

# **Understanding Consumer-to-Consumer Interactions in Virtual Communities: The Salience of Reciprocity**

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## **Abstract**

Virtual communities (VCs) represent popular social environments in which people interact by exchanging resources such as information, ideas, and advice about their common interests. Existing research lacks an explication of why people help others in VCs and how such voluntary behaviors drive subsequent attitudes (VC commitment) and behavioral intentions (online coshopping). This article adopts resource exchange theory to examine how two routes of interactivity (structural vs. experiential) influence reciprocity and affect commitment and coshopping. Using a netnography study and an online survey, the authors confirm the significant effects of structural and experiential routes of interactivity on reciprocity. Reciprocity has critical effects on social system maintenance by enhancing commitment to the community and intention to coshop. The results also identify partially mediated relationships among various variables, which suggest that the effects of the experiential route on VC commitment and coshopping operate partly through reciprocity.

*Keywords:* Virtual community; Reciprocity; Resource exchange theory; Interactivity; Structural route; Experiential route

## **Understanding Consumer-to-Consumer Interactions in Virtual Communities: The Salience of Reciprocity**

### **1. Introduction**

“As MySpace explodes, Tom Anderson struggles to maintain the intimate atmosphere that lends social networks their authenticity. When new users join, Tom becomes their friend and invites them to send him a message...They live online. They buy online. They play online. Their power is growing.” (Hempel and Lehman, *BusinessWeek* 2005)

The Internet, that network of networks, fascinates both businesses and consumers because of its enormous potential for interactions that would be impossible or too costly through traditional media. This superior interactive capability differentiates the Internet from traditional mass media (Hoffman and Novak, 1996; Song and Zinkan, 2008). As Deighton (1996, p.151) notes, interactivity enables the Internet to translate good marketing into good conversation by “putting a more human face on marketplace exchanges without losing the scale of economics of mass marketing.”

Research on interactivity between consumers and firm Web sites is rich (e.g., McMillan and Hwang, 2002; Song and Zinkan, 2008). However, Cova (1997) suggests that consumer interactivity shifts the consumption orientation from the use value of products or services toward a desire to reinforce consumer-to-consumer (or peer-to-peer) bonds through “linking value.” This phenomenon appears particularly salient in virtual communities of consumption (VCs), that is, groups of consumers who continuously interact online because of their shared enthusiasm for and knowledge about specific consumption activities (Kozinets, 1999). The unique interaction patterns of VCs might influence consumers’ commitment to the community and intent to engage in collective actions such as coshopping—when a group of consumers cooperate to purchase at lower costs or for better accessibility (Gao, 2008). These acts ultimately affect firms’ marketing strategies (Mathwick et al., 2008; Schade et al., 2005).

The interactive capability of a VC allows users to communicate, but the norm of reciprocity regulates these online interactions. Researchers regard reciprocity as an extremely important concept when investigating various forms of resource exchanges, suggesting that it “pervades every relation of primitive life” and “forms the basis on which the entire social and ethical life of primitive civilizations presumably rests” (Gouldner, 1960, p. 161). Various studies investigate the role of reciprocity in stimulating proactive sharing and resource exchanges among individuals in social systems (e.g., neighborhoods, organizations) (Burgoon et al., 2002; Gouldner, 1960; Song and Zinkhan, 2008), but researchers haven’t yet considered reciprocity in VCs. As Schade and colleagues (2005) note, reciprocal interactions can help develop a consumer VC by preventing free-riding behaviors that may exploit the resources of the community (Gouldner, 1960). As a ubiquitous moral code imposing a sense of obligation to repay or be grateful for the resources that others provide, reciprocity ensures persistent supportive exchanges (Shumaker and Brownell, 1984). It also encourages resource sharing, voluntary collaboration, and cooperation, which are critical for developing VCs.

Which factors help cultivate reciprocity norms in VCs, and how do reciprocal behaviors influence members’ attitudes (commitment to the community) and consumption behaviors (intent to co-shop)? To answer these questions, this study extends existing research in several ways. First, Foa’s (1971) resource exchange theory is useful for explaining the reasons consumers reciprocate with others in the VCs. This theory describes the pattern of resource exchange between two or more social units. According to Foa, a person’s power to engage in an exchange transaction depends on his or her possession of different types of resources, and a person in a powerful position of offering more resources expects greater reciprocation (Foa and Foa 1974). Interactions in VCs might represent resource exchange activities, such that members can exchange certain types of resources through different routes of interactivity and thereby enhance their capability and motivation to reciprocate. Here, we propose two routes of

interactivity, namely the structural route (i.e., structural-based community features that provide information resources to users) and the experiential route (i.e., social bonds and enjoyment that provide socio-emotional resources to users).

