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Emotional Support, Perceived Corporate Ownership and Skepticism toward Out-groups in Virtual Communities

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ABSTRACT

Consumers often look to virtual communities for knowledge and support in overcoming the challenges they face. This article examines the role of emotional support in virtual communities that help participants to cope with personal challenges such as healthcare, financial or legal matters. It examines the potential for peer to peer emotional support experienced in virtual communities to generate skepticism toward related out-groups such as doctors and drug companies. It also examines the degree to which corporate ownership of the virtual community reduces the degree to which emotional support generates skepticism toward out-groups. Guided by predictions of social identity theory, we use data from 270 regular participants in healthcare virtual communities to show that emotional support does generate skepticism toward out-groups. However, we find that this effect is reversed when the virtual community is reported by participants to be corporate owned. We offer guidance to public policy makers on the potential negative consequences of skepticism and we provide advice to managers on how to counter skepticism and improve community stickiness.

Keywords: participation, virtual community, emotional support, skepticism, overall satisfaction

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Introduction

Peer to peer virtual communities (VC) are among the most visited destinations online and have become an important source of influence in consumer purchase decisions. For example, a *PR Newswire* press release (February 21, 2013) reports that WebMD's traffic averaged 117.4 million unique visitors per month during the fourth quarter of 2012 representing a 28% increase over the same period a year earlier (*PR Newswire* 2013). On their own volition, consumers visit these websites regularly perusing articles and discussion threads within topic related communities. Some consumers become active participants posting questions and responding to the requests of fellow consumers. Despite continuing concerns about the quality and credibility of VC user generated content, public interest has remained robust.

Studies of consumption communities have tended to focus on brand enthusiasm (Muniz and O'Guinn 2001), hobbyists and social chatter (Algesheimer, Dholakia, Herrmann 2005; Bagozzi, Dholakia and Mookerjee 2006) and professional activity, including work related helping behaviors (Andersen 2005). VC researchers make the distinction between brand communities, in which interest in a specific brand is a precondition for involvement in the community, and communities in which participants engage in peer to peer (P3) problem solving to overcome a common problem or create a public resource (Mathwick, Wiertz and de Ruyter 2008). The present study extends research on virtual communities by shedding light on a specific sub-category of P3 VCs concerned with personal challenges, which we term "communities of personal challenge". Personal challenge VCs are communities in which people engage in self-help to cope with personal challenges such as health, financial or legal problems

with the potential to substantially undermine their quality of life. For example, at Mentalhealth.com participants exchange coping strategies in a mental health support community on topics such as bipolar disorder, eating disorder, abuse, bullying, attention deficit disorder and addiction and impulse problems. Foreclosure Fight Club is a VC in which people share their experiences about resisting their homes being foreclosed and exposing fraud and misinformation by people seeking to exploit the unfortunate circumstance of others. Other examples include DailyStrength.org, a family issues support forum in which participants discuss family relationships and parenting, and ILW.com, an immigration discussion forum in which participants pursuing extensions of their US H1B visas exchange experiences and provide advice to each other as well as receive professional advice. We make a basic assumption in this study that consumers who are faced with a personal challenge such as a health or legal challenge are likely in a VC context to have kinship and consider themselves as members of an in-group confronting a challenge. We expect that the degree to which these group members consider the professionals that serve them as in-group or out-group to be a function of supportive interactions within the VC.

Individuals engage in personal challenge communities out of necessity and participation often provides valuable insight in sustaining their motivation and mental toughness to cope with or overcome their challenge. Using qualitative research techniques, Anderson and McCabe (2012) highlighted the potential of internet interactions to create co-constructed environments that self-socialize participants in ways that differ from traditional social and societal approaches. These co-constructed and self-socializing characteristics of online interactions provide the broader context within which advice and social support are provided within VCs. These communities are also a forum for interaction between networking professionals such as

attorneys, physicians, financial advisers and other counseling services. Pharmaceutical products and medical, financial and legal services are often mentioned in discussions within communities of challenge in both a positive and negative light. Although the potential of VCs to influence consumer purchase decisions has long been recognized (Hagel 1999), research on VCs that coalesce around a personal challenge is noticeably absent from the literature. Hence, there is a need to understand how consumer perceptions may be impacted by communities of personal challenge. The conceptual model guiding this study is shown in Figure 1.

