

INVESTIGATE FACTORS AND MODERATORS OF THE QUASI-COLLECTIVE BEHAVIOR IN VIRTUAL COMMUNITIES

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Abstract

The frequencies of collective behavior are getting higher in virtual communities. Most studies regarding collective behavior on Internet focuses on investigating the behavior per se, and few are addressing the contributing factors and the moderating effects of the community platforms. Even if a swarm of people gathering and interacting on virtual communities, they are just one single person sitting behind their individual computers and using their created identities to act. Spatially, they are not assembled at the same spot; therefore the effect of emotional contagion is restricted. Temporally, they are not concentrated at the same time; as a result they have more time to react. This study thus proposed the concept of Quasi-collective Behavior to denote collective behavior on virtual communities and make distinctions with general collective behavior in physical world. Since people are not gathered at the same physical place, the ambiance of the virtual space is obviously transmitted by the community platforms. This study employs the notion of para-social presence to be the moderator influencing contributors on quasi-collective behavior. We plan to examine the proposed model and expect to gain insights into the quasi-collective behavior and thereby provide practical managerial implications.

Keywords: Collective Behavior, Virtual Community, Para-Social Presence

1 Introduction

As virtual communities flourish, increasing numbers of people are using the Internet to gather and collective behavior performed in swarms is becoming increasingly common. So-called collective behavior is a type of behavioral model referring to the products of crowds of people. Each person thinks and acts based on collective emotions and states of mind; these actions are typically volatile, disorganized, and unpredictable. Collective behavior in virtual worlds can be seen more and more often recently. For example, in a famous audio virtual community, MyAV (<http://www.myav.com.tw>), a person purchased a cheap piece of audio equipment from Yahoo! Auctions and offered it for sale within the community at market price. A member asked this person to provide the source of these goods. The seller claimed that the equipment had been part of the seller's own collection for several years; however, the lie was quickly exposed because the photograph of the equipment showed serial numbers clearly indicating that it was the auctioned unit. The seller's dishonest actions were quickly attacked within the community and all the seller's previous actions in the community were unearthed for discussion. People determined the seller's real-world identity, clearly describing the person's appearance, occupation, and personal information, until there was nowhere to hide. Finally, the seller could no longer bear the situation and withdrew from the community, threatening to sue. In all fairness, the seller did not commit a major offense; in the real world, few people would have noticed the small lie and the problem would have been rapidly forgotten. However, on the interpersonal platform of the virtual community, numerous community members continually magnified the seller's dishonest actions, which immediately became subject to vocal opposition from the entire community. Thus, they uncovered the seller's identity and imposed sanctions; the offense turned into a digital criminal record that could forever be checked by future generations and the person was branded a dishonest seller, who could no longer sell in this community, but only create a new Internet identity and start over.

Most existing studies on virtual communities have investigated only collective behavior and its associated phenomena and have neither thoroughly investigated the causes of collective behavior nor considered the confounding effects within interpersonal platforms. This was the motivation for the current study. In this study, we began with the nature of this kind of behavior because these behaviors include irrational components, using collective behavior theory as the research foundation.

Although contagion theory (Le Bon, 1895) explains the causes of the collective behavior when people gather in the physical world, its applicability to virtual collective behavior, such as that in virtual communities, remains in doubt. Although groups of people gather together to interact within virtual communities, in the real world, they remain individuals sitting in front of computers and using virtual identities and computer mediated communication (CMC) to interact with others using virtual identities. Regarding space, the atmosphere is unlikely to induce contagion effects to people when they are not located within the same physical space. Regarding time, people do not necessarily gather online at the same time; this provides time to engage in rational thinking and avoid momentary impulses. However, groups of people can interact and influence each other at all times, triggering collective behavior. Therefore, we suggest the concept of quasicollective behaviour to discriminate from general collective behaviour in physical world, and define quasicollective behaviour as the collective behavior of swarms in virtual worlds, but people may not spatially and temporally co-existed, and the sense of presence of others is majorly mediated by the interaction platform. Spatially, they are not assembled at the same spot; therefore the effect of emotional contagion is restricted. Temporally, they are not concentrated at the same time; as a result they have more time to react.

