationships came from McAlexander et al. (2002) and Habibi, Laroche, and Richard (2014), community commitment from Garbarino and Johnson (1999) and Algesheimer et al. (2005), and brand loyalty from Chaudhuri et al. (2001) and Delgado-Ballester, Munuera-Aleman, and Yague-Guillen (2003). All items in the final questionnaire were measured by 7-point Likert scale (1 = strongly disagree to 7 = strongly agree).

5. Results

First, we conducted a confirmatory factor analysis to access the measurement properties of the reflective latent constructs. Second, we performed structural equation modeling analysis to test the research hypotheses with LISREL 8.70.

5.1. Measurement model validation

Before running structural equation modeling to test the hypotheses, for purifying and validating the measures, we first conducted an exploratory factor analysis (EFA). All items loaded significantly on their respective latent factors expect one item of impression management, one item of brand use practices and one item of consumer-brand relationships that were deleted, and they achieved standardized loadings of at least 0.70. The 8 scales together explain almost 80% of the total variance. This research estimated reliability and convergent validity of the factors using composite reliability (CR) and average variance extracted (AVE) (see Table 2). The CRs ranged from 0.79 to 0.93, exceeding the threshold of 0.7 (Nunnally, 1978). The AVEs ranged from 0.62 to 0.84, which were above the acceptability value of 0.5 (Fornell & Larcker, 1981).

To access discriminant validity, we built a confirmatory factor analysis model with eight latent constructs and 26 measures. Its goodness-of-fit statistics were as follows: \( \chi^2/df = 2.00 \), root mean square error of approximation (RMSEA) = 0.06, goodness-of-fit index (GFI) = 0.88, non-normed fit index (NNFI) = 0.98 and comparative fit index (CFI) = 0.98. SO we can find that this model fit the data well (Baggozzi & Yi, 1988; Bentler & Bonett, 1980; Hayduck, 1987; Scott, 1995). For satisfactory discriminant validity, the square root of the AVE for each construct exceeded the correction between any pair of distinct constructs (Fornell & Larcker, 1981). Table 3 shows the diagonal elements, which represent the square roots of the AVE for each construct, were greater than the off-diagonal elements, indicating that each construct shared more variance with its measures than with other constructs. Thus, these results showed that all the construct measures in our model achieved discriminant validity.

5.2. Structural model evaluation

In Fig. 1, we show the results of the path model. The overall fit statistics indicated that the hypothesized model offered a good representation of the structures underlying the observed data (\( \chi^2/df = 2.12 \), RMSEA = 0.06, GFI = 0.86, NNFI = 0.98, and CFI = 0.98). Fig. 1 displays the standardized path coefficients (\( \beta \)), path significances according to each path. Most of the hypotheses (H1, H2, H3b, H4b, H5, H6, and H7) were significant in SEM prediction, except for impression management (H3a) and brand use (H4a).

The effects of value co-creation practices on consumer-brand relationship in the community based on social media are hypothesized in H1a-H4a. The effects of social networking and community engagement practices on consumer-brand relationship (H1a and
H2a) are significant with $t$-values respectively: 0.25 (3.95) and 0.59 (8.95). However, the effects of impression management and brand use practices on consumer-brand relationship (H3a and H4a) are not supported.

We found strong support for the effects of value co-creation practices on building harmonious brand community (establishing and keeping good consumer-brand and consumer-other consumers' relationships) on digital social media and the way they convert to brand loyalty through community commitment. Using SEM we found support for the model and most of our hypotheses. We found that the collective value creation practices in brand community established on social media enhance the relationships between consumer-brand and consumer-other consumers and contribute to creating harmonious community atmosphere. Furthermore, the model shows how brand loyalty is increased in brand communities through community commitment.

Contrary to expectations, the effect of impression management practices on the consumer-brand relationship (H3a) was not significant. There are some possible explanations for this finding. First, it may include negative comparisons with other competing brands, which may prevent potential consumers from involving the brand domain and make the impression of unfair competition on consumers. So these actions risk tarnishing its brand and causing resentment among consumers. Second, evangelizing can be negative if extreme. In the background of social network, a lot of comments are anonymously published, which gives commercial activities room for maneuvers, but also reduces the credibility of information (Wellman, 1997). Excessive image management activities may make consumers think that is a purely commercial propaganda by the company control, which upset consumers. Third, the impression management work is lack of accurate, which causes dissatisfaction among traditional consumers. This explanation can be given by the event of coca-cola had changed taste recipe, which had angered traditional coca-cola consumers cannot buy the product (Chidester, 1996).