Place Figure 1 about here

Research on VCs has emphasized their identity defining role and socially supportive benefits (e.g., Algesheimer et al. 2005; Dholakia et al. 2009; Nambisan and Baron, 2007; Nambisan and Baron 2009). Given the severity of the health, legal or financial challenges faced by many participants in VCs of challenge, it is likely that ongoing socially supportive experiences could have influential effects on perception and behavior. VC participants in search of easier alternatives may be receptive to opinions found within VCs that contradict the realistic but unpleasant advice of a professional. VCs provide a ready opportunity to seek comfort in the pleasant experiences of others facing a similar challenge. It is possible that the emotionally supportive experiences within VCs may prompt participants to engage in identity defining and group cohesive behaviors such as expressing skepticism toward related out-groups (Tajfel and Turner 1979). Hence, we examine the likelihood that experiencing emotional support within VCs of personal challenge leads participants to become skeptical of related out-groups such as doctors and drug companies in the case of healthcare VCs. As a counter to the narrow focus of emotional support, we also examine the effects of participant overall satisfaction on participant

skepticism toward related out-groups. We anticipate that, as a more holistic evaluation that also includes functional aspects of the VC, overall satisfaction will reduce participant skepticism towards related out groups. Given the popularity of VCs, it is important that managers and consumers become aware of their potential for not only achieving positive socially supportive ends but also their potential for increasing conflict between consumers and other groups within the value network.

The remainder of this article is organized as follows. Next we review the literature on peer to peer virtual communities, followed by a brief discussion of social identity theory. Following this we develop our hypotheses, outline the study methodology and discuss our research findings.

Peer to Peer Virtual Communities

Regardless of the technologies facilitating the communication process (e.g., blogs, web sites, email, twitter, social networks etc.), researchers have identified certain definitive characteristics of VCs. A defining characteristic of VCs is that members participate out of *volitional choice* rather than by compulsion (Bagozzi and Dholakia 2002; Nambisan and Baron 2009). An implication of this is that accessibility and ease-of-use must be adequate and participation and termination must involve very little effort on the part of customers. Volitional motivation to participate in VCs results from common challenges and experiences of individuals who seek information to address their concerns. Another fundamental characteristic of P3 communities pointed out by Muniz and O'Guinn (2001) is the sense of *moral responsibility* or a *felt sense of obligation* existing among members to share their knowledge and experience to improve the well-being of others. This is the source of consumer motivation to engage in VCs in an almost

self-propelling manner beyond any immediate problems they seek to address. The third defining characteristic of P3 communities is the existence of social interactions sufficient to concretize common goals and overlapping opinions into a *consciousness of kind* (Gusfield 1978; Muniz and O'Guinn 2001). Through brief exchange of opinions, community members reinforce common beliefs and clarify and focus the goals of the community. This creates a collective consciousness that sets the community apart from others not similarly motivated. The emergence of the consciousness of kind among community members potentially enhances the fourth defining characteristic of P3 communities, namely *we intentions*, which is an intention by community members to undertake joint action (Bagozzi, Dholakia and Mookerjee 2006).

The fifth characteristic of P3 VCs highlighted in the emerging literature is that, much like their traditional offline counterparts, these communities comprise broadly co-dependent *functional and social components* (Dholakia et al. 2009). Functional benefits are primarily learning related, focused on helping customers to better understand their prescriptive requirements and how to more effectively use products and services. Functional product related discussion is the core mechanism for generating a consciousness of kind (Muniz and O'Guinn 2001). Nambisan and Baron (2009) argue that in-depth product related discussions provide members the opportunity to demonstrate their expertise and build their reputation by suggesting innovative product usage and product improvement ideas that enhance the level of learning, and the integrative and hedonic benefits realized by members. Collectively, these defining characteristics suggest that VCs are inherently conducive to building strong social identity.

Social Identity Theory

An essential determinant of active participation in a VC is an initial perception of common goals between the community and the consumer (Dholakia et al. 2004; Nambisan and Baron 2007). Social identity theory posits that individuals enhance their self-esteem by associating with individuals, groups and organizations that reflect their desired identity (Tajfel and Turner 1979). Consumers pursue their identities by consuming brands and associating with communities to create overlaps between their public image and those of the desired community or brand (Bhattacharya et al. 1995; Bhattacharya and Sen 2003). Consumer participation in health-related communities is goal directed behavior. Brand community researchers observe that consumers pursue their identities by adopting the values and norms of the community and by devoting their efforts to strengthening these communities (McAlexander et al. 2002; Algesheimer et al. 2005). Through VC participation consumers realize their common identity or kinship with others facing similar challenges. The present study takes the core notion of social identity theory as a basic assumption, namely that participants in VCs of challenge are motivated by a need to establish a common identity and that efforts to establish this identity has the potential to generate intergroup conflict.