Quasicollective Internet behavior is distinct from a group of people physically gathering at the same time; this limits the transmission and contagion of the on-site atmosphere. Therefore, the characteristics of the computer platform should deeply interfere with the degree of emotional contagion. The Media richness and social presence theories were proposed based on previous theories on the characteristics of the computer platform. However, Biocca et al. (2003) argued that in addition to the differing characteristics of media, social presence must consider the feelings that the qualities of social interaction trigger among the involved parties. Therefore, investigations of quasicollective behavior in virtual communities should not be restricted to the characteristics of the computer platform. In addition to emphasizing the interactions between people and community platforms and the interactivity perceived by those using the platforms, studies must consider reliance on platform characteristics to transmit the atmospheres of the virtual spaces, the degree to which users sense these atmospheres, and asynchronous interactions. The concept of parasocial presence developed by Kumar and Benbasat (2002) is more applicable to quasicollective behavior studies than is media richness theory, which is concerned with medium characteristics. Parasocial presence can be applied to diverse environments in addition to organizational environments, such as virtual teams and virtual communities, measuring multiple dimensions. Therefore, we adopted parasocial presence as developed by Kumar and Benbasat (2002) as a confounding factor influencing quasicollective behavior.

Based on the aforementioned background and motivations, the goals of this study were as follows: (a) To investigate how the factors proposed in contagion theory affect nonconfrontational quasicollective behavioral intentions among virtual community members; (b) To investigate the confounding effects of parasocial presence in virtual community platforms on nonconfrontational quasicollective behavioral intentions.

2 Research Model

The American social psychologists Allport and Merton indicated that *The Crowd* by Le Bon (1895) was the most influential collective behavior study. In this book, Le Bon (1895) noted three factors that affect the formation of masses and subsequent collective behavior: anonymity, emotional contagion, and suggestibility. These factors may make crowds become emotional and lose control, and can be assessed when investigating quasicollective behavior in virtual communities. Therefore, we examined

whether these factors of real-world collective behavior were also critical factors for quasicollective behavior in virtual worlds.

In contrast to collective behavior in the physical world, virtual interpersonal platforms deeply influence user immersion, yielding quasicollective behavior because people do not gather in the same location at the same time, but rather use virtual identities to interact. The more interpersonal platforms make users feel immersed or trigger a sense of gathering at the same time and place, the more they should trigger quasicollective behavior. Therefore, we evaluated anonymity, emotional contagion, and suggestibility as the characteristics of interpersonal platforms that confound quasicollective behavior. Numerous studies have investigated theories regarding the characteristics of media, for example, the media richness (Daft & Lengel, 1984), media synchronicity (Dennis et al., 1998), and social presence (Short et al., 1976) theories. However, we determined that parasocial presence as developed by Kumar and Benbasat (2002) was an appropriate confounding variable for use in this study. Parasocial presence differs from social presence theory, which addresses only synchronous communication (Lim & Hung, 2008), also focusing on asynchronous interaction. This is consistent with the characteristics of quasicollective behavior stressed in this study; that is, crowds can use interpersonal platforms to maintain connections when they do not gather at the same time and these connections facilitate quasicollective behavior. Whereas social presence can only be applied to conventional organizational environments, parasocial presence can be applied to diverse environments. This reinforces that numerous interpersonal platforms can generate quasicollective behavior. Thus, previous studies on social presence have investigated virtual teams, providing tasks to perform within organizations. Parasocial presence can also be applied to virtual communities created by those gathering with similar interests or goals. Conventional social presence focuses on two parties using media to interact; however, according to parasocial presence, communication media should be viewed as social entities because communication media are no longer impersonal channels. Therefore, the dimensions measured using parasocial presence are more multidimensional and comprehensive than are those measured using conventional social presence. The argument of Kumar and Benbasat (2002) that communication media are social entities is consistent with the characteristics of quasicollective behavior. Although people gather online, in reality, each person is geographically dispersed and using an interpersonal platform for interaction. People do not interact with real people, but rather create virtual identities and interact with others using virtual identities. Users cannot personally experience the on-site atmosphere. Instead, they determine the atmosphere based on interactions with others on the interpersonal platform.

Parasocial presence refers to the ability of websites to provide a sense of understanding and strengthen interactions with social entities. In this study, we defined parasocial presence as the ability of community platform resources to provide a sense of understanding and strengthen the interactions among the members of virtual communities. Parasocial presence comprises five dimensions: immediacy/intimacy, a sense of understanding, positivity, involvement, and dominance. Dominance is the assessment of a website's persuasiveness. According to Lim and Hung (2008), dominance is typically applicable to e-commerce websites; we determined that this dimension did not apply to the current study and adopted only four dimensions. We also agreed with Lim and Hung (2008) who stated that changing immediacy/intimacy to connection can reflect the ability of a medium to connect people who have similar goals. Thus, connection refers to the degree to which media can foster a sense of community (establishing the sharing of goals and objectives) among participants; this includes providing users with a common vision or interest. Because this concept matched the study environment, we changed immediacy/intimacy to connection. Finally, we presented a research model for general quasicollective behavior (Figure 1); the relevant hypotheses are described in the subsequent questions.

