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# How Does Online Brand Community Climate Influence Community Identification? The Mediation of Social Capital

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**Abstract:** Although online communities with a supportive climate encourage members to participate and exchange their information openly and freely, participants may perceive the community to be unsafe without proper control. Do controlling climates also contribute to the accumulation of social capital in online brand communities (OBCs)? The purpose of our study was to investigate how controlling and supportive climates jointly influence community identification, and to examine the mediating effects of social capital and the moderating effects of community age. A conceptual framework was proposed and tested with data collected from an online survey of 481 online brand community members. We found that both controlling and supportive climates had positive effects on social capital (trust and norms of reciprocity), which exerted a partial mediation between community climate and community identification in the OBCs examined. Developing a community climate was particularly effective in generating trust in older communities. This research contributes to the community literature and has important implications for community climate management. We identified the boundary conditions of the community climate-trust association.

**Keywords:** online brand community; social capital; brand identification; reciprocity

## 1. Introduction

With advances in information (digital) technologies and people's increasing proficiency with the internet, organizations are creating online communities for customers to engage with them and with each other [1,2]. An online community serves as a way of connecting a brand to customers. When a brand is the focal point of an online community, the community is labeled an online brand community (OBC), where consumer groups gather and communicate to achieve personal and group goals [3–5]. OBCs have been growing exponentially since 2004, and almost half of the top 100 global brands have established their own virtual communities [6]. This popularity is unsurprising given the benefits of OBCs for both marketers and consumers. For marketers, an OBC can work as a versatile brand-building tool for creating, customizing, and distributing persuasive advertising messages [7]. At the same time, an OBC provides consumers a platform to communicate, share meaningful consumption experiences with each other, and develop a sense of belonging [8,9].

Member participation has been identified as a key driver of brand-community performance [10]. Some studies have been conducted from the perspective of consumer motives. However, once people participate in OBCs, the question is then what information technology could provide to ensure a good experience. Climate traditionally refers to weather statistics over long periods of time, but the concept is widely used in the field of organizational behavior. Therefore, community climate in our study is regarded as how a community communication environment is perceived and interpreted by participants. Inspired by management research, we distinguish two types of community climate: controlling and supportive [11]. Although research has revealed that organizations with a

supportive climate encourage members to participate, exchange their information, and practice constructive conflict resolutions openly and freely [12], participants may perceive the community to be unsafe without proper control [13]. However, little research has examined the effect of a controlling climate in an OBC context. Therefore, a theoretical question worth pondering is whether a controlling climate is necessary in OBCs and how controlling and supportive climates influence community relationships.

We draw on and further extend social capital, organization climate and organization inertia theories to develop a conceptual framework that seeks to understand the affective influence of controlling and supportive climates on community relationships in OBCs. To advance this line of research, we propose that participants' relationship with OBCs is determined not only by a supportive climate but also by controlling climate. Specifically, we expect that the impact of both types of climate on community identification is mediated by social capital and that community age plays a moderating role. Social capital draws on more physical forms of capital metaphorically to show the value of networks of relationships and trust. Given that OBCs can be viewed as networked connections among community members [4], a reasonable step is to propose that social capital is the underlying mechanism behind the relationship between community climate and community identification.

The contributions of our research are fourfold. First, we provide a conceptual framework which postulates the outcomes of both supportive and controlling climates in an OBC context. Second, this study highlights the positive role of a controlling climate, which management theories view as negative for organizations as it may limit participants' ways of participating, interacting and sharing [14,15]. Third, we contribute to OBC theories by taking a network view on the formation of community identification. Specifically, we investigate social capital as a mediator linking the OBC constructs. Fourth, this study contributes to organizational inertia theory by exploring the moderating role of community age. Both controlling climate and supportive climate are found to be more effective in facilitating community identification in older communities characterized by inertia than in younger communities.

## 2. Theoretical Background

### 2.1. Community Climate of OBCs

Based on field theory, many studies have shown that an organization's climate influences the attitude and behavior of its members [16]. Organizational climate has been viewed as a concept similar to work environment, perceived by the employees living and working in the organization and assumed to shape their behavior and motives. Organizational climate can be defined as the psychological environment shaping an organization in different aspects [17]. Accordingly, OBC climate can be defined as a set of measurable attributes of the OBC environment, perceived by members who interact with each other in the community, which affects their emotion, attitude and action.

Based on the integration of existing literature, our research divides OBC climates into supportive and controlling climates. In a supportive community climate, an online community encourages members' free and open communication of information and supports new ideas [13]. Community managers pay attention to the needs of members, provide all necessary resources and help in a timely manner. A supportive environment is beneficial for organizations to encourage members to participate, exchange information, and engage in constructive conflict resolution openly and freely [12]. However, some risks may arise for members of an OBC without proper group norms [18].

