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Predicting good deeds in virtual communities of consumption: The cross-level interactions of individual differences and member citizenship behaviors

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# Predicting good deeds in virtual communities of consumption

Predicting  
good deeds in  
VCC

## The cross-level interactions of individual differences and member citizenship behaviors

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### Abstract

**Purpose** – Motivated by situational strength theory and multi-level theory, the purpose of this paper is to propose a cross-level model to examine whether virtual community citizenship behaviors (VCCBs) are affected by consumers' individual differences on reciprocity, other consumers' collective citizenship behaviors at community-level (members citizenship behaviors, MCBs), and their interaction effects.

**Design/methodology/approach** – The research model is tested with a sample of 340 consumers collected from the 34 virtual communities of consumptions (VCCs). Because consumers are embedded in communities, the authors employ the hierarchical linear modeling for data analyses.

**Findings** – The findings reveal positive effects of individual's prosocial values and community-level MCBs, and a negative effect of exchange ideology, on VCCBs. There is a significant cross-level moderation effect of MCBs such that MCBs reduce the negative influence of exchange ideology on VCCBs.

**Research limitations/implications** – This research suggests that participation in VCCs could be simultaneously driven by the dispositions to help and to get fair reciprocity, while such effects are constrained by others' citizenship behaviors within the VCC. Future research should identify other contextual factors that could confine or amplify the personality-behavior links in the context of VCCs.

**Practical implications** – Managers who intend to build a VCC of high co-creation should establish mechanisms that could facilitate norm of VCCBs. Also, it is crucial to take into account the participants' dispositions on reciprocity in recruiting community members and developing member portfolio.

**Originality/value** – This is one of the first studies to offer insights regarding the role of community-level citizenship behavior as a strong situation to mitigating the influences of individuals' reciprocity-based dispositions.

**Keywords** Exchange ideology, Virtual communities of consumptions, Citizenship behaviours, Prosocial values

**Paper type** Research paper

### 1. Introduction

The advance of internet technology has facilitated the advancement of specialized consumer knowledge reservoirs in the form of virtual communities of consumption (VCC). VCCs offer consumers and companies unparalleled platforms for resource exchange. Consider, for example, how consumers nowadays tap online communities on a regular basis to read product reviews that help their purchase decisions or to seek peer-to-peer support for solving problems with product use. Firms may also benefit from access to the various resources embedded in the communities, such as consumer reviews of products, ideas for innovation, and a medium for shaping consumer



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attitudes toward their products. Although VCCs may consist of members who do not visit the communities solely for consumption matters, many VCCs are “implicitly or explicitly structured around consumption and marketing interests” (Kozinets, 1999, p. 254). Different from firms’ official websites, content in VCCs is primarily contributed by their members who take over service functions traditionally provided by the firms’ employees, oftentimes without getting any monetary rewards. For example, VCC members might volunteer to answer other consumers’ questions regarding particular products. Thus, active participation of the members is key for VCCs to prosper and grow (Bagozzi and Dholakia, 2002).

In the absence of formal role specifications and control structures, participation from the VCC members depends highly on their willingness to invest time and attention (Bateman *et al.*, 2011). Given this, encouraging proactive participation from members presents unique challenges and opportunities for the operators of consumption-centered virtual communities because such behaviors in the environment are generally a matter of volitional choice (Bagozzi and Dholakia, 2002). Extant research on VCC participation has largely focussed on explaining behaviors related to information sharing (e.g. Wiertz and de Ruyter, 2007; Zhou *et al.*, 2014), new product co-development (e.g. Brodie *et al.*, 2013), sense of the community (e.g. Chen *et al.*, 2013), intention for continuous use of the VCC (e.g. Casaló *et al.*, 2010; Jang *et al.*, 2008) or electronic word-of-mouth (e.g. Abrantes *et al.*, 2013; Chang *et al.*, 2013). These studies contribute fruitful knowledge but offer little insight into other possible forms of participative consumer behaviors in the context of VCCs. Recently, scholars have started to explore virtual community citizenship behaviors (VCCBs) as another form of participative behaviors conducive to a VCC’s success (e.g. Yen *et al.*, 2011). While the importance of customer participation in VCCs has led to extensive study of its antecedents (e.g. Chan and Li, 2010; Wasko and Faraj, 2005), empirical evidence with respect to the drivers of VCCBs has remained equivocal.

The literature on organizational citizenship behaviors (OCB) suggests that individual differences in personality traits account for a significant amount of variance in voluntary behaviors (e.g. Borman *et al.*, 2001). Because VCCs are groups or organizations where consumers exchange with others for desired benefits they seek from the chosen communities, one would expect consumers’ engagement in VCCBs to be a function of their disposition on reciprocity. Although accumulating evidence has demonstrated the effects of a prosocial orientation on online participation (e.g. Wasko and Faraj, 2005), humans in social exchanges could also be driven by self-interests, or by both motives (e.g. De Dreu and Nauta, 2009). Researchers to date have not simultaneously considered the contributions of one’s dispositions to help and to demand fair reciprocity (i.e. exchange ideology) in explaining consumers’ exhibitions of VCCBs.

VCCBs could also be a response to the environment because personal factors, as well as situational considerations, guide behaviors (Lewin, 1951). In a service context, other customers are one of the most salient aspects of social environment to the individual (e.g. Rosenbaum and Massiah, 2007) because many individual behaviors are strongly shaped by others’ attitudes and behaviors in the immediate social context (Bandura, 1977; Salancik and Pfeffer, 1978). Yet, we know very little about how one consumer’s VCCBs are influenced by the social context that is defined by the degree to which other consumers in a particular VCC engage in VCCBs. Previous studies that claim to have simultaneously examined individual factors and contextual influences are limited in that their research models and methods did not specify the multi-level phenomena as intended. For instance, Tsai *et al.* (2012) examine individual-, group-, and

relationship-level antecedents of participation in brand communities, but conceptualize group-level factors (e.g. critical mass of a brand community, identification) at the individual level; thus, measuring individual perceptions rather than group-level phenomena. To address this shortcoming, we conceptualize other community members' VCCBs as an aggregate construct manifested at the community level, namely member citizenship behaviors (MCBs), and examine whether it predicts individual-level VCCBs beyond the explanatory power of individual differences.

Finally, individual differences and social context are inherently inseparable and interact to impact individual behaviors (Lewin, 1951). The situational strength theory (Mischel, 1977) argues that personality traits may have less power in predicting individual behaviors when the situation provides strong cues for responses. No previous work on VCCs has featured the cross-level interaction effects between individual differences and community-level social factors (i.e. MCBs). To address these research issues, this study develops a multi-level framework to delineate how individual differences and a community-level contextual factor (i.e. MCBs) jointly explain individual-level VCCBs. The model was tested with 340 subjects from 34 VCCs using hierarchical linear modeling (HLM) (Bryk and Raudenbush, 1992). The remainder of this paper is organized as follows. We present theoretical background, hypothesis development, and research model in Section 2. After we detail our methodology in Section 3, we report important results in Section 4. The final section of the paper discusses the implications for researchers and practitioners, limitations of the results, and directions for future research.