Emotional Support and Skepticism toward Out-groups

Emotional support is one of the central objectives of visiting a VC and visitors seek such support from in-group members facing similar challenges, enabling them to cope more effectively with a personal challenge. Indeed, social support is among the most frequently cited psychological benefit of participant involvement in VCs (Preece and Ghozati 2001). Psychologists conceptualize social support as “the perception or experience that one is loved and cared for, esteemed and valued, and part of a social network of mutual assistance and obligations” (Taylor

et al. 2004, pp. 354-55; cf. Rosenbaum and Massiah 2007). Health education researchers have suggested that VCs hold certain advantages over face-to-face groups in providing social support. VCs are always available, with no geographic barriers and afford participants anonymity to share their opinions. Sociodemographic factors such as age, gender, social status and ethnicity are unobservable (Finn 1999; Madara 1997). But limitations of virtual social support have also been noted. The inability to observe facial expression and body language within the medium limits consumers' ability to convey and detect visual and aural cues, which increases the likelihood that written statements may be misinterpreted (Galinsky, Schopler and Abell 1997). Despite its limitations, social support within VCs comes at no monetary cost to the consumer, which makes the value proposition very compelling.

Because our concern is with communities of challenge we focus on the emotional aspects of social support (referred to as social-emotional support by Rosenbaum and Messiah 2007). "Emotional support refers to having people available to listen, to care, to sympathize, to provide reassurance, and to make one feel valued, loved and cared for" (c.f. Helgeson 2003). Within the services marketing context, socially supportive behaviors among consumers have been demonstrated to significantly increase customer citizenship behaviors and loyalty (Adelman and Ahuvia 1995; Rosenbaum and Massiah 2007). Emotionally supportive comments made among anonymous participants in a virtual community may not approach the sophistication or effectiveness of emotional support from family, friends or clinicians. However, consumers do have emotionally supportive exchanges in VCs that have the potential to influence behavior.

Emotionally supportive social integration is an essential aspect of a healthy lifestyle. Social support provides people with outlets for discussing their feelings and expressing their concerns and worries (c.f. Rosenbaum and Massiah 2007 p. 261). Several characteristics of VCs

make them conducive to social support that increases participant satisfaction with the community. Qualities such as accessibility, anonymity, timeliness, and openness make VCs an advantageous medium for receiving social support. Professional consultations are often plagued by social distance and information asymmetry, making genuine empathy difficult to appreciate. VCs, to the contrary, have participants that share similar challenges and consumption experiences, and are naturally inclined to empathize with each other (Wright 2002).

Research suggests that many people have an inherent motivation to share their experience for the benefit of others traveling a similar road. For instance Rodgers and Chen (2005) found from a longitudinal content analysis study that a higher percentage of VC breast cancer patients (55.9%) indicated giving social support as a psychological benefit as opposed to those citing receiving social support (47.2%). This is indicative of moral obligation to reciprocate helping behaviors, also detected within VCs by market researchers (e.g., Muniz and O'Guinn 2001). Thus, supportive active participation, elicited through requests or indirectly via observation of relevant responses to the requests of other community members are likely to motivate consumers to reciprocate with supportive and informative actions toward the community.

Interestingly, engaging in emotional support within VCs may have negative implications for some stakeholders. The logic of social identity theory suggests that emotionally supportive experiences in personal challenge VCs may for multiple reasons actually increase participant skepticism toward related out-groups. First, through engagement in social support, participants may become exposed to the selling tactics of out-groups such as doctors and drug companies. According to the persuasion knowledge model (Friestad and Wright, 1994) as consumers learn the persuasive selling tactics of marketers, they can use this knowledge to cope with their persuasive attempts and even to resist such attempts. Accordingly, as emotionally supportive

interactions involve discussion of the persuasive arguments of out-groups, we anticipate that participants may become more resistant to their persuasive attempts. This resistance to persuasion may lay the groundwork for participants becoming skeptical toward out-groups.

The second reason why social support may increase skepticism is implied by research on motivated reasoning bias. Motivated reasoning refers to the notion that people's hopes, wishes and fears often interfere with their judgments leading them to be less skeptical of pleasant information and more skeptical of unpleasant information (Agrawal and Maheswaran 2005, Ditto and Lopez 1992). Consistent research results have been found across a variety of circumstances such as professional competence (Beckman 1973) and intelligence assessment (Wyer and Frey 1983) suggesting that feedback or diagnosis that are consistent with an individual's preferences are more likely to be perceived as valid and accurate than results perceived as inconsistent with the individual's preferences. Within a healthcare context, research has shown that subjects generate more alternative explanations for an unhealthy diagnosis than for a healthy diagnosis and also that they rate an unhealthy diagnosis as less accurate than a healthy diagnosis (Ditto and Lopez 1992).

Hence theory and research in motivated reasoning point to the tendency toward skepticism directed at professionals who provide unpleasant advice. Communities of challenge are often the hunting ground for alternative explanations of undesirable professional prognosis. For example, faced with the inconvenience of having to leave her country of domicile to be considered for a work visa on the best advice of her attorney, an immigrant may seek alternative advice in a VC. This individual is likely disposed toward motivated skepticism, making her receptive to optimistic but incorrect and unrealistic suggestions by her peers and also making her increasingly skeptical of professional advice.