3 Contagion Theory and Quasicollective Behavioral Intentions

Le Bon (1895) indicated that anonymity is the first factor influencing crowd formation, enabling individual people to hide within a mass; this fosters gatherings of people who do not have to take responsibility, constraining individual responsibility until identified. Most members use accounts rather than their true identities to become involved in virtual worlds; this generates a similar degree of anonymity. Anonymity means that people do not have to expose their own names or social backgrounds and can hide their identities, preventing others from detailing their true features (Baltes, 2002). Although the anonymity of the Internet protects information sources, it yields numerous disadvantages. Johnson (2000) examined anonymity in virtual spaces, indicating that anonymity can help users avoid the ethics of social reality or liability problems.

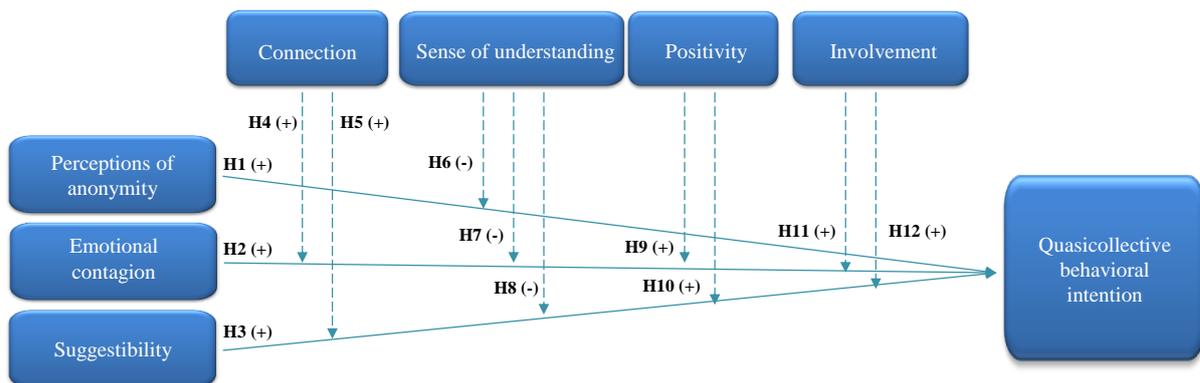


Figure 1. Research model of general quasicollective behavior

In virtual communities, certain actions are relatively unconstrained and lack ethical requirements or accountability. Therefore, the degree of anonymity perceived by members of the virtual community positively influences quasicollective behavioral intentions. Members that perceive that their true identities are unlikely to be recognized on the interactive platform are likely to participate in quasicollective behavior. By contrast, if members feel that their true identities are likely to be recognized on a community platform, they are unlikely to participate in quasicollective behavior. Thus, we propose the following hypothesis:

[H1] Perceptions of anonymity among virtual community members positively influence quasicollective behavioral intentions.

Emotional contagion refers to the contagiousness of emotions and behaviors within a group. When their responsibility awareness is reduced, bystanders are likely to become involved in "social contagion." Furthermore, when people engage in relatively drastic actions, they are likely to influence others to follow suit and perform such behaviors (Le Bon, 1895). Numerous scholars have investigated emotional contagion, confirming that contact with those expressing positive or negative emotions results in similar changes in the emotional states of observers. McHugo et al. (1985) indicated that even when people simply look at a picture of a smile or frown, the expressions on their faces become similar to those in the picture and they demonstrate corresponding physiological and psychological changes; such emotional changes are seen on self-reported emotional questionnaires. Emotional contagion occurs in both one-on-one interpersonal relationships and within groups.

Emotions can be contagious to anyone to various degrees of contagiousness. In virtual communities, if member emotions are susceptible to the influences of others and a certain event causes emotions to run high among members of the community platform, these emotions are likely to be contagious to other members and trigger participation in quasicollective behavior. Behavioral contagion occurs through member interactions. This wave of emotional contagion affects increasingly more members, corre-

spondingly increasing purchase rates. Therefore, in this study, we hypothesize that virtual community members are likely to participate in quasicollective behavior when they are prone to emotional contagion. Thus, we propose the following hypothesis:

[H2] Emotional contagion among virtual community members positively influences quasicollective behavioral intentions.