Second, reciprocity may induce two central outcomes: consumers' commitment to the VC and their intent to coshop with others within the VC. This study examines how reciprocity mediates the effects of these two routes of interactivity on VC commitment and coshopping intentions. Third, a netnography study and an online survey of consumers of a VC within a popular Web site in China provide a better understanding of the role of reciprocity in online interactions.

## **2. Conceptual development and hypotheses**

### *2.1. Virtual community of consumptions*

The concept of VCs refers to “social aggregations that emerge from the Internet when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace” (Rheingold, 1993, p.5). Members of VCs establish and maintain social orders (e.g., social norms, identity construction) that make VCs as rich and important as traditional communities (Fox and Roberts, 1999). Although VCs consist of members who might not be consumers, many VCs are implicitly or explicitly structured around consumption and marketing interests (Kozinets, 1999). Research in marketing regards VCs as revolutionary media that offer significant opportunities (Bagozzi and Dholakia, 2006; Muniz and O’Guinn, 2001). Gouldner (1960) suggests reciprocity helps stabilize and develop traditional communities; this study extrapolates that reciprocity should play an equally important role in VCs.

### *2.2. Reciprocating behaviors and resource exchange*

As a moral responsibility in consumer VCs, reciprocity reflects a sense of duty and obligation to both individual members and the community (Muniz and O’Guinn, 2001).

Consumers seek others' advice to solve consumption-related problems. Meanwhile, members reciprocate the support they receive by sharing resources. Reciprocity works as a form of folk belief; those who help others get repaid in the future. Reciprocity therefore offers a mutually gratifying pattern of exchange of various resources (Gouldner, 1960).

This research defines reciprocity as voluntary and discretionary behaviors in terms of giving help to not only those who help the giver but also other members in the VC who need help and who would provide assistance on request. This conceptualization matches previous organizational citizenship behavior and consumer voluntary performance research, which view reciprocity as extra-role behaviors that are not contractual bound and will not receive formal rewards (Rosenbaum and Massiah, 2007). For example, consumers who receive socio-emotional support from other consumers reciprocate by displaying helpful and discretionary behaviors that enhance the organization's service performance and quality (Rosenbaum and Massiah, 2007). The underlying premise of this phenomenon states that recipients of positive actions or resources experience a sense of indebtedness they can reduce only through reciprocation (Dahl et al., 2005).

Although reciprocity is an important norm in consumer VCs, not all members behave the same way when reciprocating. Some consumers demonstrate more reciprocating behaviors, a distinction that resource exchange theory might help explain (Foa and Foa, 1974). In this context, a resource refers to anything that one person can transmit to another. Foa's (1971) resource exchange theory posits that people exchange six types of resources: love (i.e., expressions of affectionate regard, warmth, and comfort), status, information, money, goods, and services. Social interactions, including reciprocating behaviors, reflect processes of receiving and giving various resources. The helper who provides resources, such as information or social support, receives reciprocal expressions of gratitude (love) and admiration (status) from the helped. By extending resource exchange theory to VCs, this

article proposes that consumers' reciprocating behaviors, commitment to the VC, and coshopping represent the means by which consumers express their affectionate and social regard for other members and the community, which provides them with information (i.e., structural benefits) and socio-emotional (i.e., social bonds and individual enjoyment) resources.

However, whether a resource exchange occurs depends on the appropriateness of the environment and the exchangers' capability and motivation to give and receive (Foa and Foa, 1974). In this sense, VCs allow consumers to interact and enable convenient and efficient resource exchanges (Mathwick et al., 2008). As Foa (1971) proposes, social systems facilitate the exchange of various types of resources by matching available resources with needs. Therefore, VCs satisfy the first condition for resource exchanges. The second condition depends on the amount of resources one possesses. Because consumers may receive two types of resources from the community—information (structural-based features) and socio-emotional (social bonds and enjoyment)—the amount and strength of resources they gain serve as reservoirs that motivate consumers to withdraw resources when they are in need. The richer the resources, the more likely consumers are to reciprocate (Foa and Foa, 1974). Figure 1 depicts the proposed model.

Figure 1 about here

### 2.3. *What drives reciprocating behaviors?*

*Structural route of interactivity.* Key interactivity theories (e.g., telepresence) identify the structure of the media (e.g., Web sites) as a critical contributor to the capability to interact (Hausman and Siekpe 2009; Song and Zinkhan, 2008). Structural properties such as informativeness (content richness, information accessibility) or navigatability (speedy search) are critical for Web site evaluations (Chen and Wells, 1999). In this study, the structural route of interactivity refers to the structural-based features of the message board displayed in a VC,

specifically, the convenience of the information search engine, the efficiency of posting updates, the organization of the archive, and the reliability of censorship. These features reflect the central components of the VC structure that help generate efficient, useful, and rich information resources for consumers and thus motivate them to engage in reciprocal interactions (Burgoon et al., 2002). Daft and Lengel (1984) explain that rich media provide multiple cues and facilitate rapid feedback, which enable the exchange of sufficient information. Therefore, consumers' capability to reciprocate increases when they interact with a VC with efficient structure-based features.