The third and perhaps most powerful potential source of participant skepticism toward out-groups is explained by social identity theory. Social identity theory holds that individuals pursue positive in-group distinctiveness by drawing distinctions between themselves and related groups (Hinkle and Brown 1990; Kelly 1988). Individuals will highlight points of difference between their desired group and others in ways that produce a favorable comparison (Lipponen, Helkama and Juslin 2003). This process of intergroup distinction is an ongoing source of self-esteem enhancement and means of defining the group more clearly. Intergroup distinction clarifies uncertainty and establishes prescriptive behavioral norms (Hogg 2000; Hogg 2001). Research across several contexts has shown that as group identity becomes more established, group members become more biased in their evaluation of other groups (e.g. Brown and Williams 1984; Oaker and Brown 1986; Stone and Crisp 2007).

In summary, we argue that the potential of VCs to engender persuasion resistance and motivated skepticism, combined with the presence of strong ingroup cohesion arising from participants facing a formidable personal challenge are likely to increase participant skepticism toward out-groups. In light of these arguments the following hypothesis is advanced:

H₁: The higher the level of social support consumers experience in a VC, the higher their level of skepticism toward (a) doctors and (b) drug companies.

Overall Satisfaction

Consumer satisfaction is an evaluative response to acquisition and consumption experiences of products or services. It results from a comparison of consumers' expectations of a product or service with the realized performance, producing a confirmation/disconfirmation outcome representing varying levels of satisfaction/dissatisfaction (Westbrook and Oliver 1981). Overall satisfaction refers to "the consumer's overall dis/satisfaction with the organization based on all

encounters and experiences with that particular organization” (Bitner and Hubbert 1994, pp. 76-77). Overall satisfaction is relational, implying an evaluative summary of all experiences to-date rather than a transaction specific evaluation. Satisfaction evaluations determine consumer attitudes toward the brand and behavioral intentions, particularly loyalty or repeat purchase intentions (Oliver 1980).

We anticipate that overall satisfaction with a VC will lower consumer skepticism toward out-groups for multiple reasons. Overall satisfaction evaluation is based on all previous interactions with the VC. Consumers think about specifics when asked about service encounter satisfaction but think about general impressions when asked about overall satisfaction (Bitner and Hubbert, 1994). Overall satisfaction evaluations of VCs are holistic focusing on the performance of all aspects of the VC. “As long as consumers are relatively satisfied with the goods and services they purchase and consume, this stored evaluation (overall satisfaction) serves as an anchor within a relatively top-down evaluation process,” (c.f. Olsen and Johnson 2003, p.187). The breadth of overall satisfaction as consumer evaluation is illustrated by studies demonstrating statistical significance of various dimensions of e-service quality on overall satisfaction, including design, accessibility, interactivity, ease-of-use, vibrancy and privacy among other variables (e.g. Trabold, Heim, and Field 2006). The holistic top down nature of overall satisfaction evaluations combined with the broad scope of aspects of a VC being considered by participants suggest that overall satisfaction is likely to be more objective and may counter the narrower identity-defining goals of emotional support that motivates participants to become skeptical toward related out-groups.

VC web sites are interactive and present information in a manner that consumers find easy to understand and visually demonstrative. Learning is a primary motivation to become

involved in VCs. In particular the diversity, currency and accuracy of information have been shown to be important facilitators of online learning (Dholakia et al. 2009). Related out-groups play an important role in promoting learning and improving the VC experience in a way that may counter the skepticism generated by peer to peer interactions. We argue that when VC participants consider the broad scope of benefits across their cumulative experiences with a VC, they are more likely to recognize the positive contributions of related out-groups as members of the value network. Consequently we hypothesize the following:

H₂: The higher the level of consumer overall satisfaction with the VC, the lower their level of skepticism toward (a) doctors and (b) drug companies.

The Moderating Effect of Corporate Ownership

We previously argued that emotionally supportive peer to peer interactions within VCs should increase participant out-group bias, leading to increased skepticism toward related out-groups. However, sometimes these emotionally supportive interactions are being facilitated by groups that are naturally considered out-groups. Corporate owned web sites often profit from the sale of banner advertisements and click-stream data. Corporations may naturally be viewed by consumers as belonging to an out-group or a related sub-group and consequently consumers may harbor intergroup bias and suspicion toward such entities. But, what happens when corporations facilitate VC peer to peer interactions. More specifically, when a corporation operates a VC, does this reduce the skepticism generated toward related-out groups?