Suggestibility refers to the pressure to conform generated when a group is in an ambiguous environment and other people express specific beliefs and attitudes. This pressure forces people to accept the instinctual suggestions and ideas offered by others and perform actions consistent with those of others. Consumer behavior studies have indicated that consumers within groups accept the opinions and ideas of others to gain group recognition and meet group expectations; thus, they adopt thoughts or behaviors similar to those of other group members (Macinnis, 1997).

Therefore, all people can have tendencies toward suggestibility and conformity; only the degree of this suggestibility varies. If virtual community members are highly suggestible and often refer to the opinions of others to ensure that they are not making mistakes, when they see others swarm to display collective behavior, they are likely to follow and participate; they may also adopt thoughts or behaviors similar to those of other community members to obtain community recognition and meet community expectations. They fear that other members will think they are not part of the community and reject them if they fail to promptly express their views; thus, they participate in collective behavior, expressing attitudes and behaviors consistent with those of other members. Increased suggestibility among virtual community members should positively influence the intention to participate in quasicollective behavior; thus, we propose the following hypothesis:

[H3] Suggestibility among virtual community members positively influences quasicollective behavioral intentions.

4 Parasocial Presence

Parasocial presence refers to a website's ability to foster a sense of understanding and enhance interactions between social entities. Immediacy/intimacy refers to the psychological distance between two communicating parties and the closeness expressed through interpersonal interaction (Biocca et al., 2003). Rheingold (1993) indicated that using CMC for communication on Internet community platforms reduces the sense of distance between people, facilitating expressions of intimacy and the formation of mutual friendships.

In virtual communities, superior community platforms facilitate smooth communication between members, crossing temporal and spatial barriers, and establishing common visions and goals; these effects are enhanced when increasingly frequent contacts and interactions occur. Members can use each other for coordination and cooperation, obtaining information and knowledge (Igarria et al., 1998) and even building friendships. This narrows the gaps between members and increases their sense of intimacy. When emotional contagion or behavioral suggestions occur, if the community platform narrows the gap between members, promotes rapid emotional contagion, and facilitates herd behavior, it triggers quasicollective behavior. In addition, immediacy and intimacy may make members likely to blindly follow others. We assumed that emotional contagion and suggestibility influenced quasicollective behavioral intentions and that increased connection within the community platform strengthens this influence. Thus, we proposed the following hypotheses:

[H4] The connection within a community platform enhances how emotional contagion affects quasicollective behavioral intentions.

[H5] The connection within a community platform enhances how suggestibility affects quasicollective behavioral intentions.

A sense of understanding refers to the ability of community members to understand and judge the resources they obtain from the virtual community. Media richness refers to the ability to rapidly understand the information presented by media. Communication media that can be used to clarify ambiguity promptly and change understanding are considered rich. If comprehension requires long periods of time, the richness of the medium is relatively low (Daft, Lengel, & Trevino, 1987). Therefore, sense of understanding includes media richness. When media richness is high within a virtual community, members have numerous resources for judgment, enhancing their sense of understanding. Chidambaram (1993) indicated that media fostering an increased social presence provide rich messages. When a medium demonstrates a high social presence, the richness of its information is correspondingly high, and vice versa.

We assumed that most virtual community members engaged in activities alone at their computers in contrast to gatherings in the physical world, where people are likely to influence others. Virtual communities lack the live atmosphere of the physical world and do not require immediate reactions, providing members with time to react. Therefore, virtual community members are more rational compared with members of physical groups. Members can only interact on the community platform, using the provided information as a basis for their behavior. When comprehensive and rich information is available, this reduces information ambiguity, allowing members to make rational judgments and avoid engaging in contagion-induced herd behaviors based on momentary emotions or suggestions. As the focus becomes increasingly personal and members can obtain personal information from the community platform, they perceive that their anonymity has decreased within the virtual community; this decreases the initial probability of perceptions of anonymity promoting quasicollective behavioral intentions among members. We assumed that emotional contagion, perceptions of anonymity, and suggestibility influenced quasicollective behavioral intentions, whereas a sense of understanding in virtual communities weakens these effects. Thus, we propose the following hypotheses:

[H6] Regarding community platforms, a sense of understanding weakens the influence of emotional contagion on quasicollective behavioral intentions.