## 2. Theoretical background and hypothesis development

### 2.1 *Virtual community and VCCB*

Virtual communities are defined as "social aggregations that emerge from the internet when enough people carry on public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (Rheingold, 1993, p. 5). The availability of new communication technology changes how people form social communities, making virtual communities an increasingly prominent context for interpersonal exchange. A review of the literature (e.g. Hagel and Armstrong, 1997; Henri and Pudelko, 2003) suggests that several types of virtual communities have emerged depending on the objectives pursued by participants. Communities of interest are formed by individuals around a topic of common interest. For example, the Backpacker ([www.backpackers.com.tw/forum/](http://www.backpackers.com.tw/forum/)) offers consumers an easy access to trusted advice from peer travelers and to explore a wide variety of travel choices. Communities of transaction focus on the share of information to facilitate economic exchanges. The Wine.com ([www.wine.com](http://www.wine.com)), for example, is a retailers' websites where consumers can purchase a wide range of wines and search information pertaining to wines. Communities of relationships, essentially built on relationships, emphasize connections among people who might share similar experiences, concerns, and issues. Facebook ([www.facebook.com](http://www.facebook.com)) is one of the largest Social Networking Sites that allows individuals to form relationships for sharing life and experiences. Community of practice, widely used as a knowledge management tool, refer to "group of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (Wenger *et al.*, 2002, p. 4). Microsoft community (<https://answers.microsoft.com>) represents a typical case as it provides participants the opportunity to share the same working conditions and reinforce their professional identity. In this study, we focus on VCCs, such as

internet forums and bulletin boards, centered on travel and tourism activities, which are a type of communities of interest.

As more and more consumers gather online with similar others to exchange product information and support each other, many online groups have evolved into the form of VCCs. VCCs are “affiliative groups whose online interactions are based upon a shared enthusiasm for, and knowledge of, a specific consumption activity or related group of activities” (Kozinets, 1999, p. 254). In VCCs, some participants voluntarily invest their time and effort solving fellow customers’ problems, thus acting like “partial employees” of the VCCs. For example, other than reading and generating relevant content, consumers may volunteer to answer questions, to recommend the VCC to others, or to provide feedback for operation improvement. As consumers engage in roles, such as promoter, consultant, and service provider, to preserve, support, and improve the welfare of the VCCs, they exhibit VCCBs.

VCCBs refer to discretionary effort directed toward preserving, supporting, and improving the online community (Yen *et al.*, 2011), consisting of four behavioral dimensions: recommendation (loyalty), helping others (participation), providing feedback (cooperation), and sportsmanship. In conceptualizing VCCBs, we adapt three dimensions suggested by the OCB theory (Organ, 1988; Van Dyne *et al.*, 1994) and customer voluntary performance (Bettencourt, 1997): loyalty, participation, and cooperation. In addition, given that “less-than-ideal circumstances” may arise from using VCCs and/or interaction among community members (Wiertz and de Ruyter, 2007), we include another form of citizenship behavior – “sportsmanship” – as another way that consumers can assist VCCs. Recommendation, reflecting one’s loyalty to the VCCs, refers to the behavior of spreading positive word-of-mouth to promote the VCCs to others. Positive word-of-mouth helps the vitality of the VCCs by developing a positive image and recruiting new members. Helping others reflects consumers taking on a human resources role in the community to help other users by, for example, answering questions, thus signaling one’s participation in the VCCs. Providing feedback denotes the role of consultant that consumers assume in VCCs. Consumers exhibit their cooperation with the VCCs by showing their care for the community and offering constructive suggestions for improvement to operators. Finally, sportsmanship refers to consumers’ willingness, for the harmony of a VCC, to withstand undesirable circumstances without complaining.

### *2.2 Individual-level antecedents of VCCBs: prosocial values and exchange ideology*

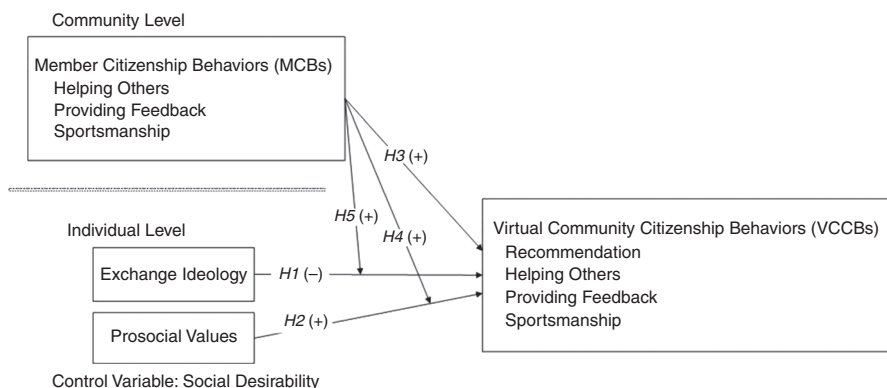
While most research on the causes of OCB, explicitly or implicitly, assume that OCB is a reaction to the individual’s perceptions of his/her job or the organization for which he or she works, some researchers have argued that people may choose to undertake OCB for personal reasons. This argument, based on the assumption that much of human behavior is motivated by a person’s goals and needs, states that individuals engage in OCB because such behaviors meet certain needs or satisfy one or more motives for the individuals. Research also reveals that individual differences on personality traits account for significant amounts of variance in citizenship behaviors (e.g. Borman *et al.*, 2001) whereas the effects would be particularly influential in situations that are unstructured. VCCs are typically ill-defined and unstructured situations in which individuals’ participative behaviors are not prescribed by rules and procedures (Bateman *et al.*, 2011). Rather, engagement in VCCBs could be more an expression of how individuals actually are, thus making understanding individual differences on social exchange motives important to manage such behaviors.

During interpersonal exchanges, people follow several “exchange rules” to guide their choices made in an exchange relation. Among these rules, reciprocity is probably the best known and is often considered as a human universal (Cropanzano and Mitchell, 2005). However, individuals differ in the degree they endorse reciprocity (Cropanzano and Mitchell, 2005) and may be motivated by concern with their self-interests or/and concern for others during social interaction. Although it has been assumed that the two orientations represent the end points of a bipolar continuum (Meglino and Korsgaard, 2007), other researchers argue that self-concern and other-orientation are orthogonal and independent (De Dreu and Nauta, 2009). That is, both self-concern and other-orientation, or either one, can drive someone in an exchange relation. The review leads us to propose two individual difference variables as individual-level predictors of VCCBs (see Figure 1).

The first predictor, prosocial values, represents an enduring disposition focussing on “the need to be a helpful individual and the need to be accepted and to interact smoothly with one’s peer” (Rioux and Penner, 2001). In an attempt to develop a measure of motives for OCB, Rioux and Penner (2001) found that prosocial values strongly and positively correlate with OCBs directed at one’s colleagues in an organizational setting. Likewise, research findings indicate that employees who are less individualistic and show concern for others have a greater tendency to engage in OCBs (e.g. Moorman and Blakely, 1995). A growing body of empirical studies with online communities as the research setting also support the notion that concern for others is one of the primary factors leading to individuals’ knowledge-sharing and helping behaviors (e.g. Hars and Ou, 2002; Wasko and Faraj, 2000). Taken together, these studies converge on the notion that prosocial values, the desire to enhance the welfare of other members in the community, should inspire individuals to exhibit VCCBs. Thus, we propose the following hypothesis:

*H1.* Prosocial values are positively related to an individual’s VCCBs.

Participation in VCCs could also be contingent on concern about individual input and outcomes. According to social exchange theory, interactions that generate obligations are normally interdependent and contingent on the actions of others. Rooted in this notion, exchange ideology has emerged to become an important individual difference that explains individuals’ perceptions, attitudes, and behaviors related to reciprocity during interpersonal exchange processes (Cropanzano and Mitchell, 2005; Takeuchi *et al.*, 2011).



**Figure 1.**  
A multi-level model  
of virtual community  
citizenship  
behaviors (VCCBs)

In research of workplace behavior, exchange ideology captures “the strength of an employee’s belief that work effort should depend on treatment by the organization” (Eisenberger *et al.*, 1986, p. 503). Individuals with a strong exchange ideology will more carefully track obligations (Cropanzano and Mitchell, 2005) and be more concerned if they are being taken advantage of (Molm *et al.*, 2003). On the contrary, individuals with low exchange orientation are less likely to care if exchanges are not reciprocated (Cropanzano and Mitchell, 2005). Within organizational settings, exchange ideology is negatively correlated with individuals’ felt obligation to the organization and leader-member exchange (Takeuchi *et al.*, 2011), and moderates the relationship between organizational commitment and procedural justice (e.g. Witt *et al.*, 2001).