Control has been a central concept of organizational theory for a long time [19]. Concertive control can be another dimension of Edwards' three classical features of control, which are, simple, technological, and bureaucratic. Concertive control also enables flat management structures and increased worker participation. Members develop a strong sense of self-control based on their own values, norms, and rules for doing better team work [19].

Online communities provide online social connections by which members with common interests, goals, or activities interact to exchange information and knowledge [20]. Each OBC member joins voluntarily. Members form a common understanding based on their common values. A set of behavioral standards is established for self-management and control [21]. Thus, a controlling climate of an OBC is based on concertive control and strongly recognized rules and community standards.

### 2.2. Social Capital in OBCs

The term social capital was originally used in community research by sociologists. Then, social media magnified the power of social capital in community life and brought social network into brand communities [4,22]. Social capital is the sum of the potential and actual resources embedded within, and derived from a personal network [23]. Different from financial, physical, and human capital, social capital is developed in the structures of social networks that facilitate inter-person social interactions [24].

Social capital has been studied in different settings, including corporate environments [25], social networks [26,27], brand communities [28], and group identities [29]. The effect of social capital on community members' behavior has been investigated in various online settings, such as knowledge exchange [24], the use of social networking websites [30], community participation [31], and loyalty [32]. However, few studies have tested the relationship between online social capital and community members' relationships.

Social capital includes three sub-categories, namely, structural, cognitive and relational capital [23,33]. Structural capital, which manifests as social interaction ties, is the output of social interactions [24]. Cognitive capital refers to the resources that enable shared representation and interpretation among members, and it manifests as a shared vision and shared language [24,34]. Social capital is an index composed of voluntarism, reciprocity, and trust [35]. On the basis of the above mentioned studies, we choose trust and norms of reciprocity as the two factors that reflect the relational and normative processes of interaction between OBC members.

### 2.3. Brand Community Identification

Brand community identification is the extent to which consumers are associated with a brand community [18], where the consumers perceive themselves being part of a brand community [20]. Studies have shown that consumer identification with a brand community strengthens the brand and its community [36]. While most research works have examined the outcomes of consumer identification, few studied the factors leading to identification [37].

### 3. Hypotheses

#### 3.1. Relational Process: The Role of Perceived Community Trust

Community members usually absorb the advice of strangers to make their decisions in online communities, which magnifies the uncertainties which weaken trust [31]. Chiu et al. [20] define trust as the expectation that community members would obey the values, norms, and principles shared in the community. A controlling climate in an OBC provides a reliable environment for members. Since risks and uncertainties in social networking are partially eliminated in a closely controlled environment, members are more likely to trust each other or the community. Therefore, we propose that perceived community trust can be significantly affected by a controlling climate.

**Hypothesis 1.** *A controlling climate positively influences perceived community trust.*

Community managers are happy to see users providing information, generating content and encouraging each other to participate more [38]. A supportive climate in organizations alleviates the trust problem, which is also common in virtual settings. A supportive climate is also an organizational resource enabling employees to respond

positively after setbacks [39]. In an OBC with a supportive climate, a member incurring a setback with a brand or product will continue to feel supported and attribute problems or mistakes to external issues rather than their own weakness. In other words, members may become optimistic in their attributions, so they may view other members as trustworthy.

**Hypothesis 2.** *A supportive climate positively influences perceived community trust.*

Researchers have emphasized that trust makes members willing to stay in a community longer [40,41]. Research recognizes trust as one of the important antecedents of intellectual capital exchange [23], group performance [42], value creation [43,44], and knowledge sharing in online communities [45]. In this study, community identification is about members' sense of belonging in and positive perception of a community [2,5,46]. Perceived community trust may stimulate members to take initiative and strengthen their sense of belonging and responsibility. Trustful members also tend to perceive the community in a positive way. Therefore,

**Hypothesis 3.** *Perceived community trust positively influences community identification.*

### 3.2. Normative Process: The Role of Perceived Norms of Reciprocity

According to social exchange theory, participants in online communities expect mutual reciprocity to justify their time and efforts spent helping others and sharing knowledge and experience. It has been found that reciprocity leads to knowledge sharing in online communities [20,41]. Reciprocity has been also found positively relating to the use of knowledge repositories among online sharers [47]. Anticipated reciprocal relationships and subjective norms make individuals' willing to share knowledge [17].

OBCs have a unique effect on inter-member interactions and the interests of members compared with offline entities [48]. Group norms have strong effects on group intentions to participate in online communities [3]. Perceived reciprocity, manifested as, for example, favors given and received or a strong sense of fairness, may facilitate knowledge sharing. That is, members will be motivated to contribute more if their efforts invested in knowledge sharing are reciprocated.