H1: The extent of structural-based features of interactivity in the community positively influences consumers' reciprocating behaviors.

*Experiential route of interactivity.* The social bonds that VC members establish with others and the individual enjoyment represent consumers' experiences through online interactions. As Wikstrom and colleagues (2002) propose, consumers need social space in which they can fulfill feelings of closeness, security, and fun through social interactions. Online interactions offer intimate social support (Rheingold, 1993) that facilitates problem solving and offers camaraderie (Mathwick et al., 2008). Relationship building in turn creates social capital in VCs that consumers can retrieve when they need help (Mathwick et al., 2008). Rosenbaum and Massiah (2007) also suggest that consumers who receive social support exhibit reciprocating behaviors to demonstrate their appreciation. Similarly, Wasko and Faraj (2005) show that people with high network centrality (strong social ties) contribute more to the development of VCs by helping other members, such as sharing knowledge with them.

Individual enjoyment of a VC also affects reciprocating intentions. According to Webster and Martocchio (1992), enjoyment (which they call playfulness) involves a subjective interaction experience such as pleasure and involvement with the computer. Enjoyment also marks an important emotional component of the flow experience that determines engagement



(Hoffman and Novak, 1996). Bagozzi and Dholakia (2006) show that positive emotions of delight and happiness significantly enhance people's desire to participate in a VC, and the technology acceptance model demonstrates that enjoyment is a critical intrinsic benefit that strengthens users' positive attitudes toward using computer technology (Koufaris, 2002). Finally, Wasko and Faraj (2005) show that people experience enjoyment from a network are more likely to contribute resources to that network.

In summary, consumers who gain resources (the social support and enjoyment) through the experiential route of online interactions are more likely to reciprocate.

H2: The strength of social bonds that consumers establish in the community positively influences the consumers' reciprocating behaviors.

H3: The extent of individual enjoyment that consumers experience in the community positively influences the consumers' reciprocating behaviors.

#### *2.4. Outcomes of reciprocating behaviors*

Reciprocity helps sustain supportive relationships and collective actions (Shumaker and Brownell, 1984). Consumers' reciprocating behaviors in a VC therefore should affect their attitudes toward the VC and behavioral intentions to coshop with others in the community.

*VC commitment.* Reciprocity can initiate social interactions and stabilize social systems. This power derives from three different elements of reciprocity (Gouldner, 1960; Mathwick et al., 2008). The first element pertains to folk beliefs about the consequences of helping or not helping those who provided help before. This belief provides a fundamental basis for trust that initiates and facilitates continuing online interactions (Mathwick et al., 2008). The second element entails the mutually contingent exchange of resources (Gouldner, 1960), such that the resources one give and receive are not exactly the same but vary according to the different needs of the parties. In a consumer VC, ongoing online interactions and enrichment of the resources stabilize the community by keeping consumers socially indebted to others and the

community (Gouldner, 1960). This indebtedness further increases consumers' involvement in and commitment to the community. Finally, the third element pertains to the value dimension of reciprocity, a generalized moral norm that states people should reciprocate by repaying not only those who provide direct help but also the community itself (Muniz and O'Guinn, 2001). Dholakia and colleagues (2004) find that group norms significantly enhance the "we-intentions" to engage in a community. As a salient group norm, reciprocity conveys a sense of responsibility to help others and a desire to maintain the relationship over time, which should affect consumers' intentions to commit to the VC. As Mathwick and colleagues (2008) suggest, reciprocity, as a form of social capital, significantly increases the perceived information value of the community, which increases VC commitment. Thus, both the initiating and the stabilizing impacts of reciprocating behaviors imply greater commitment to the VC.

H4: The extent of reciprocating behaviors positively influences consumers' commitment to the VC.

*Coshopping.* The impact of consumers' reciprocal interactions on consumption behaviors remains largely absent from research (Schade et al., 2005), but reciprocity should provide community members with a stable and safe social context (Wikstrom et al. 2002) in which they exchange resources and shop together. Schade and colleagues (2005) suggest that reciprocal interactions in VCs may lead to the coordination and cooperation of purchasing—that is, coshopping (Gao, 2008). Coshopping refers to a consumer group who coordinates to purchase together in larger quantities at lower costs or collaborates to access certain products, which they purchase for those who lack such access because of regional or membership constraints. Coshopping usually requires participating consumers to disclose their identity and some private information, and mutual dependences and involvement may serve as prerequisites for joining (Gao, 2008). Reciprocating behaviors, as indicators of a willingness

to help others and commitment to relationship building, might increase the likelihood of coshopping. Moreover, reciprocating ideas and information sharing should increase understanding and reduce the risk and uncertainty of each purchase, which further encourage coshopping (Burgoon et al., 2002; Mangleburg et al., 2004). Wikstrom and colleagues (2002) note that consumers try to emulate others and receive inspiration for how to act, what to choose, and which new items to try. Fellow community members thus offer credible sources of information (Nelson and Otnes, 2005) and motivate others to coshop.