[H7] Regarding community platforms, a sense of understanding weakens the influence of anonymity on quasicollective behavioral intentions.

[H8] Regarding community platforms, a sense of understanding weakens the influence of suggestibility on quasicollective behavioral intentions.

Positivity refers to positive member emotions directed toward the virtual community. These positive emotions include preference, happiness, and amusement. Vakratsas and Ambler (1999) indicated that positive emotions can create a favorable bias regarding product attitudes. For example, if an individual likes the person sending him or her a message, that person develops a favorable attitude toward the product (Howard & Gengler, 2001). Therefore, positive emotions readily influence behaviors, promoting buying behaviors.

Similarly, when a community platform generates positivity, the members of the virtual community have positive emotions toward the community. When members love everything about their community, they transfer their emotions to the community and other members; they also exhibit positive attitudes toward activities performed within the community and their behaviors and emotions are likely to be influenced by the community. The suggestions and actions of others are also likely to be influential, causing people to join with others and lambast the behavior of the intruder. We assumed that emotional contagion and suggestibility influence quasicollective behavioral intentions and positive attitudes toward the community strengthen these effects. Thus, we propose the following hypotheses:

[H9] Positivity directed toward community platforms strengthens the influence of emotional contagion on quasicollective behavioral intentions

[H10] Positivity directed toward community platforms strengthens the influence of suggestibility on quasicollective behavioral intentions

Zaichkowsky (1985) indicated that involvement is the degree of relevance that people perceive regarding certain subjects based on specific requirements, values, and interests. Verbeke and Vackier (2004) performed an empirical food industry study, determining that involvement influences customer information search behaviors, care attitudes, and behavioral intentions, including consumption frequency and future behaviors.

When a virtual community platform encourages members to continue their involvement in a discussion or activity, others are likely to be emotional contagious to members through continued interaction; thus, members are likely to participate in quasicollective behavior. Similarly, high levels of member involvement can make members feel that the activities are relevant to them and they should participate in this quasicollective behavior. We assumed that emotional contagion and suggestibility influence quasicollective behavioral intentions, and in virtual communities, involvement strengthens these effects. Thus, we proposed the following hypotheses:

[H11] Involvement in community platforms strengthens the influence of emotional contagion on quasicollective behavioral intentions.

[H12] Involvement in community platforms strengthens the influence of suggestibility on quasicollective behavioral intentions.

5 Anticipated Results and Conclusion

To develop the questionnaire, we referenced the emotional contagion scale developed by Doherty et al. (1993), adapted it for the current study, and used it to measure the degree to which the emotions of virtual community members were influenced by the emotions of others. Perceptions of Anonymity was measured by the scale developed by Bates and Cox (2008). The scale of suggestibility developed by Bearden et al. (1989) was adopted to measure the degree to which the behaviors of virtual community members were influenced by others. We referenced the parasocial presence scale developed by Lim and Hung (2008) to measure parasocial presence in virtual communities. The four dimensions of parasocial presence were connection, sense of understanding, positivity, and involvement. We modified the behavioral intentions scale developed by Ajzen (2002) to measure the intentions of virtual community members regarding participation in eight situations of quasicollective behavior. The measurement scale was a 7-point Likert scale on which 1 represented “*strongly disagree*” and 7 represented “*strongly agree*.” The participants stated the degree to which they agreed with each item.

We adopted an Internet questionnaire after developing measurement items. Before distributing the questionnaire, we conducted a pretest on 24 graduate students of information management; the items were subsequently revised to ensure clarity and readability. We also referenced suggestions from three community researchers and one community operator to enhance the content validity of the questionnaire. We distributed the finalized questionnaire to numerous large virtual communities of various types to ensure a broad sample and strengthen the generalizability of the results. They are: an audio virtual community, MyAV (<http://www.myav.com.tw/>); a game community, Bahamut (<http://www.gamer.com.tw/>); a babysitting community, BabyHome (<http://www.babyhome.com.tw/>); a 3C products community, Mobile01 (<http://www.mobile01.com/>). The participants were users who participated in virtual community activities. By analyzing these data through AMOS version 21.0 and SPSS version 21.0, we hope to gain insights into the quasicollective behavior among the virtual community members to elucidate its influences and confounding factors, and thereby provide managerial implications for community managers.

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