In OBCs, members join voluntarily, and they are free to change their experience. Organizational climate is usually built upon a set of norms or rules which provide guidelines for community members. A controlling climate prompts members to understand what is expected of them and what their duties are in OBCs, and it ultimately benefits members with a better environment [14]. Given that norms of reciprocity are among the most important norms that members should follow, we hypothesize that a controlling climate is positively related to perceived norms of reciprocity.

**Hypothesis 4.** *A controlling climate positively influences perceived norms of reciprocity.*

According to social exchange theory, reciprocity evolves over time in an organization, and members who perceive a low level of organizational support may consider leaving the organization [49]. Employees in a supportive organizational climate feel obligated to care about their organization and to assist it in achieving its objectives [50]. Communities provide support to members by offering different forms of inducements, thus creating a climate where members feel obligated to re-pay the community for opportunities and benefits. After benefiting from a community, members feel indebted and thus increase their effort to aid the community.

**Hypothesis 5.** *A supportive climate positively influences perceived norms of reciprocity.*

Trust drives members' participation, contributions and resource sharing in online communities [45]. Interpersonal trust is important for creating an atmosphere of knowledge sharing in teams and organizations [51]. Trust creates and maintains exchange relation-

ships, and therefore leads to high-quality knowledge sharing. When trust exists between members, they are more willing to cooperate with each other [23]. They may prefer aiding those whom they trust. Community members are more likely to provide to and receive benefits from other trustful members. Therefore, we present the following hypothesis:

**Hypothesis 6.** *Perceived community trust positively influences perceived norms of reciprocity.*

In OBCs, members' behaviors are products of their social networks. Through tight social networks and frequent social interactions, individuals enjoy in-depth and efficient mutual knowledge exchange [52]. Consumers' perception of OBCs are strongly shaped by reciprocity which may strengthen their community identification. Members may perceive that they are part of the community when they observe reciprocity in the community. They may also feel attached to the community where they exchange useful information and ideas with other members. Therefore, we present the following hypothesis:

**Hypothesis 7.** *Perceived norms of reciprocity positively influence community identification.*

### 3.3. The Effect of Controlling and Supportive Climates on Community Identification

In OBCs with a controlling climate, inappropriate content (such as swear words, advertisements, or irrelevant information) is prohibited. In other words, a controlling climate can facilitate normal operations of communities, regulate and purify the communication space, and provide a safe and clean environment for communication [13]. Furthermore, it may stimulate members to take initiative and strengthen their sense of belonging and responsibility. In the case of long-term interactions, members may develop a sense of belonging in and positive feelings toward an OBC. Therefore, a controlling climate has a positive impact on members' community identification.

**Hypothesis 8.** *A controlling climate positively influences community identification.*

Employees in a supportive climate have a better chance to fulfill their needs for esteem, approval and affiliation, and they thus value organizational membership [50,53]. This positive experience makes members perceive the community's image, well-being and goals as their own and be emotionally connected to the community. They may therefore incorporate their role status into their social identity [54] and adopt community membership as an important component of their self-identity [5].

**Hypothesis 9.** *A supportive climate positively influences community identification.*

### 3.4. The Moderating Role of Community Age

Over time, inter-member trust in online communities diminishes if key opinion leaders fail to stimulate interaction among members [55]. Online communities, like firms, may experience organizational inertia when they grow older. According to the evolutionary theory of economic change [56,57], organizational inertia is derived from routines that make organizations resistant to change and conservative. Therefore, it is crucial for long-term communities to develop community climates to evolve and sustain active participation and interaction over time. In this process, a supportive climate helps engage members and improves trust, and control is needed to provide a context to maintain trust.

Although organizational inertia creates a conservative atmosphere, it offers stability [58,59]. New online communities in their nascent stage are usually less stable, and building norms would add to their stability [60]. In their study of 19 decision-making groups, Bettenhausen and Murnighan [61] found that norm formation is evolutionary and swift. For example, a group of decision makers aims to make quick agreements on norms when they have similar experiences or compatible ideas or simply when there is a threat within the group [61]. While inter-member trust takes a long time to accumulate in online communities, norms can be developed in a shorter time period. We therefore argue that

both supportive and controlling climates are effective in forming norms of reciprocity in newly established communities.