As is found in a wide range of settings, some participants in VCCs supply more than their fair share of pooled resources while others take advantage of public goods without contributing anything in return (Wasko and Faraj, 2005). Thus, social loafing is almost inevitable in VCCs, which may de-motivate participation by individuals who care if their exchanges are not reciprocated, thus making exchange ideology a crucial individual difference for understanding and managing VCCBs. Although studies have reported that intention to reciprocate is a critical motive for online articulation and helping behaviors (Chan and Li, 2010), no existing research has examined how exchange ideology may influence an individual in performing citizenship behaviors in VCCs. As Organ (1988) noted, people tend to engage in OCB when they perceive their social exchange relationships as being fair. The perceived fairness of an exchange is likely to be lower for the consumers with a high exchange ideology because such an orientation tends to trigger a self-serving bias and lead individuals to focus more on what they receive than what they give (Molm *et al.*, 2003). Because exchange ideology is also associated with negativity bias (Takeuchi *et al.*, 2011), people high in this propensity will be inclined to more negatively view social loafing problems in the VCC. Taken together, participants with a high exchange ideology should feel less obliged to the VCC and its other members, vs those with a weak exchange ideology, thus resulting in a lower probability of exhibiting VCCBs. These arguments lead to the following:

*H2. Exchange ideology is negatively related to an individual’s VCCBs.*

### *2.3 Community-level antecedent of VCCBs: MCBs*

When consumers visit a VCC, they share with other consumers the community context that determines their participation in the shared environment. Social scientists (Bandura, 1977; Wood and Bandura, 1989) believe that people learn by modeling others’ behaviors in various contexts. In VCCs, other members represent a major source of social learning about “correct” or desirable behaviors as they undertake and participate in various activities within the shared context. Thus, this study identifies MCBs, defined as citizenship behaviors exhibited by other members in a VCC, as a community-level antecedent of individuals’ VCCBs. As a community-level variable, MCBs capture members’ collective perceptions of VCCBs exhibited by other members as a whole in the shared VCC. Although the measure of others’ citizenship behaviors has its origin at the individual level of analysis (e.g. Tepper *et al.*, 2004), this research conceives MCBs as a shared property emerging from individuals’ perceptions, through social interaction and exchange among members within the same VCC, and manifest at the community level (Kozłowski and Klein, 2000). Through social interactions, participants of the same VCC are likely to experience the same contextual characteristics, such as other members’ VCCBs, which lead them to possess shared

information and form a common perception regarding MCBs exhibited by community members as a whole. As predicted by social learning theory, individuals look to others in the shared context as models of behavior to learn what behaviors are appropriate and inappropriate (Wood and Bandura, 1989). Social information-processing theory (Salancik and Pfeffer, 1978), which emphasizes how attitudinal views are transmitted within a social context, also supports this argument. Given that VCCBs are discretionary and not enforced in the community, the theory would predict that VCC members seek information embedded in their social context (i.e. MCBs) as referents to help them interpret and form their attitudes (Salancik and Pfeffer, 1978). Based on the two theories, when the level of MCBs is high, participants may come to learn that performing citizenship behaviors is desirable in the VCC, ultimately resulting in a high level of individual VCCBs. Therefore, we pose the following hypothesis:

*H3.* Community-level MCBs are positively related to individual's VCCBs.

#### *2.4 MCBs as a cross-level moderator*

Next, we propose that MCBs at the community-level may determine the extent of influence exerted by reciprocity-related orientations on individual's VCCBs. To that end, Peters and O'Connor (1980) point out that the link between individual differences and work performance is constrained or boosted by contextual factors. Highlighting the importance of situational constraints, Mischel (1977) argues that strong situations will constrain the range of behaviors a person is able to or willing to undertake because expectations regarding desirable behavior are rather clear and homogeneous. On the contrary, weak situations that lack normative expectations about behaviors leave a person more discretion to decide on the behaviors in which to engage. Thus, individual differences are more likely to determine behavior in weak situations than in strong situations. Research in laboratory settings (e.g. Beatty *et al.*, 2001) and field settings (e.g. Meyer *et al.*, 2014) has provided supportive evidence for this argument. Given that VCC participants rely on cues received from the community to develop expectations about their behavior and its consequences, the theory of situational strength is readily applicable here to determine how community-level MCBs may interact with individual differences on prosocial values and exchange ideology to determine individual exhibition of VCCBs.

According to its definition in this study, MCBs resemble a kind of group norm that provides guidelines for acceptable and unacceptable behaviors in the shared environment. Group norms are the most readily accessible and inferable element of group-related information available to participants in virtual community (Postmes *et al.*, 2000), helping the regulation of member interaction in the shared context (Alon *et al.*, 2005). Although collaboration and reciprocity are generalized norms for online interactions (Wasko and Faraj, 2000), the level of MCBs could vary across different VCCs. For the VCCs that have a high degree of MCBs, the shared perceptions set clear behavioral guidance that encourages citizenship behaviors, creating a strong situation for member participation. According to the theory of situation strength, although prosocial values may predispose one to engage in VCCBs, the impact will decrease for the VCCs with a higher level of MCBs because a strong situation constrains the expression of individual differences. When the level of MCBs is low, individuals may rely more on their predisposition toward prosocial values to direct their VCCBs because the behavioral cues for performing such behaviors are not readily accessible. Likewise, exchange ideology should have a lesser effect on the exhibition of



VCCBs in VCCs characterized as high in MCBs vs those with low MCBs. On the basis of these arguments, we pose the following hypotheses:

- H4. Community-level MCBs moderate the effect of prosocial values on individual's VCCBs, such that the positive effect is weaker when MCBs are high.
- H5. Community-level MCBs moderate the effect of exchange ideology on individual's VCCBs, such that the negative effect is weaker when MCBs are high.

### 3. Method

#### 3.1 Procedures and samples

This research uses a cross-sectional survey of virtual community members to test the research framework and proposed hypotheses. The population of interest in this study is participants of VCCs that are centered on travel/tourism activities in Taiwan because such themes have achieved high traffic volume and posting rates in recent years. Following the criteria established in previous studies (Ridings *et al.*, 2002), this research selects VCCs for survey based on minimal volume and number of user postings[1]. The criteria ensure that each VCC selected for the study represents a large group of people who constantly communicate with each other. A list of 56 VCCs met the selection criteria, but only 45 VCCs agreed to participate[2]. A message requesting participation in the survey was posted on each VCC with a hyperlink connecting to the Web survey, which remained available until ten respondents from the VCC completed the survey. The initial sample includes 450 respondents. As this study aggregates the measure of MCBs coming from individuals within the community to form the community-level construct, it is necessary to test the appropriateness of the data aggregation. The authors eliminated 11 communities from the sample due to their low within-group interrater reliabilities on MCBs (see results section for more details). This procedure resulted in 340 usable responses (169 males (38 percent) and 281 females (62 percent)) from 34 VCCs for data analysis. Approximately 57 percent were between 18 and 25 years old, 60 percent have a college degree, and 67 percent belonged to the VCC for over six months. In total, 46 percent of the respondents read posted articles over six times per week and 39 percent post to the forum more than two times a week.

#### 3.2 Measures

This study measures all research constructs with existing scales adapted to fit the study setting. To assure equivalency of meaning for the English-language scales, the measures went through a systematic translation and back-translation procedure. A total of 15 industry experts and active VCC participants read and provided comments for improving the wording of the items to improve the measures' readability. This study assesses all research constructs using an even number of response points to minimize cultural influences because respondents from Asian countries tend to select the mid-point in response scales (Si and Cullen, 1998).