The effect of brand use practices on the consumer-brand relationship (H4a) was not significant as well. This seems counterintuitive at first glance. There are some explanations may help illustrate this. On the one hand, brand use practices may include the interaction of failed brand consumption experiences, which effects of value co-creation practices on building harmonious brand community (establishing and keeping good consumer-brand and consumer-other consumers' relationships) on digital social media and the way they convert to brand loyalty through community commitment. Using SEM we found support for the model and most of our hypotheses. We found that the collective value creation practices in brand community established on social media enhance the relationships between consumer-brand and consumer-other consumers and contribute to creating harmonious community atmosphere. Furthermore, the model shows how brand loyalty is increased in brand communities through community commitment.

6. Discussion and implications

This study looked at the significant effect of brand communities established on social media. Drawing on the literature on brand community based on social media, we proposed a model of the

### Table 2
Statistics of construct items.

<table>
<thead>
<tr>
<th>Construct Items</th>
<th>Factor loadings</th>
<th>Composite reliability (CR)</th>
<th>Average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social networking (SN)</td>
<td>SN1 0.80, SN2 0.79, SN3 0.78, SN4 0.77, SN5 0.78</td>
<td>0.89</td>
<td>0.62</td>
</tr>
<tr>
<td>Community engagement (CE)</td>
<td>CE1 0.84, CE2 0.91, CE3 0.85, CE4 0.88</td>
<td>0.93</td>
<td>0.76</td>
</tr>
<tr>
<td>Impression management (IM)</td>
<td>IM1 0.90, IM2 0.71</td>
<td>0.79</td>
<td>0.66</td>
</tr>
<tr>
<td>Brand use (BU)</td>
<td>BU1 0.88, BU2 0.74</td>
<td>0.80</td>
<td>0.66</td>
</tr>
<tr>
<td>Consumer-brand (CB)</td>
<td>CB1 0.92, CB2 0.91</td>
<td>0.91</td>
<td>0.84</td>
</tr>
<tr>
<td>Consumer-other consumers (COC)</td>
<td>COC1 0.75, COC2 0.86, COC3 0.79</td>
<td>0.84</td>
<td>0.64</td>
</tr>
<tr>
<td>Community commitment (CCO)</td>
<td>CCO1 0.87, CCO2 0.70, CCO3 0.82, CCO4 0.75</td>
<td>0.87</td>
<td>0.62</td>
</tr>
<tr>
<td>Brand loyalty (BL)</td>
<td>BL1 0.85, BL2 0.74, BL3 0.82</td>
<td>0.85</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Diagonal elements (bold) are the square root of the average variance extracted (AVE). Off-diagonal elements are correlations between constructs.

### Table 3
Discriminant validity and correlation of constructs.

<table>
<thead>
<tr>
<th>Construct</th>
<th>SN</th>
<th>CE</th>
<th>BU</th>
<th>IM</th>
<th>CB</th>
<th>COC</th>
<th>CCO</th>
<th>BL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SN</td>
<td>0.79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CE</td>
<td>0.61</td>
<td>0.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BU</td>
<td>0.56</td>
<td>0.56</td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IM</td>
<td>0.54</td>
<td>0.45</td>
<td>0.55</td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CB</td>
<td>0.60</td>
<td>0.73</td>
<td>0.44</td>
<td>0.44</td>
<td>0.92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COC</td>
<td>0.62</td>
<td>0.66</td>
<td>0.78</td>
<td>0.60</td>
<td>0.51</td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCO</td>
<td>0.53</td>
<td>0.27</td>
<td>0.36</td>
<td>0.43</td>
<td>0.35</td>
<td>0.38</td>
<td>0.79</td>
<td></td>
</tr>
<tr>
<td>BL</td>
<td>0.62</td>
<td>0.65</td>
<td>0.60</td>
<td>0.42</td>
<td>0.64</td>
<td>0.65</td>
<td>0.59</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Diagonal elements (bold) are the square root of the average variance extracted (AVE). Off-diagonal elements are correlations between constructs.
may lead consumers to make some negative messages about brand within the community. On digital social media, diffusion and dissemination of information is very alarming, and negative posts or comments play a dominant effect compared to positive. Negative sentiment will reduce substantially (10%) the community’s new-subscriptions and cause product sales decline (−6.9%) (Corstjens, 2012). On the other hand, in some cases, systematizing brand use patterns make consumers feel normative pressure, where consumers are worried about being derided as a layman due to rarely acting in standard way, which may lead them to resist the use of brand products (Algesheimer et al., 2005). Normative social influence’s power stems from the human identity as a social creature, with a need for companionship and association, which is an important element of attitude-theoretic formulations of behavior as well (Ajzen, 1991).