**Hypothesis 10.** *Both a controlling climate (a) and a supportive climate (b) have stronger effects on trust for long-established communities than for newly established communities.*

**Hypothesis 11.** *Both a controlling climate (a) and a supportive climate (b) have stronger impacts on perceived norms of reciprocity for newly established communities than for long-established communities.*

In the context of OBCs, we develop a conceptual framework to explore community members' responses to a community climate. Figure 1 presents the proposed conceptual framework, which theorizes the role of controlling and supportive climates in community identification and the mediating role of social capital (trust and norms of reciprocity).
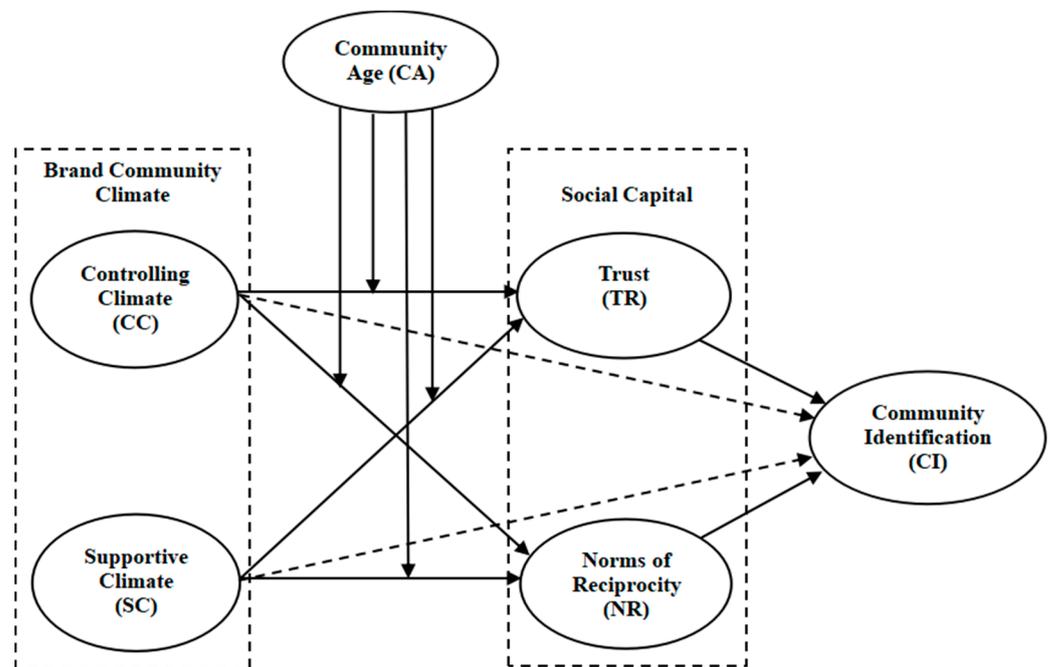


**Figure 1.** Conceptual framework.

## 4. Research Method

Data were collected from So-jump (www.sojump.com acccessed on 1 July 2015), a professional online survey network consisting of 2,600,000 members in China [62,63]. China was selected as the setting of this research because it has a huge e-commerce sector and large number of OBCs and participants. Before the core variables were measured, the subjects were asked to write down the names of the brands and brand communities that they followed and to describe their association with these brand communities. The subjects of this study included only members of brand communities. A total of 946 members submitted their responses, but 465 respondents provided invalid answers. A filtering question was used to identify non-members of OBCs, who were not included in the data analysis. Those giving answers in less than 3 min were not included, as using less than 3 min to answer pages of questions usually indicates careless [64], skimming details [65], and insufficient time spent [66]. Finally, 481 questionnaires were selected for analyses. Industries involved in the test included the mobile phone industry (for example, Apple, Samsung, and Nokia), the automobile industry (for example, Audi, BMW, and Honda), and the clothing industry (for example, Nike, Lining, and ONLY). Table 1 provides the demographic characteristics of the valid sample.

**Table 1.** Demographic characteristics.

| Variable | Frequency | Percentage |
|---|---|---|
| Gender | | |
| Male | 262 | 54.5% |
| Female | 219 | 45.5% |
| Age | | |
| ≤20 | 5 | 1.0% |
| 21–30 | 211 | 43.9% |
| 31–40 | 201 | 41.8% |
| >40 | 64 | 13.3% |
| Income (RMB) | | |
| ≤2000 | 20 | 4.2% |
| 2001–3000 | 36 | 7.5% |
| 3001–5000 | 115 | 23.9% |
| 5001–8000 | 145 | 30.1% |
| 8001–15,000 | 126 | 26.2% |
| >15,000 | 39 | 8.1% |
| Education | | |
| High school or below | 13 | 2.7% |
| Junior college or Undergraduate | 392 | 81.5% |
| Postgraduate or above | 76 | 15.8% |

*Measurement Development*

The measures and their validity assessments are shown in Table 2. Chinese participants often select the neutral point on a five- or seven-point Likert scale [35]; thus, we used a six-point Likert scale ranging from 1 (completely disagree) to 6 (completely agree) [67,68].

