Knowledge Contribution in Customer-Centric Brand Community: A Person-Environment-Fit Model

Xiao-Liang Shen xlshen@whu.edu.cn
Economics and Management School, Wuhan University, China

Yangjun Li lyon@whu.edu.cn
Economics and Management School, Wuhan University, China

Yongqiang Sun sunyq@whu.edu.cn
School of Information and Management, Wuhan University, China

Abstract

Recently, we witness a shift from product-centric to customer-centric brand community. The customer-centric approach allows value co-creation in brand community by involving customers in various activities that bring a product to the market. It is thus interesting and necessary to examine customers' motivations in helping brand and community grow and succeed. Based on the person-environment fit framework, this study presents an attempt to investigate consumer contribution in one of the largest brand communities (i.e. XiaoMi Community) in Mainland China. The results demonstrate that both complementary fit and supplementary fit significantly predict consumers’ satisfaction with and their commitment to the community, which in turn leads to contribution intention. The findings further suggest the importance of person-environment fit in promoting knowledge sharing in customer-centric brand community, and contribute to both research and practice on facilitating consumer participation.

Keywords: person-environment fit, brand community, motivation, knowledge contribution

1. Introduction

For decades, the virtual community has spread with the development of network information technology. As a counterpart of the community in the virtual world, virtual community was formed by a group of people, who mainly interact with each other through the Internet to share knowledge and information. There are various types of virtual communities and one of the most attractive communities is brand community. Brand community is “a specialized, non-geographically bound community, based on a structured set of social relationships among admirers of a brand” [1]. Accordingly, it has become common and easy to connect consumers together with a brand through building a brand community, which promotes the practice of customer relationship management greatly. Then the customer-centric brand community has captured extensive attention and application in practice and research.

As with other virtual communities, knowledge is crucial for the customer-centric brand community as well. In the brand communities, members are willing to contribute their knowledge and experience to answer others’ question, involve in product design because of the natural love for and strong interest in the brand or product. Thus, as for the brand community, the knowledge contribution of members helps the brand and community grow and success. On the other hand, as for the members, sharing their knowledge in the
community not only improves their knowledge structure, but also cultivates and maintains the relationship between members. Further, it is a happy emotional experience for brand as well. Therefore, it is crucial for brand communities to motivate members to participate in interaction and knowledge sharing.

Speaking from the essence, the brand community is a social network environment connected with a brand. In the process of building a brand community, the common customers believe their values and life preferences are consistent with the brand. The brand community is organized by the common customers to express their love and admiration for the brand. In view of this, sharing knowledge in the brand community will be influenced by individuals’ value, abilities and personalities, as well as the needs, culture, norms and ambiance in the community. Accordingly, knowledge sharing behavior is the result of interaction between individual and community environment.

Prior studies have explained knowledge sharing mostly from the perspective of individuals’ psychology. Many classical sociology theories, such as social identity theory, social capital theory, social exchange theory and social influence theory, have been implied to explain the individuals’ motivation for knowledge sharing [2,3]. These studies indicated that knowledge sharing in the community should be a pro-social organizational behavior, rather than a rational behavior based on cost-benefit analysis. In particular, social capital theory and social influence theory focus on discussing the influence of social environment factors on the individuals’ knowledge sharing motivation. And the social exchange theory is biased to the individuals’ benefit. Therefore, few studies focused on the congruence and consistence between individuals and environment to discuss the motivation for knowledge sharing. Person-environment fit theory is an interesting and comprehensive framework to investigate the interaction between individual and environment. In generally, person environment fit positively affects on individuals’ attitude (satisfaction, commitment, loyalty, etc) to the environment and personal behaviors (performance, pro-social behavior, etc) in the environment [4]. In this regard, this study will creatively examine customers’ motivation for knowledge sharing in the customer-centric brand community based on the person-environment fit theory. Furthermore, prior studies focused on the outcome (brand loyalty, innovation, value co-creation, trust, etc) of knowledge sharing in the brand community [5], few studies concerned the antecedents of knowledge sharing in brand community. Thus, the paper enhances our theoretical and practical understanding of knowledge contribution based on person-environment fit theory, as well as the knowledge sharing in the customer-centric brand community.

In what follows, a definition of the customer-centric brand community is presented. Next, an overview of the fit literature is provided and then our research model and hypothesis are developed. As will be detailed later, we introduce our research method and survey instrument. The data analysis indicated that both complementary fit and supplementary fit have significant effects on satisfaction and commitment, which influence willingness to contribute knowledge in turn. Finally, theoretical and practical implications of the proposed model are addressed.