All measures use six-point Likert-type scales (1 = "very strongly disagree" and 6 = "very strongly agree" for prosocial values and exchange ideology; 1 = "does not engage in this behavior" and 6 = "frequently engages in this behavior" for VCCBs, MCBs, and social desirability). The construct exchange ideology, based on the five-item scale from the work of Ladd and Henry (2000), measures the strength of a VCC participant's belief that effort toward VCC members should depend on treatment by other members. A sample item is, "How much I help other members should depend on

how they treat me.” We use the eight-item scale of prosocial values developed by Rioux and Penner (2001) to assess the individual’s need to be helpful and desire to build positive relationships with others. Two sample items are, “I feel it is important to help those in need” and “I like interacting with others.” The measure of VCCBs entails 17 items that come from previous studies (Groth, 2005; MacKenzie *et al.*, 1993; Rosenbaum and Massiah, 2007; Yen *et al.*, 2011), with slight alterations to fit VCC settings, to measure four dimensions: recommendation (five items), helping others (six items), providing feedback (three items), and sportsmanship (three items). Following suggestions from previous studies (Podsakoff *et al.*, 1997; Podsakoff and MacKenzie, 1994), the items assessing sportsmanship were reverse-coded and then averaged with the items measuring other dimensions to form a global indicator of VCCBs. Sample items assessing VCCBs included, “I say positive things about this online community to others” (recommendation), “I help others with questions in this community” (helping others), “I make constructive suggestions to the community’s manager on how to improve its service” (providing feedback), and “I spend a lot of time complaining about trivial matters” (sportsmanship). To control the influence of social desirability bias (Hays *et al.*, 1989), the survey included a three-item social desirability response set as a control variable (sample item: “No matter who I’m talking to, I’m always a good listener”).

This study assesses MCBs with measures of VCCBs but with modified wording so the referent behavior changes from “oneself” to “the community as a whole.” That is, respondents have to think about the particular VCC in which they participated for the survey as a reference point to gauge the degree of MCBs when they respond to the items. Given that individual members form their knowledge of the VCC via interactions with each other, the onlooker’s view is the most valid way to evaluate the levels of other members’ MCBs in that particular community. This method is compliant with Mischel’s (2004) notion that other people serve as part of an individual’s situation or environment, and with the suggestion that OCB can be aggregated as a collective construct at another level of analysis (Bommer *et al.*, 2007). In addition, because the behavior of recommendation (promoting a particular VCC) tends to occur in setting not observable by others in the VCC, the scale of MCBs does not include the recommendation dimension. Thus, the MCBs measure comprises three dimensions: helping others (four items), providing feedback (three items), and sportsmanship (three items). Illustrative items are “Members of this online community help each other with questions” (helping others), “Members make constructive suggestions to the community’s manager on how to improve its service” (providing feedback), and “Members spend a lot of time complaining about trivial matters” (sportsmanship). Similar to the treatment of VCCBs, we reverse-coded sportsmanship items and then average the appropriate items scores from the three dimensions to form the final scores for MCBs.

This study performs confirmatory factor analysis (CFA) to estimate the factor loadings of all measurement items using AMOS 5.0 (Arbuckle, 2003), and the results indicate that most items load significantly ( $> 0.70$ ) on the assigned factor. After deleting items (one for recommendation of VCCBs and one for social desirability) with loadings lower than 0.70, the CFA on all scales show good construct validity.

### 3.3 Analytical approach

The research model proposed in this study is multilevel in nature with individual-level variables nested within the VCCs. That is, the data is hierarchical, with the independent and the dependent variables (exchange ideology, prosocial values, VCCBs) at individual-level, and the moderator (MCBs) being a community-level variable. In this

light, HLM (Bryk and Raudenbush, 1992) that allows researchers to simultaneously examine relationships between research constructs spanning across multiple levels of analysis is the most appropriate analytical method for evaluating our research model. This analytical method will take into account non-independence in observations that the nested structure of multi-level data tends to produce (Hoffman, 1997; Hox, 2002), providing a better estimate of standard errors than other analytic methods. Additionally, following the guidelines of Hofmann and Gavin (1998), this study conducts grand-mean centering among the individual-level predictors. This option for centering provides enhanced estimate and interpretability with the HLM results, ensuring that the micro-level effects are controlled during testing of the incremental effects from the macro-level variables, and reduces potential multicollinearity between macro-level intercept and slope estimates (e.g. Hofmann and Gavin, 1998).

**4. Results**

Table I reports the descriptive statistics (means, standard deviations, correlations, and  $\alpha$  coefficients) of all the research variables. As Table I shows, the correlation coefficients between research constructs are all below the suggested cutoff value of 0.8 (Asher, 1983) while the  $\alpha$  coefficients indicate acceptable internal consistency. The square root estimates of AVE for the constructs are greater than their correlations with all other constructs, indicating good discriminant validity (Fornell and Larcker, 1981).

One way ANOVA performed on MCBs shows that between-group differences are significantly higher than within-group differences ( $F = 2.38, p < 0.001$ ), indicating the appropriateness of aggregating individual data to form a community-level construct. Next, this paper calculates within-group interrater reliabilities for MCBs using *Rwg*,  $ICC_1$  and  $ICC_2$  (Bliese, 2000; James *et al.*, 1993). As James *et al.*, (1993) suggest, an *Rwg* estimate greater than 0.7 indicates appropriateness for aggregation. Based on this standard, this paper removes 11 VCCs from the initial sample because their *Rwgs* are below the cutoff value. This results in a mean *Rwg* value of 0.83 for MCBs and the median *Rwg* was 0.84. Additionally,  $ICC_1$  values higher than 0.05 are considered sufficient to warrant aggregation (Bliese, 2000), and  $ICC_2$  values larger than 0.70 are good, while those higher than 0.50 are tolerable (Klein *et al.*, 2000). The study obtains an  $ICC_1$  value of 0.12 and an  $ICC_2$  value of 0.58 for MCBs; both meet the criteria for intra-class correlation. Given these results, this study concludes that MCBs are suitable for aggregation to the community level. Further, this study follows the suggestion of Bryk and Raudenbush (1992) and specifies a null model that includes no determinant to test whether there is significant variation in VCCBs. The analysis indicates significant

**Table I.**  
Descriptive statistics,  
correlations, and  
internal consistency  
reliability

Variables	Means	SD	1	2	3	4	5
1. Social desirability	3.75	0.67	(0.78)				
2. Prosocial values	4.55	0.82	0.26**	(0.93)			
3. Exchange ideology	4.12	1.02	-0.15**	0.06	(0.87)		
4. MCBs <sup>a</sup>	3.97	0.18	0.29**	0.43**	-0.16**	(0.77)	
5. VCCBs	4.06	0.58	0.39**	0.62**	-0.18**	0.52**	(0.83)

**Notes:** Numbers in the diagonal of the matrix are coefficient  $\alpha$ s. <sup>a</sup>Means of this variable were assigned to consumers of the same community to calculate the individual-level correlations. \*\* $p < 0.01$

variance to be explained in VCCBs ( $\hat{\gamma}_{00} = 0.17, p < 0.001$ ), whereas the between-group variance was significantly different from 0 ( $\chi^2 = 64.70, df = 33, p < 0.001$ ). These results support the use of HLM for testing hypotheses.

4.1 Direct effects of prosocial values, exchange ideology, and MCBs

H1 posits that prosocial values positively relate to VCCBs and H2 suggests a negative relationship between exchange ideology and VCCBs. To test H1 and H2, the model includes prosocial values and exchange ideology as the individual-level predictors, with social desirability as the control variable. The results (cf. Model 1 in Table II) indicate that prosocial values positively relate to VCCBs ( $\gamma_{20} = 0.40, p < 0.001$ ) whereas exchange ideology negatively relates to VCCBs ( $\gamma_{30} = -0.05, p < 0.05$ ). Hence, the findings support H1 and H2. H3 predicts a positive effect of community-level MCBs on VCCBs beyond the explanatory power of individual differences. According to the results of Model 2 in Table II, MCBs have a positive association with VCCBs when entered into the equation after individual-level variables ( $\gamma_{01} = 0.39, p < 0.001$ ).