H5: The extent of reciprocating behaviors positively influences consumers' intention to coshop with others in the community.

Hypotheses 1–5 link the direct effects of the two routes of interactivity to reciprocity, which affects the outcomes of VC commitment and coshopping. Implicitly, this discussion suggests a mediating role of reciprocity. That is, structural-based features of the community, social bonds, and enjoyment provide the basic elements of commitment toward the VC and online coshopping intentions, but users who gain both information and socio-emotional resources from the two routes should be more capable to reciprocate to sustain their commitment and coshopping intentions. As Nelson and Otnes (2005) note in their netnography study, online social connections initiate helping behaviors and feelings of moral obligation to help, which sustain commitments to the community. Thus,

H6: Reciprocity mediates the effects of the structural and experiential routes of interactivity on VC commitment and coshopping intentions.

### **3. Methodology**

#### *3.1. Exploratory qualitative study: Netnographical study*

For exploratory purposes, the netnographical study offers an initial step toward gaining a preliminary understanding of reciprocating practices in VCs. Netnography is a qualitative method that adapts ethnography to the Internet environment using publicly available

information from online message boards (Fox and Roberts, 1999; Kozinets, 1999, 2002; Nelson and Otnes, 2005). The approach is of particular use for identifying the symbolism, meanings, and consumption patterns of online consumer groups (Kozinets, 2002).

Kozinets (2002) develop procedures for conducting netnographies, which include appropriate online communities and threads (i.e., strings of interrelated messages) selection, data collection and analysis, trustworthy interpretations, ethical research guidelines, and member checks. Following his guidelines, the authors have observed the VCs of a popular Chinese women's Web site, *www.onlylady.com* (OL), since January 2004. The cosmetic message board of OL serves as the research context because beauty product is the product category that advertisers heavily promote in China (CTR Market Research, 2005). Moreover, consumers confront with great varieties of products and brands and a high volume of marketer-induced information with few intrinsic quality cues. Thus, consumer-generated information and consumer-to-consumer interactions are more significant.

Over the course of 18 months, the authors read postings on the message board to become familiar with the norms and culture, which fulfill Kozinets's (2002) suggestion of making a cultural entrée to learn as much as possible about a VC. Most meaningful and useful postings remain as archives of the message board, so members can easily trace prior postings through the search engine. This research focuses on observations obtained from threads that online users posted between September 2004 and January 2005.

In support of the goal of "purposive sampling" in market-oriented ethnography, the threads are rich in content and descriptiveness and attract considerable participation from different members in the community (Kozinets, 2002). The research effort also follows grounded theory (Glaser and Strauss, 1967) to compare, integrate, and saturate the themes related to the drivers, practices, and consequences of reciprocity. This process continues until few modifications remain. The two authors interpret the selected postings in turn until they

reach a consistent interpretation of reciprocating behaviors. The interpretive process reduces the number of qualified threads to 23, and the longest thread, which contains 309 postings, received 15,176 clicks. Member checks ensure trustworthy interpretations. Observations from the netnography study provide evidence of reciprocal practices, relevant drivers, and outcomes for this site.

*Reciprocal practices in VCs.* Members of the OL cosmetic message board include students, working women, and full-time housewives, ranging in age from 18 to 35 years. On the message board, consumers introduce themselves and exchange information about beauty products. Their reciprocating behaviors include giving and receiving information and social support to and from other members. For example, in a thread entitled “A summary of products that I used in 2004,” the author reveals her willingness to help and share her consumption experiences with others:

“As long as JieMei [“my sisters” in Chinese] request it, I will try my best to recall my previous consumption experiences, to answer your questions, and to share my opinions and feelings about the products I used”(December 30,2004).

This thread leader then classified all products she used, took photos, explained where she bought the items, and provided price information and detailed comments about each product. The time records of her thread show that she spent more than three hours uploading information she thought would be helpful for others.

In a trajectory, newcomers to the VC initially act as lurkers (i.e., browse without reciprocating), gradually learn from experienced members’ participation, and then internalize the reciprocity norm in their interactive communications. The thread entitled, “The display of my trophies and what I have learned...,” clearly demonstrates how a newcomer becomes an insider (with strong consumption and social ties; see Kozinets,1999) and begins to reciprocate. She writes,

“I have been here for almost a year. During this period, I have accumulated some product knowledge and

now I would like to share what I have learnt with you. It is the first time I have posted here. Your comments will be much appreciated. Let's share our opinions.”(January 11,2005)

Recipients often provide replies that express their appreciation and socio-emotional support, as follows:

“Hey, you did a great job. Let me push your thread to the top of the list”(January 1,2005).