2. Theoretical Background

2.1 Customer-Centric Brand Community
In the prior studies, the brand community has attracted much attention of scholars and practitioners. Brand community originally came from consumption community proposed by Boorstin [6]. He developed a model to demonstrate the relationship between customers and brand in the consumption communities, which was viewed as the traditional model of customer-brand relationship. Muñiz and O’Guinn [1] regarded the brand community as a “customer–customer-brand triad” and they focused on the relationship among customers around a brand. Based on the “customer–customer-brand triad”, Upshaw and Taylor [7] thought all brand related stakeholders, such as employees, customers, shareholders, suppliers, strategic partners and other stakeholders, should be included in the brand community and they proposed the master brand community model. Further, McAlexander et al [8] pointed out that brand community was customer-centric. They indicated that the significance of the brand community lied in the customers’ experience, rather than in the brand holder.

Prior studies have indicated that the cost of attracting new customers is much greater than the cost of retaining old customers [9]. In the context of brand community, with the customer-centric model, the repurchase behaviors and interaction are the source of the profit [10]. Thus, the managers should pay much attention to enhance the satisfaction and commitment of customers for the long-term profitability. On the other hand, many customer-centric brand communities are founded and managed mostly by customers themselves, who often overlaps with common values, hobbies and lifestyles. For example, most of the tasks including answering the questions asked by other members, teaching newer members how to use the product, and educating them about the practices and norms of the community, are performed by members themselves [11]. Further, firm’s marketers can gather marketing research insights of praise or criticism by monitoring discussions among participants or interacting with participants directly. Therefore, the customer-centric brand community is able to cover all aspects of a product or a service, from product design and marketing activities to customer relationship management, allowing customers to become co-designers and value co-creators [12,13]. Due to this, practitioners and scholars have expressed great interests to this field. A growing number of companies, such as XiaoMi, MeiZu, Microsoft XBOX 360, have involved consumers in the design, brand marketing, customers’ experience, customer relationship management for value co-creation.

2.2 Person-Environment Fit Theory

The person-environment fit means the degree of congruence or match of the characteristics of individuals and environment [4]. The characteristics of person include interests, ambitions, values, preferences and so on. And the characteristics of environment include goals, values, resources, culture, opportunities and so on. Person environment fit occurs when these characteristics are consistent between individual and environment. The person environment fit theory has been applied and empirically examined in a wide variety of domains, such as stress, creativity, anxiety, and commitment. As noted above, we can conceptualized the fit between individuals and environment in two ways. First, viewed from the concrete perspectives, person-environment fit can be understood as person-organization fit, person-occupation or person-vacation fit, person-job fit, person-group fit, and person-person fit. They are just limited to some specific types of fit. And second, we can also conceptualize the person-environment fit as supplementary or complementary fit more abstractly. Muchinsky & Monahan [14] first proposed that supplementary and complementary were the
two types of person-environment congruence and they are discussed next.

Complementary fit occurs when a person’s characteristics satisfy the whole or partial demands of the environment [14,4]. A good complementary fit occurs when both individuals and organization complement one-another’s needs, such as opportunities provided by the organization for individuals, or efforts provided by individuals for the organization [15]. Thus, there are three dimensions of complementary fit in the environment: demand abilities, need supplies and unique roles, which are formative indicators of complementary fit according to the prior studies [16].

Supplementary fit occurs when individuals are similar to the environment [14,4]. The similarity can be conceptualized from two aspects. One is the congruence of values between individual and environment, while another is the interpersonal similarity, such as demographic and psychographic similarity between a person and other members of that environment. Then, supplementary fit could be specified as formative constructs, including value congruence and interpersonal similarity, more appropriately rather than reflective constructs because of the four criteria for specifying formative constructs and reflective constructs proposed by Jarvis et al [16].

3. Research Model and Hypotheses

Based on the person-environment fit theory, as noted above, the theoretical proposed model is presented in Figure 1.