We adopted existing measures to capture trust, norms of reciprocity, and brand community identification. A scale was developed for measuring the new construct, *controlling climate*, which indicates that members should develop a powerful sense of functional self-control in OBCs, as Churchill [69] suggested. First, two items based on the literature related to controlling climate [70] and one item based on observations of several brand communities were used to form the scale. Ten marketing professors were invited to provide comments on these items, which provided guidelines for the revision of the scale. After the first author completed the Chinese language translation of the measurements, back translation helped ensure scale accuracy. Items were dropped with factor loading below 0.5 or if there was an item-to-total correlation below 0.4.

*Supportive climate* was measured by adapting Rogg et al.'s [71] measurement scale with seven items. Three items adopted from the literature were used to measure *trust* [34,72]. *Norms of reciprocity* imply actions contingent upon rewarding reactions from other community members and cease when the expected rewarding reactions are not forthcoming, and it was measured by a two-item scale [34]. *Brand community identification* was measured by six items [35,36]. *Community age* was measured by asking respondents to describe their perception of the online brand community's length of history, from very short (coded as 1) to very long (coded as 5).

Four demographic variables were examined and controlled. Respondents were asked to indicate *gender* with two options (male, scored 0; female, scored 1). *Age* was measured by using the age range from 1 (≤20) to 4 (>40). *Education* was assessed by asking education levels from 1 (high school or below) to 3 (postgraduate or above). *Income* was captured by collecting monthly income (before tax) information from respondents (see Table 1).

**Table 2.** Measurement items and validity assessment.

| | Loading | $\alpha$ | CR |
|---|---|---|---|
| Controlling Climate (Litwin and Stringrt 1968) | | | |
| In X brand community, if members abuse others, they will be warned or banned. | 0.781 | 0.759 | 0.861 |
| In X brand community, if members publish false information, they will be warned or banned. | 0.869 | | |
| Supportive Climate (Rogg et al. 2001) | | | |
| In X brand community, members have good communication with each other. | 0.730 | | |
| In X brand community, good suggestions provided by members will be accepted by others. | 0.731 | | |
| In X brand community, the forum admin considers members' suggestions when making decisions. | 0.746 | | |
| In general, the members of X brand community have good relationships. | 0.788 | 0.874 | 0.902 |
| In X brand community, many members would like to help other members. | 0.751 | | |
| Members of X brand community work together to solve problems. | 0.760 | | |
| Members of X brand community trust each other. | 0.774 | | |
| Trust (Pavlou et al. 2004; Mathwich et al. 2008) | | | |
| I would base important decisions on the advice I received from X brand community members. | 0.809 | | |
| Members in X brand community are honest. | 0.868 | 0.815 | 0.890 |
| Members in X brand community have integrity. | 0.886 | | |
| Norms of Reciprocity (Mathwich et al. 2008) | | | |
| When I receive help from X brand community, I feel it is right to give back and help others. | 0.864 | 0.702 | 0.870 |
| Members should return favors when a member in X brand community is in need. | 0.890 | | |
| Community Identification (Zhou et al. 2012; López et al. 2017) | | | |
| When talking about X brand community, I would like to say our community rather than their community. | 0.834 | | |
| I see myself as a part of X brand community. | 0.874 | 0.891 | 0.924 |
| I'm proud of the success of X brand community. | 0.886 | | |
| I feel happy if someone praises X brand community. | 0.878 | | |

Note: CR means composite reliability.

## 5. Data Analysis

The conceptual framework was assessed using the partial least squares techniques with SmartPLS 3.0 and bootstrapping with 5000 samples. PLS is robust against non-normality [73], and can hence maximize the explained variance. Furthermore, SmartPLS 3.0 includes additional analyses such as HTMT [74].

We checked the constructs' reliability and validity (see Table 2). The Cronbach's $\alpha$ levels of these items were all above 0.70 ($\alpha > 0.70$). The composite reliabilities (CR) of all four constructs exceeded 0.86 (CR > 0.70), so measurement items had sufficient reliability. Overall, the model fit indices ($\chi2 = 945.837$, SRMR = 0.058; dULS = 0.637; dG = 0.302; NFI = 0.825) were satisfactory. All average variance extracted (AVE) values were above 0.60 (AVE > 0.50), and the square root of the AVE of each construct exceeded the correlation coefficients between it and the other constructs [75].

The data were self-reported. Thus, the issue of common method bias may exist. First, the results of the Harmon one-factor test [76] indicated that the four extracted factors explained 74.29% of the total variance, and the largest variance explained by an individual factor was 23.15% (EV < 50%). In line with Henseler et al. [74], the heterotrait-monotrait (HTMT) ratio was evaluated. Table 3 shows that the HTMT ratio was less than 0.90. Therefore, common method variance was not a problem in our data [77,78].