“I really want to give you a hug; you have shared so much important information, and took so many great photos.”(December 30,2004).

The interactions among members thus generate resources in the form of informational and socio-emotional support, which in turn motivate reciprocation. Such reciprocating practices subsequently strengthen commitment to the VCs, as the following posting demonstrates:

“I joined this board 6 years ago. I have met so many nice JieMei and learnt a lot. From being a naive girl to becoming an office lady now, I received a lot of valuable advice from this community for each important stage of my life, such as falling in love with someone, getting married, and being pregnant. Where can I find closer and more considerate friends on boards other than this one? Even though I am now pregnant and can go online for less than half an hour a day, I still come and take a look every day”(April 28,2008).

Reciprocal sharing of consumption experiences also motivates consumers to shop together, particularly when they read some persuasive thread:

“I read the thread posted by [X]. I am so inspired by her experience that I want to buy this product immediately! Does anyone feel the same way as I do? I am now attaching her thread. Please take a look. Let's buy this product together to get bigger discounts.”(April 15,2008)

Within three days, 25 instant replies indicated intentions to coshop together.

In summary, this exploratory observation provides a preliminary understanding of the practice, potential drivers, and impacts of reciprocity. An online survey with consumers from the same community helps validate these observations.

### 3.2. Quantitative online survey

The beauty product message board achieves the highest traffic volume and posting rate

on the OL site; 63% of people who logged on to OL visited this message board. By May 2008, 54,607 threads appeared, far more than the average 13,346 threads that appeared on the other OL message boards. Therefore, the beauty product message board meets Witmer and colleagues' (1999) appropriateness criteria for conducting an Internet survey.

Both the forum master and the Web site manager provide permission to conduct the survey. The invitation to participate in the survey appeared as a thread, with a hyperlink to the questionnaire. The posting remains available for a week in August 2005. As a token of appreciation for their participation, members receive a fashion magazine (US\$3) and the chance to enter a lottery to win a cosmetics kit (US\$3–80). A total of 1,384 persons clicked the link, and 1,100 completed the survey. The final sample consists of 899 usable responses.

*Sample characteristics.* Among the 899 respondents, 86.4% belongs to the VC for at least six months, 96.8% visits the VC at least once a week, and 34.1% of the respondents post or reply to the threads at least once a week. A comparison of the sample demographics with known population data about Internet users in China (CNNIC, 2005) reveals that the study respondents are relatively young with higher levels of education and income. These differences are reasonable, because the sample represents a VC of consumers discussing beauty products, a relatively high expenditure segment in China.

*Model constructs.* The questionnaire, written in Chinese, underwent professional translation through back-translation to ensure conceptual equivalence. All measures use five-point Likert scales (1=strongly disagree; 5=strongly agree). Most measures come from existing scales, adapted to fit the study context, with two exceptions. First, the construct of structural-based features of interactivity represents an indicator of the efficiency, navigability, and organization of the message board (Palmer, 2002). The assessment focuses on consumers' attitudes about the convenience of the information search, usefulness of the recent update section, organization of the archive, and reliability of any censorship (Danaher et al., 2006).

Second, the coshopping measure relies on Gao (2008), Rezabakhsh and colleagues (2006), and Mangleburg and colleagues (2004) as the basis for assessing consumers' intentions to shop with other members or ask for others' help when purchasing products. The Appendix contains the measurement details.

## **4. Results**

### *4.1. Validation of measures*

As an assessment of construct validity, an exploratory factor analysis of all constructs achieves the theoretically expected factor solutions. Using LISREL to run confirmatory factor analyses to assess the scale validity shows that the model provides a satisfactory fit to the data ( $\chi^2_{(173)}=274.81$ , goodness-of-fit index[GFI]=.92, confirmatory fit index[CFI]=.97, root mean squared error of approximation[RMSEA]=.046). The composite reliabilities are greater than .75, and all variance extracted estimates are greater than .50 (except structure-based features=.46) (Fornell and Larcker, 1981). The significant path estimates between the measurement items and their respective latent constructs support convergent validity (Anderson and Gerbing, 1988). All constructs meet Fornell and Larcker's (1981) criterion, which requires that the shared variances between all possible pairs of constructs be lower than the average variance extracted for the individual constructs, in support of discriminant validity. In summary, all measures possess adequate reliability and validity.

### *4.2. Hypotheses testing*

The tests of the hypotheses employ structural equation modeling with maximum likelihood estimation. After the test of the indirect (or full mediation) model, the analysis compares this model with a saturated (or partial mediation) model to determine the extent of the mediating effect of reciprocity.