As discussed earlier, we have proposed three fundamental aspects of complementary fit as being particularly conducive to strong affective attitudes and pro-social behaviors: demand abilities, need supplies and unique role. Need supplies reflects the resource, such as physical, and psychological supports, supplied by the community can meet the individuals’ needs. Psychological need fulfillment theory indicates that a person becomes satisfied [17] and has an attachment or a desire to stay in the currently community [18] when the supplies provided by the environment meet his or her needs, such as interesting and challenging work, promotion opportunities, recognition, and positive conditions. Conversely, when the supplies fall short of what the person desires, the person will be dissatisfied and have an intention to leave the community. Rather, demand abilities underline the individuals’ abilities to meet the environment demands. If a person has enough abilities to meet the environment demands, such as answering the questions asked by other members, sharing own experience to others,
and well performing the tasks conducted by the community, the interaction will be active resulting in the good relationship between members in the community, so that he or she will gain satisfaction and have confidence to stay in the community, in other words, be commitment to the community. Unique role refers to the unique contribution a person makes to the environment. When a person is unique to other members in the community, he or she will gain more attention from others, have a irreplaceable position and be more attracted to the community so that he or she should consistently perform in ways that other team members value and benefit the environment [19]. Bringing together these statements, we posit that complementary fit affects individuals’ attitudes to the community as follows.

**Hypothesis 1:** Complementary fit has a positive effect on individuals’ commitment to the customer-centric brand community.

**Hypothesis 2:** Complementary fit has a positive effect on individuals’ satisfaction to the customer-centric brand community.

Supplementary fit refers to the similarity between the person and the environment, including the values and other members of the environment [14]. Persons will find it comfortable to interact in an organization where the values and goals which are valued by them are also significant to others in the organization as well as advocated by the organization. This is because sharing common values and similar interpersonal characteristics enables one to communicate more effectively with others and have more freedom to express in the community [20,21]. Since organization values and goals delineate how to allocate the organizational resources and specify how members should behave, when people keep their values consistent with the organization, there will be little interaction costs and he or she will find it more smoothly to get resource from the organization [22]. On the other hand, interpersonal similarity should affect participants’ attitude to the community, because people are easily to be attracted to others with similar demographic and psychographic cognitive characteristics and trust them, which reduces uncertainty and improves interpersonal relationships [23]. Moreover, because the employees reflect the organization’s values and interpersonal similarity [24], supplementary fit will bring cognitive congruence and satisfaction [21]. Thus, value congruence and interpersonal similarity should positively affect the employee’s attitudes. Therefore, the relationship between supplementary fit and individuals’ attitudes are assumed as follows:

**Hypothesis 3:** Supplementary fit has a positive effect on individuals’ commitment to the customer-centric brand community.

**Hypothesis 4:** Supplementary fit has a positive effect on individuals’ satisfaction to the customer-centric brand community.

Based on the theory of reasoned action, a person’s intention to conduct the behavior determines his or her specified behavior and is determined by their attitudes toward the behaviors. Commitment and satisfaction are accepted mostly as the attitudes to the organization in the community context, which have been examined as the outcomes of the person environment fit [19,25]. Commitment is conceptualized as “a desire to have a continued relationship and an effort to ensure its continuance” [26,27] or as “a pledge for relational continuity between exchange partners” [28]. It is agreed that commitment promotes pro-relationship acts, especially like reading threads, posting replies, moderating the discussion in the online community [29]. Satisfaction refers to the individuals’ overall sense of well-being based on assessing the environment or environment-related experience [30]. Specially, according to the social exchange theory, people strive for the balance of give and
get through social exchange. So, if a participant is satisfied with the community, the participant may possibly reciprocate with his/her knowledge contribution in the online community to help others. Studies in the organizational and behavior management have supported that job satisfaction is related to willingness to contribute knowledge and eagerness to share knowledge [25]. Thus, we have the following hypothesis:

**Hypothesis 5:** Commitment has a positive effect on individuals’ willingness to contribute knowledge to the customer-centric brand community.

**Hypothesis 6:** Satisfaction has a positive effect on individuals’ willingness to contribute knowledge to the customer-centric brand community.

4. Research Method

4.1 Data Collection

The target population of the study is participants interacting with others in the XiaoMi Community, one of the largest and most typical customer-centric brand community in mainland China. The survey instrument was sent online and a total of 283 useful responses were received. Most of the respondents were students (62.9 percent), with 60.4 percent were from 18 to 22 years old. The sample comprised of 86.9 percent males and 13.1 percent females.

4.2 Measurement

To measure fit, both direct and indirect measures have been used in prior studies [4]. This study assessed fit directly because the two components of indirect measure should be commensurate. However, the direct measure avoids the limitation by asking respondents explicitly whether they believe that a fit exists between them and their environments [30]. Seven-point Likert-scale form 1 (strongly disagree) to 7 (strongly agree) was used in the survey to indicate the extent to which their abilities and needs are compatible with their organizations. In the survey instrument, all the measurement items were adapted to fit the specific context from the previous literature.

4.3 Data Analysis and Results

Smart PLS 2.0.M3 was used in this study to examine the research model. Following the guidelines of two-step analytical procedures, we first examined the measurement and assessed the structural model then[31]. Further, there are differences in assessing the measurement model of formative and reflective constructs.