**Table 3.** Heterotrait-monotrait ratio (HTMT).

|     | CI    | CC    | NR    | SC    |
| --- | ----- | ----- | ----- | ----- |
| CC  | 0.518 |       |       |       |
| NR  | 0.785 | 0.663 |       |       |
| SC  | 0.751 | 0.579 | 0.808 |       |
| TR  | 0.827 | 0.532 | 0.860 | 0.824 |

Note: CC, controlling climate; SC, supportive climate; CI, community identification; TR, trust; NR, norms of reciprocity.

The structural model predicted 50 percent of the variance in trust (TR), 52 percent of that in norms of reciprocity (NR), and 58 percent of that in community identification (CI). Given that the proportion of variance explained exceeded 10 percent, the model has sufficient predictive power. In addition, none of the control variables exerted a significant effect on the model's endogenous constructs.

*Hypothesis Testing*

Table 4 shows correlation coefficients among the constructs in our conceptual framework. All coefficients were below 0.75. Model 1 is the baseline model including main effects (Table 5). The path analysis showed that the controlling climate (CC) had a significantly positive effect on TR ($\beta = 0.105$, $p < 0.05$) and NR ($\beta = 0.189$, $p < 0.001$), supporting H1 and H4, respectively. Supportive climate (SC) had a significantly positive effect on TR ($\beta = 0.638$, $p < 0.001$), NR ($\beta = 0.290$, $p < 0.001$) and CI ($\beta = 0.253$, $p < 0.001$), supporting H2, H5 and H9, respectively. TR was positively related to NR ($\beta = 0.373$, $p < 0.001$), supporting H6. TR ($\beta = 0.376$, $p < 0.001$) and NR ($\beta = 0.193$, $p < 0.001$) also had a significantly positive effect on CI, supporting H3 and H7, respectively. The effect of CC on CI was not significant, so H8 was not supported.

**Table 4.** Correlations and descriptive statistics of construct measures.

|     | CC      | CI      | NR      | TR      |
| --- | ------- | ------- | ------- | ------- |
| CC  | 0.820 * |         |         |         |
| CI  | 0.430 * | 0.866 * |         |         |
| NR  | 0.491 * | 0.621 * | 0.877 * |         |
| TR  | 0.431 * | 0.708 * | 0.648 * | 0.854 * |
| AVE | 0.672   | 0.750   | 0.769   | 0.730   |

Note: CC, controlling climate; CI, community identification; TR, trust; NR, norms of reciprocity; AVE, average variance extracted; * $p < 0.01$.

Moderating effects were tested with models 2 and 3 (Table 5). The interaction between community age (CA) and CC had a positive and significant effect on TR ($\beta = 0.237$, $p < 0.05$), supporting H10a. The interaction between CA and SC also had a positive and significant effect on TR ($\beta = 0.233$, $p < 0.05$), supporting H10b. However, the interaction between CA and CC did not have a significant effect on NR. The interaction between CA and SC had a negative effect on NR, as hypothesized, and the t-value was close to the 1.96 threshold ($\beta = -0.165$, $p < 0.10$). Therefore, H11a was not supported, and H11b was partially supported.

The mediating effects were assessed using Sobel's test. As shown in Table 6, significant partial mediation effects of TR on the CC-CI, SC-CI, CC-NR and SC-NR relationships existed. NR partially mediated the CC-CI, SC-CI and TR-CI relationships. Therefore, social capital (trust and norms of reciprocity) exerted a partial mediating effect on the relationship between community climate (controlling and supportive) and community identification.