4.2 Cross-level interaction

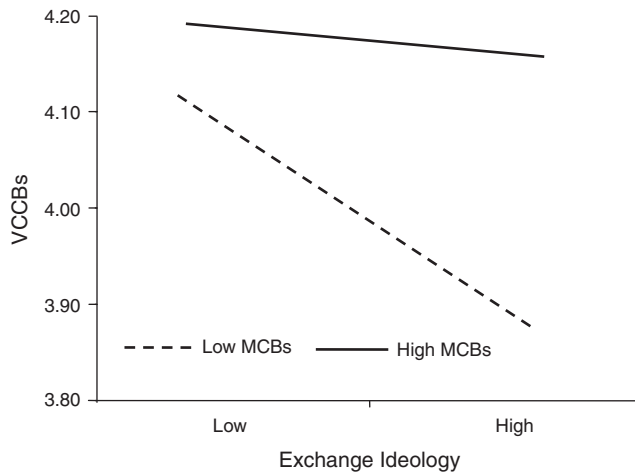
H4 and H5 relate to the moderation effect of MCBs on the relationships between the two individual-level predictors (i.e. prosocial values and exchange ideology) and VCCBs. This study tests these hypotheses by estimating the significance of cross-level interactions ( $\gamma_{21}$  and  $\gamma_{31}$ ) after controlling individual-level and group-level predictors. The results (see Model 3 in Table II) reveal significant interaction between exchange ideology and MCBs ( $\gamma_{31} = 0.33, p < 0.05$ ) but not between prosocial values and MCBs ( $\gamma_{21} = 0.02, ns$ ). Thus, H5 receives support but H4 does not. To check the direction of the significant cross-level interaction between exchange ideology and MCBs, this study plots the individual-level relationships for the high- and low-MCBs conditions (see Figure 2). As Figure 2 graphically depicts, the negative relationship between exchange ideology and VCCBs is more pronounced in low-MCBs group than

	Model 1	VCCBs Model 2	Model 3
<i>Level 1</i>			
Intercept ( $\gamma_{00}$ )	4.06***	2.53***	1.95**
SD ( $\gamma_{10}$ )	0.19***	0.19***	0.19***
PV ( $\gamma_{20}$ )	0.40***	0.39***	0.29
EI ( $\gamma_{30}$ )	-0.05*	-0.05****	-1.37*
<i>Level 2</i>			
MCBs ( $\gamma_{01}$ )		0.39**	0.53**
<i>Cross-level</i>			
PV×MCBs ( $\gamma_{21}$ )			0.02
EI×MCBs ( $\gamma_{31}$ )			0.33*
n (Level 1)	340	340	340
n (Level 2)	34	34	34
Model deviance <sup>a</sup>	397.46	391.57	390.32

Notes: SD, social desirability; PV, prosocial values; EI, exchange ideology. <sup>a</sup>Deviance, a measure of model fit, represents that the smaller the value is, the better the model fits; deviance = 2×log-likelihood of the full maximum-likelihood estimate. \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ ; \*\*\*\* $p < 0.10$

**Table II.**  
Hierarchical linear  
modeling results:  
effects of individual-  
and contextual-level  
variables on  
individual VCCBs

**Figure 2.**  
Moderating effect of  
MCBs on the  
exchange ideology –  
VCCBs relationship



the relationship under the high-MCBs condition. The results further support the prediction of *H5* that community-level MCBs attenuate the impact of exchange ideology on VCCBs.

## 5. Discussions

This study models consumers' participation in the context of VCCs from the lens of organizational citizenship behavior, reciprocity, and situational strength theory. The findings suggest that individuals' dispositions to act prosocially toward others (i.e. prosocial values) and to care more about what they receive than what they give (i.e. exchange ideology) are both important predictors of consumer VCCBs. The present work offers new insights by finding that community-level MCBs, through top-down processes, not only have a direct effect in shaping individual VCCBs but also constrain the negative effects of exchange ideology on individual VCCBs.

### 5.1 Implications for researchers

This study makes important theoretical contributions to extant literature in several aspects. First, this study demonstrates that prosocial values and exchange ideology explain VCCBs, highlighting the importance of individual dispositions in understanding consumer participation in VCC settings. Given that VCCs are online social environments in which people interact to exchange information and knowledge, individual differences regarding reciprocity become crucial in determining participative behaviors. Particularly, this research extends the literature by demonstrating that VCCBs are driven simultaneously by two distinct predispositions regarding reciprocity. Although the literature has long recognized the influence of individual differences on social behaviors, existing research in VCCs offers limited suggestions regarding the influence of dispositions that predispose individuals to react differently in the settings. As prior work has primarily focussed on drivers of participative behaviors, this research contributes by identifying the role of exchange ideology as an inhibitor of VCCBs. The findings also advance understanding of exchange ideology because extant literature has focussed on its moderation effects in a work context while its main effects have remained underexplored (Takeuchi *et al.*, 2011).

Second, the current study demonstrates that citizenship behaviors performed by other consumers in the environment of a VCC can emerge to manifest as a collective perceptions at the community-level and, in turn, to exert a substantial influence on VCCBs at the individual level, beyond the contributions of exchange ideology and prosocial values. This study represents one of the few empirical investigations of citizenship behaviors at multiple level of analysis and the first one in online context, addressing the call to explore multilevel and contextual influences in OCB theory (Podsakoff *et al.*, 2000; Schnake and Dumler, 2003). While previous research has indeed examined antecedents of participation in VCCs from different levels, such as features of virtual communities (e.g. Chan and Li, 2010; Ma and Agarwal, 2007) or individual perceptions/attitudes (e.g. Casaló *et al.*, 2010; Tsai *et al.*, 2012), prior work has not investigated the simultaneous influences of the antecedents captured at multiple levels of analysis. The multi-level approach adopted in this research complements prior works that are limited to only a micro-level or macro-level in their investigations of VC participation; therefore, this study provides a richer and more comprehensive portrait of the interaction between individual and situational factors in the context of VCCs.

Third, the finding that exchange ideology interacts with community-level MCBs in predicting individual VCCBs provides support for the interactionist perspective in the context of VCCs. The results suggest that exchange ideology reduces the performance of VCCBs and such effects become stronger in VCCs where MCBs are rare rather than prevalent. On the other hand, the negative impact of exchange ideology on VCCBs is close to nil for the VCCs with high MCBs. Contrary to expectations, the cross-level moderation of MCBs on the relationship between prosocial values and VCCBs was not supported. That is, prosocial values seem to play an important role in shaping VCCBs, regardless of the level of MCBs. According to Rioux and Penner (2001), prosocial values tend to be an enduring disposition that occurs across different situations. That is, prosocial values could be one personality trait that can make individuals less susceptible to influences from one's social context. These findings highlight how social others can serve as an influential context to individuals' participative behaviors in VCCs, as well as provide empirical support to the argument that successful operation of VCCs may derive from multiple-level factors (Rothaermel and Sugiyama, 2001).

