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ENHANCING THE COMMITMENT TO VIRTUAL COMMUNITY: A BELIEF AND FEELING BASED APPROACH

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Abstract

Web-based virtual communities are regarded as potential channels for conducting e-commerce because of their capabilities in building long-term relationships between the vendor and the members. A virtual community (VC) provides repeat points of contact to the customer, thus increasing the stickiness of the Web site. This ability of a VC to retain people or customers to the Website of an online vendor is useful for relationship management, central to which is the relationship commitment of the customers to the VC. By having a community of committed customers, a vendor can obtain numerous benefits especially relevant to relationship marketing (like enhanced store image and loyalty). This study examines the factors which enhance online customers' relationship commitment to the VC from the balanced beliefs and feelings perspective. By adapting the behavior model developed by Fazio et al. (1978), this study examines the roles of beliefs and feelings of the customer in the formation of commitment to a VC. This study then offers theoretical reasoning for the balanced effects of customers' beliefs and feelings on enhancing the commitment to the VC and discusses the theoretical and practical implications of this study.

Keywords: Virtual community, commitment, belief, feeling

Introduction

Virtual communities (VCs) are those places on the Web where people can find and then electronically talk to others with similar interests. The most successful e-commerce ventures are the community-based ones on both commercial and non-commercial fronts. On the commercial front, Internet auction and group purchasing are successful initiatives. For example, eBay has an Internet auction community of 114 million registered members (out of which 48 million are active users) as of 2004. On the non-commercial front, there are numerous examples of successful initiatives like tripod, geocities, talkcity, yahoo, and msn. The rapid growth of VCs on the Internet has led the surge of interest among researchers in this area (Hiltz and Wellman 1997). VCs are beneficial for knowledge sharing among members. The VC service provider can benefit by the information base available from the conversations of the members. VCs are also valuable to the members in that the members can gain knowledge of their area of interest, have fun, be entertained, and develop relationships with other members having similar interests.

In-depth understanding of the VC can help in addressing critical issues related to marketing. VCs have strong potential for relationship marketing (like enhancing personalization, differentiation, and customization) as they provide repeat points of contact to their customers (Zingale and Arndt 2001). Lack of repeat points of contact is a major hindrance to relationship marketing on the Internet. This potential of VCs for relationship management has also gained the attention of researchers. A few exploratory studies have been conducted which report the usefulness of VCs to e-commerce (e.g., Rothaermel and Sugiyama 2001) and relationship marketing (Zingale and Arndt 2001). However, the field lacks systematic research as to how VCs can be useful for relationship management. The primary focus of research on VCs has been on studying their formation and evolution and their application to insurance, health care, and education.

Relationship commitment is central to relationship management (Morgan and Hunt 1994) and, therefore, understanding the development of the customer's commitment in a VC is necessary to understand the role of VCs in facilitating relationship

management. Commitment to a VC is characterized by the member's helping behavior and active participation (intense interaction) in the VC activities based on strong psychological attachment to the VC. According to the research on consumer behavior (Batra and Ahtola 1990), both cognitive and affective factors play a significant role in determining the customer's attitude toward behavior (interaction in a VC). When customers have a positive attitude toward interaction in the VC, they may develop commitment to the VC.

Consumer behavior studies in information systems, particularly those based on the technology acceptance model (Davis 1989; Davis et al. 1989) and its variants, studied the consumer's attitude toward behavior primarily from the cognitive perspective. Later, Venkatesh (1999) proposed the role of intrinsic motivation (affective factor) in creation of favorable user perceptions toward IT adoption. The importance of cognition or affect or both in determining the consumer's attitude toward IT adoption also depends on the nature of the IT product. For example, adoption of Word or Excel would be driven primarily by cognitive factors (like usefulness), whereas the adoption of computer games would be driven primarily by affective factors (like fun, enjoyment). In VCs, members develop attachment to the community and sometimes become addicted (Hiltz and Wellman 1997). This implies that affect plays an important role in the formation of commitment to the VCs. Noting the importance of balanced effects of belief and feeling, this study aims to examine the formation of the customer's relationship commitment to the VC, which is managed by an online retailer. Specifically, there are two research questions: (1) *What are the belief and feeling related antecedents of customer's commitment to the VC?* (2) *How do belief and feeling lead to the enhancement of commitment to a VC?*

The theoretical framework of this research is based on Fazio et al.'s (1978) belief→attitude→behavior model, which is modified to include affect. Beliefs are based on rational deliberation about the VC and affect is based on one's feelings like enjoyment, fun, or affection for the VC. Commitment to the VC is the behavioral manifestation of attitude toward the VC. The primary contribution of this study is to understand enhancing a customer's commitment to the VC from the balanced beliefs and feelings perspective. Especially, this study contributes to the understanding of the role of affect in IS consumer behavior.