**Table 5.** Structure model path analysis.

| Path | Model 1 | | Model 2 | | Model 3 | |
|---|---|---|---|---|---|---|
| | β | *t*-Statistics | β | *t*-Statistics | β | *t*-Statistics |
| H1 CC → TR | 0.105 * | 2.451 | −0.123 | 1.043 | 0.100 * | 2.354 |
| H2 SC → TR | 0.638 *** | 19.289 | 0.638 *** | 20.508 | 0.419 *** | 4.636 |
| H3 TR → CI | 0.376 *** | 7.905 | 0.376 *** | 7.668 | 0.376 *** | 7.831 |
| H4 CC → NR | 0.189 *** | 4.589 | 0.158 | 1.234 | 0.192 *** | 4.628 |
| H5 SC → NR | 0.290 *** | 5.850 | 0.291 *** | 5.522 | 0.437 *** | 4.669 |
| H6 TR → NR | 0.373 *** | 8.123 | 0.371 *** | 7.287 | 0.382 *** | 8.090 |
| H7 NR → CI | 0.193 *** | 4.162 | 0.193 *** | 4.103 | 0.193 *** | 4.074 |
| H8 CC → CI | 0.042 | 1.167 | 0.042 | 1.146 | 0.069 | 1.126 |
| H9 SC → CI | 0.253 *** | 4.914 | 0.253 *** | 4.990 | 0.253 *** | 4.724 |
| H10a CA × CC → TR | | | 0.237 * | 2.044 | | |
| H10b CA × SC → TR | | | | | 0.233 * | 2.493 |
| H11a CA × CC → NR | | | 0.033 | 0.278 | | |
| H11b CA × SC → NR | | | | | −0.165 | 1.758 |
| CA → TR | 0.066 | 1.853 | 0.057 | 1.582 | 0.069 | 1.895 |
| CA → NR | −0.013 | 0.414 | −0.014 | 0.452 | −0.016 | 0.513 |
| *Control variables* | | | | | | |
| Age → CI | 0.037 | 1.055 | 0.037 | 1.029 | 0.037 | 1.044 |
| Education → CI | −0.022 | 0.615 | −0.022 | 0.649 | −0.022 | 0.631 |
| Gender → CI | −0.021 | 0.705 | −0.021 | 0.708 | −0.021 | 0.702 |
| Income → CI | 0.058 | 1.883 | 0.058 | 1.857 | 0.058 | 1.839 |

Note: CC, controlling climate; SC, supportive climate; TR, trust; NR, norms of reciprocity; CI, community identification; CA, community age; * $p < 0.05$; *** $p < 0.001$.

**Table 6.** Mediation effects.

| IV-M-DV | IV-DV | | | IV-M | | M-DV | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mediated | Non Mediated | Mediation Effect | β | SE | β | SE | Sobel's *t*-Value | Mediation Significant |
| CC-TR-CI | 0.159 | 0.433 | Partial | 0.418 | 0.041 | 0.641 | 0.029 | 9.258 *** | Yes |
| CC-NR-CI | 0.167 | 0.433 | Partial | 0.482 | 0.037 | 0.548 | 0.036 | 9.897 *** | Yes |
| SC-TR-CI | 0.337 | 0.668 | Partial | 0.702 | 0.022 | 0.470 | 0.045 | 9.926 *** | Yes |
| SC-NR-CI | 0.450 | 0.668 | Partial | 0.640 | 0.029 | 0.339 | 0.044 | 7.274 *** | Yes |
| CC-TR-NR | 0.253 | 0.484 | Partial | 0.418 | 0.040 | 0.547 | 0.034 | 8.764 *** | Yes |
| SC-TR-NR | 0.358 | 0.641 | Partial | 0.700 | 0.023 | 0.402 | 0.049 | 7.921 *** | Yes |
| TR-NR-CI | 0.520 | 0.707 | Partial | 0.653 | 0.027 | 0.286 | 0.044 | 6.277 *** | Yes |

Note: CC, controlling climate; SC, supportive climate; CI, community identification; TR, trust; NR, norms of reciprocity; SE, standard error; IV, independent variable; M, mediator; DV, dependent variable; β, beta path coefficient. *** $p < 0.001$.

## 6. Discussion

By drawing from social capital, organizational climate and organizational inertia theories, we proposed a new conceptual framework to obtain greater insights into the OBC climate. Overall, our data support the conceptual framework which depicts the critical role of controlling and supportive climates for promoting community identification in OBCs.

As shown in Figure 1, controlling and supportive climates, trust, norms of reciprocity, and community identification are significantly and positively related. Controlling and supportive climates act as external stimuli that affect members' perceived trust and norms of reciprocity and then drive members to identify with OBCs. Without proper control, a risk exists for members in OBCs [18]. The results provide further evidence that a controlling climate may promote community relationships. The findings suggest that controlling and supportive climates not only contribute to perceived community trust and perceived norms of reciprocity, but also can lead to community identification. Furthermore, social capital (trust and norms of reciprocity) exerts a partial mediating effect on the relationship between the community climate and community identification in OBCs.

While controlling climate has been viewed as a negative management option [14,15], the findings of our study confirm the idea that providing support and executing control are both effective to build trust in long-established communities. However, these two approaches seem to have similar influence on norms of reciprocity for both long-established and new communities, as H9b and H10b were not supported in the findings. The reason could be that norms of reciprocity are not diluted over time, while trust may diminish when OBCs become aged and the platform fails to keep promoting interactions among members [54].