### 5.2 *Implications for practitioners and consumers*

The findings offer several key insights for consumers and practitioners because both groups are potential organizers and/or moderators for VCCs such as internet forums and bulletin boards. First, the VCC moderators must take into account the participants' dispositions on reciprocity if they intend to exploit their online resources by encouraging participants' co-creation. While participants' individual dispositions are beyond recruiting control and difficult to change, it is important for the VCC moderators to create positive cues in the shared context to influence participants' perceptions of exchange relationships. Moderators should make more efforts to consider practices that promote justice perceptions and perceived support in order to increase their felt obligations because individuals with a high level of exchange ideology pay particular attention to what others are obligated to provide. Once exchange ideology becomes the dominant value hold by consumers participating in a VCC, it will cause the VCC to be the predicament of "cyber ghost towns." Second, the vitality and longevity of communities are depended on "residents" participation; thus, VCC moderators should design and provide varieties of activities in cultivating participants' VCCBs. The findings also suggest that actions should be taken to

effectively attract consumers high in prosocial values because they will be major contributors in VCCs not only in terms of performing VCCBs but also in terms of becoming exemplary models for observational learning.

Third, members' interaction experience reflects the importance of social embeddedness in an online context. VCC moderators should consider investing resources in fostering a norm of MCBs if they want to induce VCCBs from the participants. They can attempt to create conditions that will make the development of community-level MCBs more likely. Literature on group norms suggests that group members with higher level status have great impact on the formation of group norms because their behaviors serve as guidance to indicate whether certain conduct within the context is normative (Ehrhart and Naumann, 2004). Also, prototypical members in the group are influential because other group members view such individuals as the best representatives of the group (Ehrhart and Naumann, 2004). Accordingly, VCC moderators should identify VCC members who may be particularly influential in the development of MCBs, such as those with the aforementioned characteristics, and strive to encourage their performance on VCCBs because those behaviors performed by them will make such conduct appear as normative for the VCC as a whole. These practices are important given the potential influences of MCBs to model a number of favorable behaviors toward the VCC (i.e. helping others, providing feedback, and sportsmanship) and to attenuate the adverse effect of consumers' inclinations to prefer a *quid pro quo* basis of exchange (i.e. exchange ideology) while participating in VCCs.

Finally, other than hosting an VCC in which the company can facilitate discussions among consumers, business marketers may also benefit by extracting useful knowledge from other VCCs. VCCs represent a major source of valuable information that retailers and manufacturers usually seek to obtain from expensive consumer surveys and interviews. Given discussants in VCCs are willing to disclose sensitive information (e.g. cravings, desires, motives) that cannot be easily retrieved by means of traditional methods of consumer research, business marketers, and researchers need to select the VCCs for monitoring and facilitating consumer conversations. Thus, marketers may use the level of a VCC's MCBs or the proportion of participants with strong prosocial values or weak exchange ideology as criteria for screening the target communities for monitoring consumer discussions.

### 5.3 Limitations and future research

In interpreting the findings of this study, limitations must be considered. First, this study represents the first that we are aware of to apply multi-level theory and method to investigate consumer participation in VCC settings. Although the proposed model explains a good portion of the variance in VCCBs, this study did not include other antecedents of VCCBs at individual and contextual levels. Factors, such as the Big Five personality and community climate, could influence individual VCCBs at different levels. Future research should strive to identify and investigate other drivers that contribute to consumers' VCCBs. Second, the results addressing the cross-level moderation effect of MCBs provide support for the situational strength theory, but the hypothesized effect occurs only in explaining the contribution of exchange ideology on VCCBs. This result suggests that the interaction between personality and contextual variables in the context of predicting VCCBs may depend on the variables in question. Future study should consider exploring contextual factors that may reduce or amplify the expected personality-behavior linkage, as well as the personality variables that are susceptible to the contextual influences in VCC settings. Third, this study includes only

leisure-oriented activities of VCCs (i.e. travel and gourmet), which may limited the findings' generalizability. It is necessary to have future replication to ensure confidence in the stability and generalizability of the findings by conducting research in VCCs organized for other products or services. Finally, this study employs a cross-sectional design to collect consumers' self-report data. In order to faithfully capture the complex, dynamic interaction and long-term relationships of participative behaviors, future investigation should strive to conduct a longitudinal design with multi-source data to ensure the causal inference.

## Notes

1. We select internet forum and bulletin boards based on the following guidelines: first, the VCC must have at least ten postings per day over a randomly selected three-day period. Second, the VCC must have at least 15 different individuals postings over a randomly selected three-day period. Third, at least 80 percent of postings must have at least one reply over a randomly selected three-day period.
2. Due to the agreement of anonymity, we could not release the list of participative VCCs.

## References

- Abrantes, J.L., Seabra, C., Lages, C.R. and Jayawardhena, C. (2013), "Drivers of in-group and out-of-group electronic word-of-mouth (eWOM)", *European Journal of Marketing*, Vol. 47 No. 7, pp. 1067-1088.
- Alon, A., Brunel, F. and Siegal, W.S. (2005), "Ritual behavior and community life cycle: exploring the social psychological roles of net rituals in the development of online consumption communities", in Haugvedt, C., Machleit, K. and Yalch, R. (Eds), *Online Consumer Psychology: Understanding How to Interact with Consumers in the Virtual World*, Erlbaum, Hillsdale, NJ, pp. 5-33.
- Arbuckle, J.L. (2003), *Amos 5.0 Update to the Amos User's Guide*, Smallwaters Corporation, Chicago, IL.
- Asher, H.B. (1983), *Causal Modeling*, Sage Publications, CA.
- Bagozzi, R.P. and Dholakia, U.M. (2002), "Intentional social action in virtual communities", *Journal of Interactive Marketing*, Vol. 16 No. 2, pp. 2-21.
- Bandura, A. (1977), *Social Learning Theory*, Prentice-Hall, Englewood Cliffs, NJ.
- Bateman, P.J., Gray, P.H. and Butler, B.S. (2011), "Research note – the impact of community commitment on participation in online communities", *Information Systems Research*, Vol. 22 No. 4, pp. 841-854.
- Beatty, J., C. Jr, Cleveland, J.N. and Murphy, K.R. (2001), "The relation between personality and contextual performance in 'strong' versus 'weak' situations", *Human Performance*, Vol. 14 No. 2, pp. 125-148.
- Bettencourt, L.A. (1997), "Customer voluntary performance: customers as partners in service delivery", *Journal of Retailing*, Vol. 73 No. 3, pp. 383-407.
- Bliese, P.D. (2000), "Within-group agreement, non-independence, and reliability: implications for data aggregation and analysis", in Klein, K.J. and Kozlowski, S.W. (Eds), *Multilevel Theory, Research, and Methods in Organizations: Foundations, Extensions, and New Directions*, Jossey-Bass, San Francisco, CA, pp. 349-381.
- Bommer, W., Dierdorff, E.C. and Rubin, R.S. (2007), "Does prevalence mitigate relevance? The moderating effect of group-level OCB on employee performance", *Academy of Management Journal*, Vol. 50 No. 6, pp. 1481-194.