*Drivers of reciprocating behaviors.* As Table 1 reveals, both structural and experiential routes of interactivity significantly enhance reciprocating behaviors. Consistent with the



hypotheses, the extent of structural-based features of interactivity directly influences reciprocating behaviors ( $\beta=.16, p<.05$ ). Moreover, experiencing social bonds and enjoyment within the community positively affect members' intention to display and receive helping behaviors (social bond: $\beta=.19, p<.001$ ; enjoyment: $\beta=.34, p<.001$ ). The results support H1–H3. Moreover, enjoyment exerts a greater impact on reciprocating behaviors than does the more widely examined structural route ( $\chi^2_{diff} = 3.00, df=1, p<.10$ ). These effects also receive support in the saturated model, which estimates the direct effects of the two routes on VC commitment and coshopping.

*Outcomes of reciprocating behaviors.* The results confirm the significant and positive effects of the outcomes of reciprocating behaviors on VC commitment ( $\beta=.15, p<.001$ ) and coshopping intentions ( $\beta=.25, p<.001$ ). Again, all effects remain significant in the saturated model, in support of H4 and H5.

*Mediating role of reciprocating behaviors.* To examine the extent of the mediating effect of reciprocity, this study first compares the indirect model with the saturated model. As Table 1 shows, the saturated model (i.e., partial mediation) fits the data better than does the indirect model, which specifies indirect effects only (i.e., full mediation) ( $\chi^2_{diff} = 120.96, p<.001$ ), in support of the partially mediated role of reciprocity. According to Baron and Kenny's (1986) regression-based mediation test, reciprocity partially mediates the effects of the experiential route (social bonds and enjoyment) of interactivity on VC commitment and coshopping intentions, but no mediation appears for the effects of the structural route. The nonsignificant indirect and total effects of the structural route on VC commitment and coshopping also confirm this finding. Thus, H6 receives partial support.

Table 1 about here

## 5. Conclusion and discussion

Research pertaining to the processes and impacts of online interactions in VCs continues

to grow. However, relatively little attention centers on the norm of reciprocity and its criticality for the development of a community. This study attempts to clarify why members reciprocate in VCs and how such discretionary behaviors affect their subsequent commitment to the community and their behavioral intentions to coshop online.

Resource exchange theory provides a basis for advancing existing knowledge about the role of reciprocity in consumer-to-consumer interactions in VCs. The resulting theoretical framework posits that informational and socio-emotional resources that consumers accumulate through structural and experiential routes of interactions enable them to help and receive help from others in the community. These reciprocating behaviors result in attitudinal (i.e., commitment to the community) and behavioral (i.e., coshopping) changes.

An exploratory netnographical study and an online survey of consumers from the same VC validate the proposed model, and the results provide qualified support for our hypotheses. First, structural-based interactivity helps facilitate the norm of reciprocity. Second, the stronger the social ties and the more enjoyment he or she experiences in online interactions, the more likely a member is to display reciprocal behaviors. Users' individual enjoyment acts as a much stronger predictor of reciprocity than does the structural-based features of the community. Regarding the direct effects of the two routes of interactivity on the central outcomes of reciprocity, the effect of experiential route is comparatively stronger than that of structural route (VC commitment: structural route < social bond:  $\chi^2_{\text{diff}} = 4.64, p < .05$ ; structural route < enjoyment:  $\chi^2_{\text{diff}} = 34.81, p < .001$ ; coshopping: structural route < social bond:  $\chi^2_{\text{diff}} = 3.26, p < .10$ ; structural route < enjoyment:  $\chi^2_{\text{diff}} = 1.73, p > .10$ ). The effect of enjoyment, an emotional component of experience, dominates the effect of the structural route. A plausible explanation for such findings lies in the nature of the consumer-to-consumer VCs. Unlike previous studies on consumer–Web interfaces, this study investigates the context of individual online interaction experiences. Individual sharing, discussion, and interactions help facilitate the

experience of positive feelings and fun (Nelson and Otnes, 2005). Therefore, this dominant effect may overshadow the effect of technical (or utilitarian) aspect of structural route.

The structural route of interactivity exerts a significant direct effect on reciprocity, but no effects emerge for VC commitment and coshopping. This result shows that online consumers are not purely utilitarian, valuing only the efficiency and richness of the Web sites, but rather value hedonic social relationships and enjoyment in determining engagements in the VC and coshopping behaviors (Kim, 2002; Koufaris, 2002). Web site features may be mere tools for consumers to share knowledge and display discretionary behaviors to help facilitate the norm of reciprocity. To pursue commitment and coshopping behaviors, firms should allocate more resources to provide socio-emotional support among customers.