4.3.1 Measurement Model

**Reliability and Validity of Reflective Constructs** In this study, construct reliability, convergent validity and discriminant validity were examined to assess the measurement model of reflective constructs. Construct reliability was assessed by testing the composite reliability and the average variance [32]. A composite reliability of 0.70 or above and an average variance extracted of more than 0.50 are deemed acceptable [33]. As illustrated in Table 2, all the measures of reflective constructs exceed the recommended thresholds.
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Table 2. Loadings and Cross Loadings

<table>
<thead>
<tr>
<th>Constructs</th>
<th>CR</th>
<th>AVE</th>
<th>Items</th>
<th>COM</th>
<th>SAT</th>
<th>WTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment (COM)</td>
<td>0.910</td>
<td>0.716</td>
<td>COM1</td>
<td>0.862</td>
<td>0.391</td>
<td>0.416</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>COM2</td>
<td>0.862</td>
<td>0.305</td>
<td>0.454</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>COM3</td>
<td>0.848</td>
<td>0.256</td>
<td>0.387</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>COM4</td>
<td>0.812</td>
<td>0.273</td>
<td>0.407</td>
</tr>
<tr>
<td>Satisfaction (SAT)</td>
<td>0.933</td>
<td>0.776</td>
<td>SAT1</td>
<td>0.386</td>
<td>0.806</td>
<td>0.329</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SAT2</td>
<td>0.283</td>
<td>0.905</td>
<td>0.222</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SAT3</td>
<td>0.285</td>
<td>0.933</td>
<td>0.308</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SAT4</td>
<td>0.304</td>
<td>0.876</td>
<td>0.300</td>
</tr>
<tr>
<td>Willingness to Contribute (WTC)</td>
<td>0.916</td>
<td>0.784</td>
<td>WTC1</td>
<td>0.442</td>
<td>0.316</td>
<td>0.891</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WTC2</td>
<td>0.415</td>
<td>0.315</td>
<td>0.872</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WTC3</td>
<td>0.450</td>
<td>0.258</td>
<td>0.895</td>
</tr>
</tbody>
</table>

Note: CR=Composite Reliability, AVE=Average Variance Extracted

Convergent and discriminant validity was examined using confirmatory factor analysis (CFA). In particular, convergent validity indicates the degree to which the theoretically-related measures are highly correlated with each other, and thus the loadings of all the items in their latent constructs should be higher than 0.7. Discriminant validity indicates the extent to which a given construct differs from other constructs, and thus the item loadings on the intended constructs should be higher than loadings on other constructs. The results in Table 2 depicted a satisfactory convergent and discriminant validity.

Reliability and Validity of Formative Constructs To achieve a more parsimonious model for testing, we condensed the two high-order constructs (e.g., complementary fit and supplementary fit) by using factor scores of the sub-constructs as items of the higher-order construct. The construct validity of formative constructs was assessed by examining the item weights. As shown in Table 3, weights for all items are statistically significant (except for CF3), indicating these items have important and relative contributions to both complementary fit and supplementary fit. CF3 was excluded from subsequent model analyses.

Table 3. Item Weights of Formative Constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Item</th>
<th>Weights</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complementary Fit</td>
<td>CF1</td>
<td>0.257</td>
<td>2.361</td>
</tr>
<tr>
<td></td>
<td>CF2</td>
<td>0.770</td>
<td>11.408</td>
</tr>
<tr>
<td></td>
<td>CF3</td>
<td>0.160</td>
<td>1.471</td>
</tr>
<tr>
<td>Supplementary Fit</td>
<td>SF1</td>
<td>0.305</td>
<td>3.996</td>
</tr>
<tr>
<td></td>
<td>SF2</td>
<td>0.866</td>
<td>18.644</td>
</tr>
</tbody>
</table>

Note: CF1=Demand Abilities, CF2=Need Supplies, CF3=Unique Role; SF1=Value Congruence, SF2=Interpersonal Similarity.

4.3.2 Structural Model

Figure 2 presents the overall explanatory power, the estimated path coefficients (significant paths are indicated with asterisks), and the associated t-value of the paths. Test of significance of all paths were performed using the bootstrap re-sampling procedure.
The results of PLS analysis revealed that all hypotheses were supported. Both commitment and satisfaction together explained 27% of the variance in willingness to contribute, with path coefficients at 0.427 and 0.180, respectively. This model also accounted for 38.9% of the variance in commitment, and 22.7% of the variance in satisfaction. The results showed that complementary fit has significant impacts on commitment and satisfaction, with path coefficients at 0.348 and 0.201. Supplementary fit also exerts great effect on commitment and satisfaction, with path coefficients at 0.332 and 0.316.