- Borman, W.C., Penner, L.A., Allen, T.D. and Motowidlo, S.J. (2001), "Personality predictors of citizenship performance", *International Journal of Selection and Assessment*, Vol. 9 Nos 1-2, pp. 52-69.
- Brodie, R.J., Ilic, A., Juric, B. and Hollebeek, L. (2013), "Consumer engagement in a virtual brand community: an exploratory analysis", *Journal of Business Research*, Vol. 66 No. 1, pp. 105-114.
- Bryk, A.S. and Raudenbush, S.W. (1992), *Hierarchical Linear Models: Applications and Data Analysis Methods*, Sage, Newbury Park, CA.
- Casaló, L.V., Flavián, C. and Guinaliú, M. (2010), "Antecedents and consequences of consumer participation in on-line communities: the case of the travel sector", *International Journal of Electronic Commerce*, Vol. 15 No. 2, pp. 137-167.
- Chan, K.W. and Li, S.Y. (2010), "Understanding consumer-to-consumer interactions in virtual communities: the salience of reciprocity", *Journal of Business Research*, Vol. 63 Nos 9-10, pp. 1033-1340.
- Chang, A., Hsieh, S.H. and Tseng, T.H. (2013), "Online brand community response to negative brand events: the role of group eWOM", *Internet Research*, Vol. 23 No. 4, pp. 486-506.
- Chen, G.L., Yang, S.C. and Tang, S.M. (2013), "Sense of virtual community and knowledge contribution in a P3 virtual community: motivation and experience", *Internet Research*, Vol. 23 No. 1, pp. 4-26.
- Cropanzano, R. and Mitchell, M.S. (2005), "Social exchange theory: an interdisciplinary review", *Journal of Management*, Vol. 31 No. 6, pp. 874-900.
- De Dreu, C.K. and Nauta, A. (2009), "Self-interest and other-orientation in organizational behavior: implications for job performance, prosocial behavior, and personal initiative", *Journal of Applied Psychology*, Vol. 94 No. 4, pp. 913-926.
- Ehrhart, M.G. and Naumann, S.E. (2004), "Organizational citizenship behavior in work groups: a group norms approach", *Journal of Applied Psychology*, Vol. 89 No. 6, pp. 960-974.
- Eisenberger, R., Huntington, R., Hutchison, S. and Sowa, D. (1986), "Perceived organizational support", *Journal of Applied Psychology*, Vol. 71 No. 3, pp. 500-507.
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Groth, M. (2005), "Customers as good soldiers: examining citizenship behaviors in internet service deliveries", *Journal of Management*, Vol. 31 No. 1, pp. 7-27.
- Hagel, J. and Armstrong, A. (1997), *Net Gain: Expanding Markets through Virtual Communities*, Harvard Business School Press, Boston, MA.
- Hars, A. and Ou, S. (2002), "Working for free? Motivations for participating in open-source projects", *International Journal of Electronic Commerce*, Vol. 6 No. 3, pp. 23-37.
- Hays, R.D., Hayashi, T. and Stewart, A.L. (1989), "A five-item measure of socially desirable response set", *Educational and Psychological Measurement*, Vol. 49 No. 3, pp. 629-636.
- Henri, F. and Pudelko, B. (2003), "Understanding and analyzing activity and learning in virtual communities", *Journal of Computer Assisted Learning*, Vol. 19 No. 4, pp. 474-487.
- Hoffman, D.A. (1997), "An overview of the logic and rationale of hierarchical linear models", *Journal of Management*, Vol. 23 No. 6, pp. 723-744.
- Hofmann, D.A. and Gavin, M.B. (1998), "Centering decisions in hierarchical linear models: implications for research in organizations", *Journal of Management*, Vol. 24 No. 5, pp. 623-641.

- Hox, J. (2002), *Multilevel Analysis: Techniques and Application*, Lawrence Erlbaum, Mahwah, NJ.
- James, L.R., Demaree, R.G. and Wolf, G. (1993), "An assessment of within-group interrater agreement", *Journal of Applied Psychology*, Vol. 78 No. 2, pp. 306-309.
- Jang, H., Olfman, L., Ko, I., Koh, J. and Kim, K. (2008), "The influence of online brand community characteristics on community commitment and brand loyalty", *International Journal of Electronic Commerce*, Vol. 12 No. 3, pp. 57-80.
- Klein, K.J., Bliese, P.D., Kozlowski, S.W.J., Dansereau, F., Gavin, M.B., Griffin, M.A., Hofmann, D.A., James, L.R., Yammarino, F.J. and Bligh, M.C. (2000), "Multilevel analytical techniques: commonalities, differences, and continuing questions", in Klein, K.J. and Kozlowski, S.W.J. (Eds), *Multilevel Theory, Research, and Methods in Organizations: Foundations, Extensions, and New Directions*, Jossey-Bass, San Francisco, CA, pp. 512-523.
- Kozinets, R.V. (1999), "E-tribalized marketing?: the strategic implications of virtual communities of consumption", *European Management Journal*, Vol. 17 No. 3, pp. 252-264.
- Kozlowski, S.W.J. and Klein, K.J. (2000), "A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes", in Klein, K.J. and Kozlowski, S.W.J. (Eds), *Multilevel Theory, Research, and Methods in Organizations: Foundations, Extensions, and New Directions*, Jossey-Bass, San Francisco, pp. 3-90.
- Ladd, D. and Henry, R. (2000), "Helping coworkers and helping the organization: the role of support of perceptions, exchange ideology, and conscientiousness", *Journal of Applied Psychology*, Vol. 30 No. 10, pp. 2028-2049.
- Lewin, K. (1951), *Field Theory in Social Science*, Harper and Brothers, New York, NY.
- Ma, M. and Agarwal, R. (2007), "Through a glass darkly: information technology design, identity verification, and knowledge contribution in online communities", *Information Systems Research*, Vol. 18 No. 1, pp. 42-67.
- MacKenzie, S.B., Podsakoff, P.M. and Fetter, R. (1993), "The impact of organizational citizenship behavior on evaluations of salesperson performance", *Journal of Marketing*, Vol. 57 No. 1, pp. 70-80.
- Meglino, B.M. and Korsgaard, M.A. (2007), "The role of other orientation in reactions to job characteristics", *Journal of Management*, Vol. 33 No. 1, pp. 57-83.
- Meyer, R., Dalal, R.S., José, I.J., Hermida, R., Chen, T.R., Vega, R.P., Brooks, C.K. and Khare, V.P. (2014), "Measuring job-related situational strength and assessing its interactive effects with personality on voluntary work behavior", *Journal of Management*, Vol. 40 No. 4, pp. 1010-1041.
- Mischel, W. (1977), "The interaction of person and situation", in Magnusson, D. and Endler, N.S. (Eds), *Personality at the Crossroads: Current Issues in Interactional Psychology*, Erlbaum, Hillsdale, NJ, pp. 333-352.
- Mischel, W. (2004), "Toward an integrative science of the person", *Annual Review of Psychology*, Vol. 55 No. 1, pp. 1-22.
- Molm, L.D., Takahashi, N. and Peterson, G. (2003), "In the eye of the beholder: procedural justice in social exchange", *American Sociological Review*, Vol. 68 No. 1, pp. 128-152.
- Moorman, R.H. and Blakely, G.L. (1995), "Individualism-collectivism as an individual difference predictor of organizational citizenship behavior", *Journal of Organizational Behavior*, Vol. 16 No. 2, pp. 127-142.
- Organ, D.W. (1988), *Organizational Citizenship Behavior: The Good Soldier Syndrome*, Lexington Books, Lanham, MD.