In theory angle, our study contributes to existing brand community research in several ways. First, our results empirically support why value co-creation practices matters in nurturing healthy brand community on social media (Schau et al., 2009). Through a diverse constellation of practices, consumers get continual interaction with other consumers and deep understanding of the brand, which enhance ties between consumers and brand, and consumers and other consumers. While strengthen “triangle relationships” make the community harmonious and healthy. Second, from social psychology and relationship marketing perspective, our model finds that the consumer-other consumers relationship strongly influences community commitment and brand loyalty. Brand community based on the social network technology organizes the scattered consumers together who have a common interest in a particular brand. Sharing meaningful brand experiences and receiving feedback from fellow members strengthen the ties among consumers and brand entities, which promote the foundation of sense of community. To some extent, the results back up the argument that the social aspects of brand community act as the living manifestation of the brand’s personality and relationship with consumers by the social and networked nature of social media (McWilliam, 2012). Third, our findings explicitly show that the effects of practices on consumer-brand-consumer triad relationships on social media platform have different weights. Some value co-creation practices will be affected by many factors, which makes the effect on relations among the elements of brand community may vary in different situations. As a new thing, a variety of activities take place in brand community based on social media are in a period of apprenticeship (Schau et al., 2009). In this stage, the practices’ effect has not yet been fully revealed, which evolve over time as consumer engagement deepens and practices are integrated. Therefore, in summing up the law of the study, one should maintain a cautious attitude.

From practical perspective several implications have arisen from the results of this research. First, companies should consider setting up a healthy brand community based social media as a mean to enhance consumers’ level of brand loyalty. In the computer-mediated context, the barriers members enter or exit brand communities are lower than traditional communities (Ouwersloot & Odekerken-Schröder, 2008). Conversely, an individual member also can easily terminate his or her membership in the community. So it is imperative that companies should invest more and better efforts in bringing consumers to brand community and retaining them as loyal and profitable consumers. In this regard we verified that sponsoring value co-creation practices strengthens the ties of consumer-brand-consumer and enhances the level of community commitment, which eventually boost consumer loyalty. In addition, this study also reveals that consumer-other consumers relationship can strengthen community commitment and brand loyalty, in a certain extent which shows that enhancing communication and interaction among consumers are the important means for implementation of brand strategy with the help of brand community based on social media. Second, in carrying out the value co-creation practices within brand communities, businesses should be cautious about their potential consequences. Due to vast reach, low cost and popularity of social media, many businesses almost blindly take these advantages to initiate various activities. Our findings help brand managers have more insights into the mechanism of value co-creation practices as well as their relative shares. From our results, we can find that community engagement and social networking practices have greater and broader impact on the relationships of consumer-brand and consumer-other consumers. These two practices respectively emphasize the heterogeneity and homogeneity of brand community. So, in order to promote the comprehensive development of community relations, businesses can launch a set of staking, milestoning, badgeing and documenting activities to underline the differentiations among the brand community members, or the trio of welcoming, empathizing, and governing activities to articulate the normal behavioral expectations within brand community. Moreover, this study turns out brand use practices make a meaningful impact on consumer-other consumers relationship, and the impact of impression management practices is relatively limited. Hence, businesses can reinforce the tie among consumers by improving use of the focal brand with the help of grooming, customizing, and commoditizing activities. As community manager, he or she should invest limited resources into the practices can create more rewarding, and give full play the roles that different practices have in building harmonious brand community based on social media.