Although the overall fit of the indirect (full mediation) model is acceptable, the nested model comparison test and the regression-based mediation test reveal a better fit for the saturated (partial mediation) model. These findings suggest that the effects of the experiential route (social bonds and enjoyment) on VC commitment and coshopping operate partially through reciprocating behaviors. Such a partially mediating effect may not appear surprising; prior studies indicate that online shopping enjoyment can be an important determinant of customer loyalty, and enjoyment experienced online can increase a user's exploratory behavior in a Web store, leading to greater purchases (Eighmey and McCord, 1998; Koufaris, 2002). Thus, some effects of experiential routes flow directly to VC commitment and coshopping intentions.

From a managerial perspective, these findings imply that firms can leverage the power of their VCs by not only offering more structural interactivity but also creating experiential interactivity that enhances consumers' engagement. For example, Web sites such as the Second Life virtual world create enormous fun for "Residents" by offering an advanced form

of social networking services that allow consumers to explore, socialize, create and trade which attracts millions of Residents from around the world.

Moreover, the strong effect of social bonds reveals that people who connect to more others likely sustain their contributions to VCs through reciprocal interactions and coshop with others. To maintain critical mass, managers should target those people with the highest network value, such as e-flunetials in the VC who represent reliable sources of information for consumers. As this study shows, the experiential route of interactivity and reciprocating behaviors significantly affect consumers' coshopping intentions. That is, consumers who establish strong social ties, experience fun, and exhibit reciprocity likely collaborate with other consumers to purchase online. Marketers should explore technological infrastructures and efficient software programs that might filter and monitor user-generated content online. For example, McDonald recently revises its marketing mix by exploring blogs, forums, and other consumer-generated content.

The study also contains several limitations. First, the research examines a single VC with only female, Chinese members. Prior studies suggest that people of different genders and cultures may differ in their information processing and communication patterns (Gefen and Straub, 1997; Teng and Laroche, 2007). These characteristics may limit the generalization of the results, and further studies should examine whether similar patterns of online behaviors occur in VCs with different gender compositions and cultural backgrounds. Second, using the resource exchange theory as a guiding principle, this study posits the direct effects of two routes of interactivity on reciprocity, VC commitment, and coshopping as resource exchanges. However, the actual causality among the study variables requires further research. Third, research should investigate whether the tendency to reciprocate is a solid personal trait variable, similar to extraversion or risk aversion.

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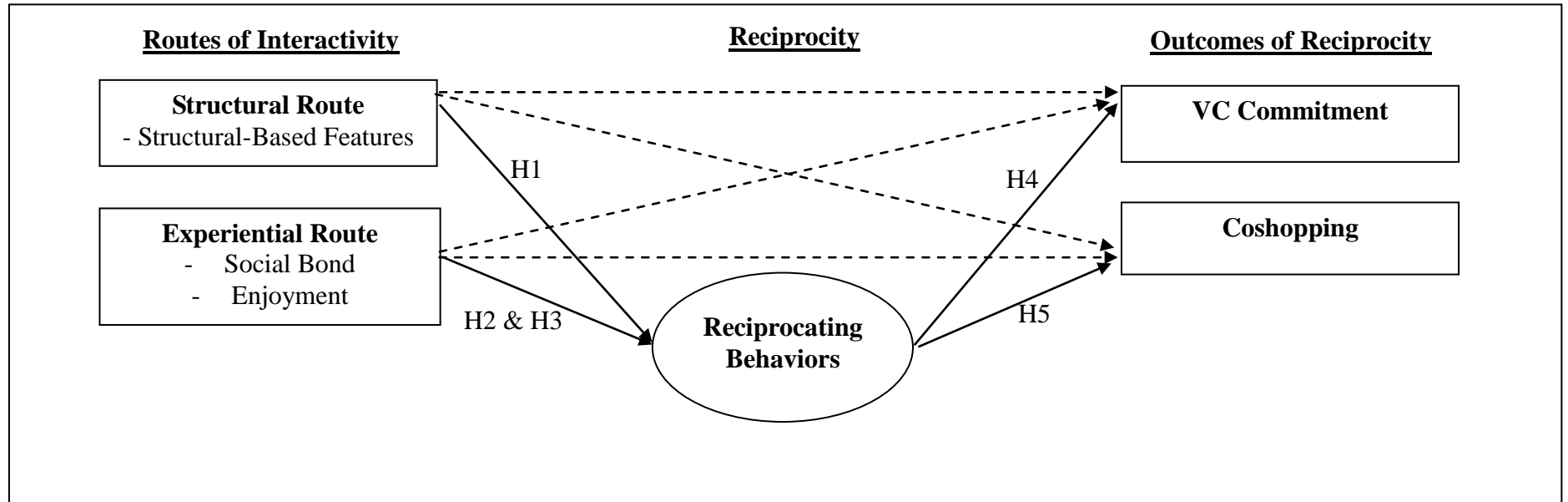
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Figure 1  
Conceptual Framework



Note: The saturated (partial mediation) model provides the estimates of the dotted lines that represent the direct effects of the structural and experiential routes on VC commitment and coshopping.