The Common In-Group Identity Model (Gaertner et al. 1993) offers guidance explaining how participants are likely to become more receptive to related out-groups. It suggests several factors that may induce group members to re-categorize themselves with respect to other groups, leading to reduced propensity for intergroup bias. Causal factors such as situations requiring intergroup interdependence and problem solving, interaction revealing common values,

similarity and linguistic expressions of inclusive pronouns such as ‘we’ rather than ‘they,’ can lead group members to re-categorize themselves with respect to other groups as being subgroups within a broader category or members of a superordinate group. According to the Common In-Group Identity Model such re-categorizations can lead to increased perceived group homogeneity, positive affect, increased cooperation, helping behaviors and reduced competition.

We draw on the reasoning of the Common In-Group Identity Model to argue that perceived corporate ownership of a VC can reduce participant skepticism toward out-group members such as doctors and drug companies. First, for profit and revenue reasons it can be expected that corporations are likely to be interested in weaving a community that includes related subgroups capable of contributing value and being sources of revenue. Hence, we expect corporate owned VCs to create a more receptive atmosphere to related professionals. Beyond this we expect factors suggested by the Common In-Group Identity Model to affect participants’ attitude towards out-groups. Cooperative behaviors toward participants inherent in the helpfulness of the resources and facilities of the VC web site should create an integrative ‘we’ rather than ‘they’ perception of the corporation owning the web site. This should cause VC participants to think of related subgroups such as doctors and drug companies as part of a larger superordinate group working toward the same goal of improving quality of life, leading to reduced propensity for intergroup bias. Following from this discussion we expect the following.

H₃: When participants experience a corporate owned VC, their level of skepticism toward (a) doctors and (b) drug companies will be reduced.

METHOD

Data Collection

Respondents were recruited using an online panel from a commercial market research supplier and were randomly selected from a panel of consumers who indicated that they frequently used

the internet. Consumers with health conditions, caretakers and other members of the household coping with someone's health condition were targeted as with other VC research (e.g., Nambisan and Baron 2007). In total 4,849 panel members were invited to participate in the study. From this survey an incidence rate of 9.3% was realized, representing 451 individuals who visited healthcare VCs. Of the 451 respondents, 47 indicated they were healthcare professionals and were excluded from the study. A further 74 respondents were excluded for incomplete survey responses leaving 330 respondents. To ensure respondents were sufficiently familiar with the P3 VCs that were the subject of their response, participants who had visited the community less than four times in the last three months were excluded, leaving 270 respondents as the subjects of the analysis. The median visit by respondents in the last three months is eight. Regarding ownership of the VCs in which the 270 respondents participated, 18.5% were corporate owned, 10.7% were university owned, 19% were owned by a professional association, 9.3% were reportedly run by individuals and 42.5% of respondents reported 'don't know' to this question. Approximately 53% of respondents reported that the VC they are involved in is moderated, 13% reported un-moderated and 34% reported 'don't know'. The median age of respondents is 44. A wide range of medical conditions were represented in the sample including diabetes (8.4%), depression (8.1%), obesity (7.5%), multiple sclerosis (5.7%), cancer (4.8%), arthritis (3.6%), fibromyalgia (3.0%), high blood pressure (2.7%), chronic pain (2.4%), and anxiety (1.5%). Standard tests for non-response bias did not indicate any concerns.

Measurement

Emotional support was measured using a five-item scale from Rosenbaum and Massiah (2007), anchored by 1 (strongly disagree) to 7 (strongly agree). Overall satisfaction was measured with a

widely used 7-point three-item semantic differential scale with the adjectives displeased-pleased, discontented-contented and dissatisfied-satisfied. Skepticism toward drug companies and skepticism toward physicians were measured using two new three-item scales. First, the literature was reviewed for construct definitions and to clarify the domain of the skepticism construct. Next, discussion threads across several VCs were reviewed to further clarify the domain of each construct and to generate sample items (Churchill 1979). Exploratory factor analysis was conducted to determine the need for purification of measures. All items loaded cleanly on the intended constructs and tapped consumers' perception of the opinions, motives and actions of drug companies and physicians respectively. The full list of measurement scales employed in this study are presented in Table 1, along with corresponding diagnostic information. All scales demonstrate robust Cronbach's Alphas ranging from .92 to .97.

Place Table 1 about here

Common Method Variance

Common method variance (CMV) has been identified as a threat to the interpretation and validity of results of survey research (Podsakoff et al. 2003). We attempted to minimize the impact of CMV on study findings by implementing some suggestions of Podsakoff et al. (2003). To assess the impact of CMV on our results we pursued a method recommended by Lindell and Whitney (2001), which specified a marker variable that is theoretically unrelated to our focal variables. The marker variable serves the purpose of identifying correlations between constructs that should not be correlated. In our study the marker variable was respondents' overall attitudes to Ford motor company. We used the lowest positive correlation between the marker variable and a focal variable to adjust the correlation matrix. This happens to be the correlation between

the marker variable and skepticism towards drug companies ($r=.06$). The normal correlations are shown below the diagonal and the adjusted correlations are shown above the diagonal in Table 2. We also determined the statistical significance of the adjusted correlations (Lindell and Whitney 2001). None of the correlations which were significant before the adjustment lost significance after the adjustment, indicating that the hypothesized relationships were not impacted by CMV.