In OBCs, members can join voluntarily, and they are free to change their experience. According to previous research, if an OBC can provide a supportive climate where members freely communicate their feelings and opinions, then members will have a more positive attitude toward the community and thus have a higher level of engagement [77]. According to Chan et al. [79], perceived community value and perceived system support have positive relationships with customer engagement in OBCs. Swear words, advertisements, or irrelevant information may appear without a proper controlling climate. Therefore, controlling OBCs is necessary; however, the type of control needed is different from simple, technological, or bureaucratic control. In OBCs, a powerful sense of self-control is developed among community members based on their common values, and a set of behavioral standards is established for self-management [21]. Therefore, the controlling climate of an OBC is based on concertive control, and it prompts members to understand what is expected of them and what their duties are in the OBC [19].

The results of the data analysis indicate that perceived community trust exerts strong positive impacts on perceived norms of reciprocity. This finding is consistent with the findings of extant studies [20,23,50]. However, in contrast to our proposed hypothesis, some research focuses on the role of norms of reciprocity in building trust, which therefore is critical to social exchange relationship. Chiu et al. [20] found that social interaction ties, norms of reciprocity, and identification indirectly influence knowledge quality through trust. However, in OBCs, members are anonymous, and transient exchange with strangers is often risky [80]. In addition, risks and uncertainties may weaken members' trust. Without perceived community trust, members will neither adopt other people's advice nor share their opinions. Therefore, we proposed and tested the impact of trust on norms of reciprocity in OBCs.

## 7. Conclusions

### 7.1. Theoretical Implications

OBCs promote both customer-brand communication and inter-member online interactions. A controlling climate in OBCs not only affects members' social capital but also influences their relationships within these communities. Thus, the exploration of how a controlling climate influences community relationships in OBCs is an important research issue.

First, the findings contribute to the online community climate literature. OBCs provide a platform for members to share ideas, information and experience. However, research has mainly focused on supportive climates and neglected the effect of controlling climates. Our study examines the impact of controlling climates on community relationships in OBCs. The findings suggest that building and maintaining a controlling climate is an important approach to boost community identification.

Second, we applied concertive control to OBCs, and the findings validate controlling climate as an important factor that influences community relationships. Unlike simple, technological, or bureaucratic control, concertive control is useful for self-managed teams. In OBCs, members join voluntarily, and they are free to change their experience. Therefore, OBCs are self-managed teams, and a powerful sense of self-control develops among community members [21]. The current study thus provides important insights for understanding OBCs.

Thirdly, we identified the boundary conditions of the climate-trust association. Building supportive climate is not effective in boosting trust for all OBCs. Working with supportive climate is effective to make members trust each other particularly for long-established communities. While a recent study on online community leadership suggests that greater management efforts are needed to build inter-member trust [54], our findings indicate that the efforts in controlling member behavior in OBCs are less effective for new communities than for long-established communities.

Finally, we extend the social capital literature in two aspects. First, studies indicate that a supportive climate may promote social capital [77,81]. The empirical results of this study reveal that social capital (trust and norms of reciprocity) exerts a partial mediating effect on the relationship between community climate and community identification in OBCs. Second, studies show that norms of reciprocity have a positive effect on trust [20]. Our findings indicate a different logic that suggests that trust can drive the norms of reciprocity in OBCs.

### 7.2. Managerial Implications

OBCs with many active brand enthusiasts are an efficient channel for providing effective and timely access to product and brand information, and they are valued by a large number of members. The results of our study show that a controlling climate can improve perceived community trust and norms of reciprocity among members, thereby leading to a high level of community identification. Therefore, building and maintaining a controlling climate are important approaches to boost community identification in OBCs.

However, the controlling climate of online communities is different from that of conventional organizations. In most conventional organizations, people are forced to work together, and simple, technological, or bureaucratic control is adopted. OBCs provide a social platform for users to share opinions, information, emotions and experiences [4]. If members perceive too much control over the content and expression, then the level of participation and interaction among members might diminish [79]. Therefore, the controlling climate of an OBC is based on the common values of members, and a set of behavioral standards should be established for self-management [21]. In other words, concertive control should be adopted in OBCs.

Companies or community managers should pay specific attention to stimulating members' emotion in promoting the community [39]. Members would like to share their brand experiences and build close relationships with other members in OBCs. Perceived community trust and reciprocity may strengthen their sense of belonging and responsibility and improve the relationships between members and communities.

### 7.3. Limitations and Further Research

Several limitations pertaining to this study suggest directions for further research. First, the conceptualization of the online community climate is still in its infant stage and has been debated among researchers [20]. Future research could explore or re-test the controlling-supportive climate typology by employing both types of climates at the same time. Second, to accurately capture the association between perceived community trust and norms of reciprocity, a better research design can comprise a time-series analysis across different periods. Future research can employ a longitudinal design to test the causality between trust and norms of reciprocity. Finally, the sample context, which is China, limits the generalizability of this study. Recently, the number of OBCs and members has been increasing around the world. Therefore, future studies can be conducted in other geographic settings to gain insights from cross-culture variations.

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