Table 1  
Standardized Structural Equation Parameter

<b>Hypothesized Paths</b>	<b>Indirect Model/Full Mediation</b>		<b>Saturated Model/ Partial Mediation<sup>†</sup></b>	
	<i>Parameter Estimates</i>	<i>Supported</i>	<i>Parameter Estimates</i>	<i>Supported</i>
<b><i>Structural Route</i></b>				
Structural-based features → Reciprocating behaviors(H1)	.16**	Yes	.16**	Yes
Structural-based features → VC commitment	-----	-----	.04	-----
Structural-based features → Coshopping	-----	-----	-.09	-----
<b><i>Experiential Route</i></b>				
Social bond → Reciprocating behaviors(H2)	.19***	Yes	.18**	Yes
Social bond → VC commitment	-----	-----	.13**	-----
Social bond → Coshopping	-----	-----	.13*	-----
Enjoyment → Reciprocating behaviors(H3)	.34***	Yes	.30***	Yes
Enjoyment → VC commitment	-----	-----	.58***	-----
Enjoyment → Coshopping	-----	-----	.17**	-----
<b><i>Outcomes of Reciprocating Behaviors</i></b>				
Reciprocating behaviors → VC commitment(H4)	.49***	Yes	.14**	Yes
Reciprocating behaviors → Coshopping(H5)	.25***	Yes	.14*	Yes
<b><u>Nested Model Comparison of Mediation Test</u></b>				
$\chi^2_{(df)}$	397.82 <sub>(180)</sub>		276.86 <sub>(174)</sub>	
GFI	0.88		0.92	
CFI	0.93		0.97	
RMSEA	0.07		0.05	
Comparison( $\chi^2_{\text{difference}}$ )	120.96 <sub>(df = 6)</sub> , $p < .001$ , Retain Saturated Model(Partial Mediation).			

\*\*\* $p < .001$ , \*\*  $p < .05$ , and \* $p < .10$ (two-tailed)

<sup>†</sup> H6 receives support for the experiential route of interactivity but not the effect of the structural route on VC commitment and coshopping.

## Appendix

## Measurement Items and Validity Assessment

<b>Structural-Based Features:</b> CR=.77;AVE=.46;HSV=.14		<b>SFL</b>
Danaher et al.(2006),Palmer (2002)		
The OL cosmetic message board archive is useful for collecting threads that contain rich and concise information.		0.78
The censoring of postings on the OL cosmetic message board helps maintain its high quality.		0.70
The OL cosmetic message board provides convenient information searches.		0.67
The OL cosmetic message board provides efficient updates about hot threads.		0.55
<b>Social Bond:</b> CR=.84;AVE=.65;HSV=.18		
Burgoon et al.(2002),Wasko and Faraj(2005)		
I have strong social ties with other members on this message board.		0.90
I have gotten to know more friends on this message board.		0.91
My participation in this message board is important to other members.		0.56
<b>Enjoyment:</b> CR=.90;AVE=.75;HSV=.49		
Mangleburg et al.(2004),Webster and Martocchio(1992)		
I enjoy browsing and/or participating in this message board.		0.77
Browsing and/or participating in this message board enriches my life.		0.93
Overall, I enjoy browsing and/or participating in this message board.		0.89
<b>Reciprocating Behaviors:</b> CR=.86;AVE=.60;HSV=.17		
Schade et al.(2005),Wasko and Faraj(2005)		
I am willing to help and share information with other users on this message board who are in need.		0.78
When other members need my help, I am willing to assist them, even if it may cost me time and effort.		0.84
When I post a request for help, I think other members will help me.		0.71
Although a member that I had helped may not necessary help me in the future, other members would help me.		0.77
<b>VC Commitment:</b> CR =.90;AVE=.70;HSV=.49		
Wasko and Faraj(2005)		
I would feel a loss if this message board was no longer available.		0.74
If I didn't access this message board for a few days, I would spare some time to browse it once I got a chance to access the Internet.		0.79
I am a loyal member who supports this message board strongly.		0.91
I care about the fate of this message board.		0.90
<b>Coshopping:</b> CR =.85;AVE=.65;HSV=.07		
Gao (2008),Mangleburg et al.(2004),Rezabakhsh et al.(2006)		
I make more purchases with other users on this message board than I did before.		0.76
I make purchases by asking other users on this message board to help me purchase products that I cannot access or buy on my own.		0.91
I engage in more online purchases than before.		0.74
<b>Model fit:</b> $\chi^2_{(173)}=274.81, p < .001; GFI=.92, CFI=.97, RMSEA=.05$		
Notes:CR=composite reliability,AVE=average variance extracted,HSV=highest shared variance with other constructs,and SFL=standardized factor loadings.		