RESULTS

Confirmatory factor analysis was carried out using AMOS 21 to determine the internal consistency and discriminant validity of the measures in the model. These results are displayed in Table 1. The model diagnostics indicate an acceptable level of fit of the measurement model to the data with a χ^2 [71] of 152, $p < .001$ and a root mean square error of approximation (RMSEA) of .06. Additionally the comparative fit index (CFI) at .98 and normed fit index (NFI) at .96 are above the recommended .90 threshold. Internal consistency is supported by the Cronbach's Alpha for all latent constructs ranging from .92 to .97, exceeding the .7 threshold. The correlation matrix of latent constructs and the average variance extracted (AVE) for each construct are presented in Table 2. The AVE for all the constructs range between .69 and .91, exceeding the .50 threshold, and all the AVE estimates exceeded their respective squared interconstruct correlations, providing further evidence of discriminant validity.

Place Table 2 about here

The hypotheses were tested using two-step hierarchical moderated regressions. Step one evaluates the main effects of emotional support and overall satisfaction. Step 2 introduces the main and interaction effects of perceived corporate ownership.

All three hypotheses are supported fully or partially. Emotional support increases skepticism towards doctors (H_{1a} , $\beta = .32$; $p < .001$) and drug companies (H_{1b} , $\beta = .29$; $p < .01$). Overall satisfaction, on the other hand, reduces consumer skepticism toward doctors (H_{2a} , $\beta = -.22$; $p < .001$) and drug companies (H_{2b} , $\beta = -.13$; $p < .05$). The interaction variable corporate owned*emotional support has a significant negative effect on skepticism toward doctors (H_{3a} , $\beta = -.54$; $p < .05$), indicating that the effect of emotional support on skepticism toward doctors is reversed in situations of corporate owned VCs. This moderating effect was not supported for skepticism toward drug companies (H_{3b} , $\beta = -.34$; $p < .16$). Hence H_{3a} is supported but H_{3b} is not supported by our data.

We also examined the effects of age, gender and education as control variables on skepticism. While these demographic variables have no significant effect on skepticism toward drug companies, gender and age significantly affect skepticism toward doctors. Age has a small but highly significant effect on skepticism toward doctors indicating that consumers become less skeptical of doctors as they get older. Gender was modeled as a dummy variable with 0 indicating female and a 1 indicating male. The results show that males are significantly more skeptical toward doctors than females. Finally, participant education level does not have a significant effect on skepticism toward doctors and drug companies. Next, we discuss the significance of our findings.

Place Table 3 about here

DISCUSSION

Drawing on social identity theory we argued that peer to peer social support occurring within VCs of challenge leads to increased skepticism toward related out-groups. We tested this

hypothesis using data from participants in healthcare related VCs in which participants interact to share experiences and provide support to each other on battling various types of illnesses. The findings of this study make important research and managerial contributions to the emerging literature on VCs.

The VC research to date has demonstrated a general theory that consumers are motivated to engage by social identity and in the process of sharing and experiencing reciprocated benefits become motivated to engage in citizenship behaviors toward the brand and employees. The present study contributes to the VC literature by highlighting an unexplored category of VCs that we term communities of challenge in which a different logic pervades. Our findings expand the VC logic by showing that in personally challenging situations, consumer VC interactions involving emotional support can increase skepticism and conflict directed at related out-groups or sub-groups. So whereas VCs have the potential to stimulate consumer citizenship behaviors, they can also elicit skepticism toward members of a value delivery network.

The study finds that when VCs are corporate owned (as opposed to owned by charities, not-for-profits and individuals) emotional support does not increase skepticism toward related out-groups but instead reduces it. This hypothesis was supported for skepticism towards doctors, and although not statistically significant for drug companies, the association was negative as anticipated. This suggests that when participants experience cooperative behaviors from a firm providing a service, it may not only lead to reciprocated citizenship actions toward the firm but goodwill to related out-groups as well, particularly doctors. Hence cooperative behavior by one party in a VC can have multilateral benefits. We speculate that this relationship was not statistically significant for drug companies because more may be required to change consumer perceptions toward drug companies than is required to change perceptions toward doctors.

Doctors can be presented as individual with intrinsic motivations to do good whereas drug companies have a perhaps unavoidable extrinsic profit motive.