![Diagram of the PLS analysis model](image)

Note: *p < 0.05, **p < 0.01, ***p < 0.001

**Fig. 2. Result of PLS Analysis**

5. Discussion

5.1 Findings and Implications

This study focuses on the knowledge contribution in the customer-centric brand community from the perspective of person-environment fit theory. The result suggests that both complementary fit and supplementary fit have significant effects on participants’ commitment and satisfaction, which in turn influence subsequently willingness to contribute knowledge to the customer-centric brand community. Further, our findings suggest that grassroots volunteer to join and run the brand community because they are in a good consistent with the community or other members in the community. The congruence includes complementary fit and supplementary fit, which were specified as formative constructs both. More specifically, the complementary fit is constituted of need supplies, demand abilities and unique roles, on the other hand, the supplementary fit is formed of value congruence and interpersonal similarity.

Although scholars have paid much attention to the customer-centric brand community when they discussed the brand community recently, the prior studies just limited to the path to customer-centric on the firm-side but neglected the customers’ motivation on the customer-side. Therefore, this paper creatively applies the person-environment fit theory to consider knowledge contribution in the customer-centric brand community. Moreover, the study finds that the fit between individuals and environment has a positive effect on the consumers’ satisfaction with and their commitment to the community, which in turn influences their willingness to contribute knowledge in the customer-centric community. Thus, we can understand the contributions of the study in three ways. First, we conceptualized the person-environment fit as complementary fit and supplementary fit from the concept of fit, regardless of the specific situation such as person-organization fit, person-job fit and person-group fit so on, as well as developed and confirmed the general structure of person-environment fit included need supplies, demand abilities, unique role, value
congruence and interpersonal similarity, which were examined as a valid measure of person-environment fit except unique role in the survey study. Second, this is one of the first papers to study antecedents of participation and interaction in the customer-centric brand community on the customer-side. Different from the product-centric brand community, the customer-centric brand community is rooted in the customer-centric marketing, which represents that marketers focus on understanding and satisfying the needs of individual consumers and value co-creation with individual customers. This is the mainstream of the virtual community in the future. Third, in addition to this study’s contribution to helping us to understand the customer-centric brand community on customer-side, this study creatively applies person-environment fit theory to study knowledge contribution in brand community. It gives us a new perspective that we can study knowledge sharing based on the interaction between person and environment.

On the other hand, since the person-environment fit theory can explain the customers’ motivation to participate and interact in the customer-centric brand community well, firms can manage the customer relationship better through paying more attention to the consistency between the brand community and customers. Therefore, it enhances our theoretical and practical understanding of knowledge contribution in the customer-centric brand community.

5.2 Limitations and Future Research

Although this study has shown the effects of person-environment fit on the participants’ motivation in the customer-centric brand community, Limitations still exist in this study. First, as we just collected the data in a highly collectivist environment, the findings should not be extended to virtual community in different national cultures. Second, our data was collected from multi-sources, which would be vulnerable to stability and consistency bias. Third, our procedures for identifying motivation of participants might ignore the natural barriers, such as time and space. Finally, although we conceptualized the person-environment fit abstractly, however, we chose a specific vacation, XiaoMi Community, to examine the effects of person-environment fit on willingness to contribute knowledge. It could bring some contradictory results in different vacations, for example, only needs supplies fit and interpersonal similarity with their housemates in the recovery home led to satisfaction, however, the demand-abilities fit, unique role and value congruence have little significant effect on residents’ attitudes [15]. This study also suggests that unique role cannot meet the statistical validly. Given these limitations, it is strongly recommended to encourage others to extend our study as follows: (1) Examine our findings cross different cultures and environment with more rigorous design; (2) Collect the data from only one source, if not, perform the stability and consistency test strictly as much as possible; (3) Identify the direct or indirect participants’ knowledge contributing through IT technology; (4) Choose a specific person-vocation fit model when analyze a specific vacation, or identify the distinction between different types of person-environment fit and their outcomes.

6. Conclusion

This study shows that person-environment fit theory is a valid framework to understand the knowledge contribution in the customer-centric brand community. By surfacing the motivation of participants to contribute in the community, we find the fit between participants
and community has a significant effect on the satisfaction and commitment, which in turn influence behaviors of participants in the customer-centric brand community. In the light of the customer-centric brand community, we hope our findings will provide guidance to others aimed at extending the person-environment fit theory in the virtual community.

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