7. Limitations and future research

Despite these contributions, we acknowledge the limitations of this research and accordingly propose new avenues for future research. First, because of the massive numbers of brand communities on social media, our study may not be representative of all communities developed on the social network. The brand community we selected was built on Sina Microblog that is a very popular social networking platform, which makes the brand community could be very different from other platforms. It would be a good idea for future studies to analyze the different characteristics of other brand communities based on wechat, or the like. Second, the main limitation factor is the product selection because we use one mobile brand as the empirical testing ground for far brand extensions. Community members in different product categories may have different behavioral models. So, future research should investigate other product categories to have a rich understanding on the effects of value co-creation practices.

Moreover, regarding our goals, we mainly concentrated on the positive effect of value co-creation practices on brand loyalty from the brand community’s triad relationships. However, in the future researchers could take into account the negative event and factors to produce deeper insights, such as negative consumer sentiment, bad brand experiences. In the face of a brand negative event, obtaining an understanding of the differences between newly established brand community response and a long established brand community is critical. Researchers taking a longitudinal study are able to secure a greater understanding on this issue. And in the meantime, value co-creation practices are dynamic, whose effect will change with time. Therefore, researchers may consider the effects of value co-creation practices within brand communities based social media evolves over time to track the study subjects.
Acknowledgments

The authors gratefully acknowledge the support of National Natural Science Foundation of China (No. 71272018), and the useful suggestions by the editor and reviewers.

Appendix A. Summary of measures

<table>
<thead>
<tr>
<th>1 Social networking</th>
<th>SN1 – Newers receive special treatment after become a member</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>SN2 – The community keeps in touch with members with notification</td>
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<td></td>
<td>SN3 – The community is concerned with members' needs</td>
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<td></td>
<td>SN4 – The community recognizes special occasions and sends members greetings</td>
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<td></td>
<td>SN5 – At least some of community members know each other</td>
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<thead>
<tr>
<th>2 Community engagement</th>
<th>CE1 – There are variances within the brand community membership.</th>
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<tbody>
<tr>
<td></td>
<td>CE2 – Members actively share seminal events in brand ownership and consumption</td>
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<td></td>
<td>CE3 – Members use symbolic things to commemorate the brand landmark</td>
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<td></td>
<td>CE4 – Members detail personal brand relationship journey in a cohesive narrative</td>
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<tr>
<th>3 Impression management</th>
<th>IM1 – Members share the brand “good news”</th>
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<tr>
<td></td>
<td>IM2 – Members actively defend the brand reputation</td>
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<tr>
<td></td>
<td>IM3 – Members actively defend/refute the actions of the company’s management</td>
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<tr>
<th>4 Brand use</th>
<th>BU1 – Members share useful tips about better uses of the product or brand</th>
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<tr>
<td></td>
<td>BU2 – Members share their experiences about their successful or unsuccessful attempts at customization of the product</td>
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<td></td>
<td>BU3 – Members judge the marketplace behaviors associated with brand</td>
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<tr>
<th>5 Consumer-brand</th>
<th>CB1 – The brand is of the highest quality</th>
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<tbody>
<tr>
<td></td>
<td>CB2 – The brand understands my needs</td>
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<td></td>
<td>CB3 – I value the brand heritage</td>
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<tr>
<th>6 Consumer-other consumers</th>
<th>COC1 – I have met wonderful people because of the community</th>
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<tbody>
<tr>
<td></td>
<td>CCO2 – I feel a sense of kinship with other community members</td>
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<td></td>
<td>CCO3 – I have an interest in the community for the other brand owners</td>
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<tr>
<th>7 Community commitment</th>
<th>CC1 – I am proud to belong to this brand community</th>
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<tbody>
<tr>
<td></td>
<td>CC2 – I feel a sense of belonging to this brand community</td>
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<td></td>
<td>CC3 – I care about the long-term success of this brand community</td>
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<tr>
<th>8 Brand loyalty</th>
<th>BL1 – If I experience a problem with this brand, I will try to understand</th>
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<tbody>
<tr>
<td></td>
<td>BL2 – I intend to keep purchasing the products of this brand</td>
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<tr>
<td></td>
<td>BL3 – If this brand is not available at the store, I would buy it in another store</td>
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</tbody>
</table>

References