The latter finding also suggests that managers of VCs need to be attentive to branding and especially to maintaining brand presence in the VC chat rooms. Managers must work to increase participants' realization that the company owning the VC shares in their mission of overcoming the challenges confronting participants. The notion of 'we intentions' or intentional social action characteristics of online interactions (Bagozzi, Dholakia and Mookerjee 2006) is useful here. By emphasizing cooperative actions and inclusive language, VC managers should forge an awareness of "we intention" representing joint action for the benefit of the VC and thereby reduce conflict and skepticism that could be exploited by opportunists.

Importantly, the study highlights the need to manage negative biases in VCs. We speculate that managers may be able to counter biases generated by emotional support through encouraging participants to consider the broad range of attributes that make the community worthwhile. For example, interesting content such as expert written articles may increase participant overall satisfaction and thereby deemphasize the propensity for skepticism toward related groups, particularly if these are written by doctors. Interactive self-assessment features and educational games might also be designed as an alternative means of supporting participants. Our finding implies that less resourced and minimally designed VCs resembling traditional chat rooms may score poorly on overall satisfaction and therefore be a source of skepticism toward related professionals.

The emotional support taking place in VCs offer managerial insights into how to improve web site stickiness. Depending on the nature of the problem a consumer has, they may be in need of some degree of emotional support. As participants engage in peer to peer interactions

they benefit and become obliged to reciprocate. Holistically, this sequence may be considered as a methodology for improving stickiness. Potentially managers can increase web site stickiness by considering the types of information that should be given directly to customers in articles and the types that should be seeded via peer to peer interaction. This may improve customer engagement and learning.

There are also public policy implications to our study. The internet is a major channel for the unlawful sale of prescription drugs to consumers and its potential for medical misinformation has been documented (Foreman and Block 2006). Our finding that social support within VCs increases skepticism toward established professionals should be a cause for concern to public policy makers and consumer advocates. We recognize that skepticism toward professionals can be healthy and should reduce the information asymmetry hindering consumer evaluation of professionals. However, the potential also exists for purveyors to engage in VC discussions to promote skepticism toward established solutions while promoting false hope and even fraudulent solutions for profitable gain. Consequently, we recommend that VCs concerned with personally challenging issues include an advisory that informs consumers of the dangers of taking inappropriate advice. It might also be the case, in the context of a corporate owned virtual health community, that drug companies could reduce the level of skepticism associated with their prescriptive recommendations by associating themselves, and the advice they give, with physicians.

Professionals providing services to consumers in challenging situations may wish to consider counseling consumers on how to interpret and act on information received in VCs. Attorneys and physicians should engage customers in forums to reinforce professional advice and counter misinformation that could negatively influence post-purchase evaluation.

Professionals should also consider preemptively advising their clients on inappropriate alternatives they are likely to encounter within VC discussion forums.

Study Limitations and Further Research Suggestions

Like most studies, this study has limitations that potentially constrain its findings. In developing the measurement scales for the new constructs in this study actual discussion threads from healthcare VCs were used as an indicator of the relevance of the constructs and to clarify their domain. Though this approach was insightful and revealing, a more systematic netnographic approach to data collection could have been employed. Furthermore this study is limited by the single source nature of the data collected here, though we utilized procedural techniques to control for CMV and statistical tests to ascertain its existence. We encourage replication and extension of our findings in other communities of challenge such as legal or financial situations.

This study is also limited by the absence of other potentially confounding variables characterizing one's illness. It could be, for example, that for illnesses which are more complex to understand, more chronic or more long-term, individuals would be likely to spend more time scouring the internet and other non-traditional sources looking for information. In light of the seriousness of their condition, and the lower likelihood of traditional sources of information being able to offer successful remedies, this may strengthen the link between emotional support and skepticism towards out-groups. Consequently future research in this area should control for the medical characteristics of the condition, or other characteristics of the personal challenge.

Several interesting research questions regarding consumer participation in VCs remain to be addressed. More research is required to identify and evaluate the effectiveness of strategies to manage motivated skepticism. What relational or performance attributes may be associated with

a brand to neutralize this skepticism? What are the most effective ways of intervening in VC discussions to protect a product or brand? Finally, from the consumer standpoint, does skepticism lead empirically to higher post-purchase satisfaction or greater dissatisfaction from ill-informed purchase decisions?

Conclusion

This article examines the relatively unexplored context of people trying to overcome personally challenging situations through engagement in peer to peer VCs. We demonstrate that the social support taking place in VCs has the potential to create negative perceptions toward related out group suppliers such as physicians, attorneys and financial advisors. We call for further research on the influence of peer to peer VCs on consumer perception and choice.