- Peters, L.H. and O'Connor, E.J. (1980), "Situational constraints and work outcomes: the influences of a frequently overlooked construct", *Academy of Management Review*, Vol. 5 No. 3, pp. 391-398.
- Podsakoff, P.M. and MacKenzie, S.B. (1994), "Organizational citizenship behaviors and sales unit effectiveness", *Journal of Marketing Research*, Vol. 31 No. 3, pp. 351-363.
- Podsakoff, P.M., Ahearne, M. and MacKenzie, S.B. (1997), "Organizational citizenship behavior and the quantity and quality of work group performance", *Journal of Applied Psychology*, Vol. 82 No. 2, pp. 262-270.
- Podsakoff, P.M., MacKenzie, S.B., Paine, J.B. and Bachrach, D.G. (2000), "Organizational citizenship behaviors: a critical review of the theoretical and empirical literature and suggestions for future research", *Journal of Management*, Vol. 26 No. 3, pp. 513-563.
- Postmes, T., Spears, R. and Lea, M. (2000), "The formation of group norms in computer-mediated communication", *Human Communication Research*, Vol. 26 No. 3, pp. 341-371.
- Rheingold, H. (1993), *Community: Homesteading on the Electronic Frontier*, Harper Collins, MA and New York, NY.
- Ridings, C., Gefen, D. and Arinze, B. (2002), "Some antecedents and effects of trust in virtual communities", *Journal of Strategic Information Systems*, Vol. 11 Nos 3-4, pp. 271-295.
- Rioux, S.M. and Penner, L.A. (2001), "The causes of organizational citizenship behavior: a motivational analysis", *Journal of Applied Psychology*, Vol. 86 No. 6, pp. 1306-1314.
- Rosenbaum, M.S. and Massiah, C.A. (2007), "When customers receive support from other customers: exploring the influence of intercustomer social support on customer voluntary performance", *Journal of Service Research*, Vol. 9 No. 3, pp. 257-270.
- Rothaermel, F. and Sugiyama, S. (2001), "Virtual internet communities and commercial success: individual and community-level theory grounded in the atypical case of TimeZone.com", *Journal of Management*, Vol. 27 No. 3, pp. 297-312.
- Salancik, G.R. and Pfeffer, J. (1978), "A social information processing approach to job attitudes and task design", *Administrative Science Quarterly*, Vol. 23 No. 2, pp. 224-253.
- Schnake, M.E. and Dumler, M.P. (2003), "Levels of measurement and analysis issues in organizational citizenship behavior research", *Journal of Occupational and Organizational Psychology*, Vol. 76 No. 3, pp. 283-301.
- Si, S.X. and Cullen, J.B. (1998), "Response categories and potential cultural bias: effects of an explicit middle point in cross-cultural surveys", *International Journal of Organizational Analysis*, Vol. 6 No. 3, pp. 218-230.
- Takeuchi, R., Yun, S. and Wong, K.F.E. (2011), "Social influence of a coworker: a test of the effect of employee and coworker exchange ideologies on employees' exchange qualities", *Organizational Behavior and Human Decision Processes*, Vol. 115 No. 2, pp. 226-237.
- Tepper, B.J., Duffy, M.K., Hoobler, J. and Ensley, M.D. (2004), "Moderators of the relationships between coworkers' organizational citizenship behavior and fellow employees' attitudes", *Journal of Applied Psychology*, Vol. 89 No. 3, pp. 455-465.
- Tsai, H.T., Huang, H.C. and Chiu, Y.L. (2012), "Brand community participation in Taiwan: examining the roles of individual-, group-, and relationship-level antecedents", *Journal of Business Research*, Vol. 65 No. 5, pp. 676-684.
- Van Dyne, L., Graham, J.W. and Dienesch, R.M. (1994), "Organizational citizenship behavior: construct redefinition, measurement, and validation", *Academy of Management Journal*, Vol. 37 No. 4, pp. 765-802.

- Wasko, M.M. and Faraj, S. (2000), "It is what one does: why people participate and help others in electronic communities of practice", *Journal of Strategic Information Systems*, Vol. 9 Nos 2-3, pp. 155-173.
- Wasko, M.M. and Faraj, S. (2005), "Why should I share? Examining social capital and knowledge contribution in electronic communities of practice", *MIS Quarterly*, Vol. 29 No. 1, pp. 35-57.
- Wenger, E., McDermott, R.A. and Snyder, W. (2002), *Cultivating Communities of Practice: A Guide to Managing Knowledge*, Harvard Business Press, Boston, MA.
- Wiertz, C. and de Ruyter, K. (2007), "Beyond the call of duty: why customers contribute to firm-hosted commercial online communities", *Organization Studies*, Vol. 28 No. 3, pp. 347-376.
- Witt, L.A., Kacmar, K.M. and Andrews, M.C. (2001), "The interactive effects of procedural justice and exchange ideology on supervisor-rated commitment", *Journal of Organizational Behavior*, Vol. 22 No. 5, pp. 505-515.
- Wood, R. and Bandura, A. (1989), "Social cognitive theory of organizational management", *Academy of Management Review*, Vol. 14 No. 3, pp. 361-383.
- Yen, H.R., Hsu, S.H.Y. and Huang, C.Y. (2011), "Good soldiers on the web: understanding the drivers of participation in online communities of consumption", *International Journal of Electronic Commerce*, Vol. 15 No. 4, pp. 89-120.
- Zhou, J., Zuo, M., Yu, Y. and Chai, W. (2014), "How fundamental and supplemental interactions affect users' knowledge sharing in virtual communities? A social cognitive perspective", *Internet Research*, Vol. 24 No. 5, pp. 566-586.

(The Appendix follows overleaf.)

Construct items	Factor loadings
<i>Prosocial values</i> (please rate each statement in terms of its indicative of your interpersonal style)	
If I help others, it is because ...	
1. I feel it is important to help those in need	0.81
2. I am concerned about others' feelings	0.80
3. I want to help people in any way I can	0.82
4. It is easy for me to help others	0.75
5. I like interacting with others	0.82
6. I have fun in dealing with other people	0.80
7. I hope to be friendly with others	0.82
8. I can put myself in other people's shoes	0.77
<i>Exchange ideology</i>	
1. My willingness to help other people depends partly on their behavior toward me	0.74
2. I reduce how much I do for others if I am treated badly by other people in the same organization	0.73
3. How much I help other members will depend on how they treat me	0.88
4. My effort to assist other members is highly affected by how much they assist me	0.85
5. The failure of others to appreciate my assistance reduce my willingness to offer help	0.78
<i>Members citizenship behaviors (MCBs)</i>	
Helping others	
1. Members of this online community help each other with questions	0.71
2. Members of this online community explain to other members how to use the service correctly	0.79
3. When members see a member in this online community being taken advantage of, they feel kind of protective toward him/her (e.g. seeking for assistance)	0.83
4. When members see a member in this online community being treated unfairly, they feel kind of protective toward him/her	0.84
Providing feedback	
1. If members notice a problem in this online community, they inform the community manager, or other members, even if it does not affect them	0.77
2. Members make constructive suggestions to the community's manager on how to improve its service.	0.87
3. Members let the community's manager know of ways that they can better serve their needs	0.87
Sportsmanship	
1. Members spend a lot of time complaining about trivial matters (reverse scored)	0.74
2. Members tend to make problems bigger than they are (reverse scored)	0.82
3. Members always focus on what is wrong with his/her situation, rather than the positive side of it (reverse scored)	0.79
<i>Virtual community citizenship behaviors (VCCBs)</i>	
Recommendation	
1. I refer fellow students or coworkers to this online community	0.83
2. I recommend this online community to people interested in the community' products/services	0.85

**Table A1.**  
Summary of  
measurement scales

(continued)

Construct items	Factor loadings
3. I encourage my friends and relatives to work out in this online community	0.91
4. I say positive things about this online community to others	0.90
Helping others	
1. I help others with questions in this community	0.74
2. I explain to other members how to use the service correctly	0.81
3. When I see a member in this online community being taken advantage of, I feel kind of protective toward him/her (e.g. seeking for assistance)	0.80
4. When I see a member in this online community being treated unfairly, I express my concern about him/her	0.85
5. I often feel that I have a special responsibility to assist other members in this online community when they need help	0.84
6. I frequently look for opportunities to help other members in this online community	0.81
Providing feedback	
1. If I notice a problem in this online community, I inform the community manager, or other members, even if it does not affect me	0.83
2. I make constructive suggestions to the community's manager on how to improve its service	0.90
3. I let the community's manager know of ways that they can better serve my needs	0.87
Sportsmanship	
1. I spend a lot of time complaining about trivial matters (reverse scored)	0.88
2. I tend to make problems bigger than they are (reverse scored)	0.83
3. I always focus on what is wrong with my situation, rather than the positive side of it (reverse scored)	0.78
Social desirability	
1. I am always courteous, even to people who are disagreeable	0.82
2. No matter who I am talking to, I am always a good listener	0.78
<b>Note:</b> All loadings are standardized and significant at $p < 0.001$	

Table AI.

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