Table 1. Construct Measures

Factor	Indicator	Mean	σ	Loading/ Weight	A
Emotional Support	The comments of online community participants reassure me about things.	5.59	1.22	.81	.92
	The comments of online community participants help me to not lose courage.	5.65	1.28	.84	
	The comments of online community often perk me up or cheer me up.	5.53	1.22	.89	
	The comments of online community participants convey empathy for me.	5.45	1.31	.75	
	The comments of online community participants make me feel at ease.	5.50	1.19	.87	
Overall Satisfaction	Overall, how do you feel about you experiences with this online community so far? (Pleased – Displeased)	8.34	1.82	.85	.94
	Overall, how do you feel about you experiences with this online community so far? (Contented – Discontented)	8.06	2.01	.94	
	Overall, how do you feel about you experiences with this online community so far?	8.16	2.09	.93	
Skepticism (drugs)	Since joining this online community I have become more critical of the advertising claims of drug/pharmaceutical marketing firms.	4.59	1.71	.90	.94
	Since joining this online community I have become more doubtful of the motives of drug/pharmaceutical marketers.	4.57	1.70	.99	
	Since joining this online community I have become more doubtful of the actions of drug/pharmaceutical firms.	4.54	1.71	.97	
Skepticism (doctors)	Since joining this online community I have become more critical of the opinion of physicians.	3.66	1.81	.86	.97
	Since joining this community I have become more doubtful of physicians' motives.	3.27	1.76	.93	
	Since joining this community I have become more doubtful of physicians' actions.	3.37	1.77	.97	

$\chi^2=152$ (df=71), $p < .001$; CFI = .98, NFI = .96, RMSEA = .06

Table 2. Construct Correlation Matrix and Adjusted Construct Correlation Matrix

	1	2	3	4	5
1. Emotional support	.69	.50***	.04	.01	.14*
2. Overall satisfaction	.53***	.82	-.12*	-.22***	.14*
3. Skepticism (drugs)	.10	-.05	.91	.54***	.00
4. Skepticism (doctors)	.07	-.15*	.57**	.85	.05
5. Attitudes (Ford)	.19**	.19**	.06	.11	—

NB: Values below diagonal represent correlations between constructs, values on the diagonal represent Average Variance Extracted and values above diagonal represent the correlations between constructs adjusted for the marker variable.

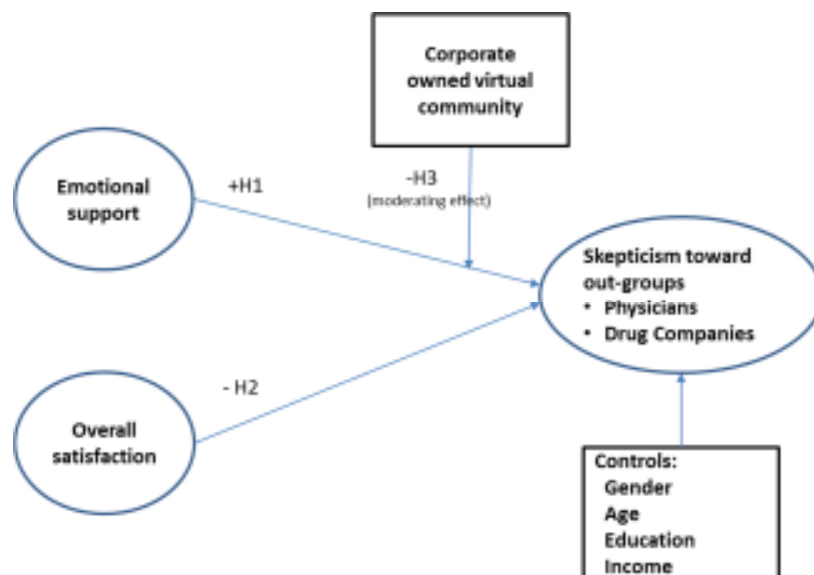
*** $p < .001$ ** $p < .01$ * $p < .05$

Table 4. Test in Corporate Ownership Interaction Effects
(Unstandardized Regression Coefficients)

	Hypotheses	Skepticism toward doctors	Skepticism toward drug companies	Skepticism toward doctors	Skepticism toward drug companies
		Step 1	Step 1	Step 2	Step 2
Intercept		3.07***	3.70***	2.57***	3.31***
Emotional Support	H1 _a , H1 _b	.32**	.29**	.43***	.36**
Corporate owned (dummy)				2.52*	1.80
Overall satisfaction	H2 _a , H2 _b	-.22***	-.13*	-.23***	-.14*
Corporate owned*emotional support	-H3 _a , -H3 _b			-.53*	-.34
Age		-.02**	.01	-.02**	.01
Gender (dummy, 0 –female, 1- male)		.45*	.20	.53**	.23
Education		.08	.11	.09	.12
R ²		.10	.05	.12	.06

*** $p < .001$ ** $p < .01$ * $p < .05$

Figure 1. Emotional Support and Skepticism toward Out-Groups in Virtual Communities



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