Virtual Community

Community, location, bonding, and shared objective or purpose are core elements of a VC. Primarily, VCs are formed for non-commercial purposes (like making relationships, chatting, having fun, and sharing common interests). However, there are also VCs where members can conduct transactions, auctions, and commerce. Usage of VCs for commercial purposes is increasing due to their potential for relationship management (Preece and Diane 2003). Businesses seek to develop deeper and broader relationships with their customers and customers seek to satisfy their basic social need for communication and information. The convergence of these trends provides opportunity for enterprises to sponsor focused VCs, where they can expand their businesses with their customers (Zingale and Arndt 2001). Such VCs are especially useful for testing new product ideas, involving customers in product development, monitoring customers' purchase patterns, and gauging early demand for products (Preece and Diane 2003).

Both the belief and feeling factors affect the customer's attitude toward interaction in a VC. The beliefs factors, like knowledge sharing, information gathering, and sharing one's interests, are typical of the interest-based VCs, while relationship-based VCs promote relationship building among members. On the feeling side, members find pleasure in interacting with other members, especially when such interaction is informal (Hiltz and Wellman 1997) like that in the relationship-based VCs. According to Armstrong and Hagel (1996), by fostering relationships and networks of interest, commercial companies can make their VCs highly competitive. VCs formed around an interest or a specific age group are abundant on the Internet and are successful in terms of adding members to the VC (for example, *timezone.com* and *motleyfool.com*). On the commercial side, VCs like eBay provide forums for customers who are interested mainly in auctions. Usually, such interactions are formal and, therefore, do not promote relationship commitment to the VC. Commercial companies attempt to provide a fun-filled experience of interaction to their customers. The Kodak Company's Website, for example, has an embedded discussion board that serves as a gathering place for discussion of photographs and visual storytelling (Preece and Diane 2003). This implies that both belief and feeling factors play an important role in promoting the relationship commitment of the member to the VC.

Theoretical Framework

The topic of attitudes occupies a central position in research on consumer behavior (Fazio et al 1989) and is arguably the most important construct in social psychology (Haddock and Zanna 2000). Companies attempt to create a positive attitude toward the product through advertising (Hirschman and Holbrook 1982). The assumption underlying such attempts is that the development

of positive attitudes produces a corresponding change in behavior. Therefore, to understand the behavior of a consumer, his/her attitude toward the performance of that behavior should be understood first.

Study of attitude formation has been dominant in the social psychology literature (Haddock and Zanna 2000). Past research reveals either a unitary or a multicomponent model (Zanna and Rempel 1988) of the attitude construct. Fishbein and Ajzen (1975) proposed the unitary model of attitude construct (expectancy-value models like the theory of reasoned action), proposing it as an affective response based upon the favorability of cognitive beliefs. Central to expectancy-value models of attitudes, a person holds many beliefs about an attitude object; an object is seen as having many attributes (Ajzen 2001). Associated with each belief is an evaluative response. Attitude is a function of a person's beliefs about the object and the evaluative response. However, this model was considered to be an oversimplification of the attitude concept as it underemphasized the impact of affective information in guiding attitudes (Eagly and Chaiken 1993).

Multicomponent models suggest that attitudes are overall evaluations of objects that are derived from cognitive, affective and behavioral sources of information. *Cognitive information* refers to *beliefs* or thoughts about an attitude object; *affective information* refers to *feelings or emotions* associated with an attitude object; and *behavioral information* refers to *past behaviors or behavioral intention* with respect to an attitude object (Haddock and Zanna 2000). Beliefs differ from feelings in that they are formed through evaluation of the attributes of the attitude object and require thinking. Ajzen (2001) modified his definition of attitude as an overall evaluation of performing the behavior in question and included the affective (affect/feeling) component of attitude along with the cognitive (belief) component. Ajzen defined attitude as a summary evaluation of a psychological object, captured in such attribute dimensions as good-bad (overall dimension), harmful-beneficial (cognitive dimension), pleasant-unpleasant, and likable-dislikable (affective dimensions). Being evaluative in nature, *attitude* is distinct from *affect* and contains both the cognitive and affective elements (Batra and Ahtola 1990). Affect, on the other hand, comprises a class of mental phenomena uniquely characterized by a consciously experienced, subjective feeling state, commonly accompanied by emotions (Westbrook 1987).

The multicomponent view of attitude has been widely adopted in marketing (e.g., Batra and Ahtola 1990). In IS research, however, the multicomponent model of attitude has not been given enough attention. The role of affect in influencing user attitude was proposed in recent research. For example, Venkatesh (1999) proposed intrinsic motivation (similar to affect) as a key factor in influencing user perceptions. This research adopts the multicomponent model of attitude toward interaction in the VC. In the case of VCs, the role of beliefs and feelings is considered important in the formation of attitude toward the VC. Both the cognitive factors (like knowledge sharing, information gathering, and building relationships) and the affective factors (like pleasure of interaction, especially when it is informal) respectively affect customers' beliefs and feelings about interaction in the VC. The behavioral information is not considered as it requires past association with the VC, which changes with the VC. The proposed theoretical model is shown in Figure 1. Links 1 and 2 were explained earlier in the formation of attitude. Links 3, 4, and 5 are explained below.

Fazio et al. (1978) proposed the attitude-behavior model, according to which behavior in any given situation is a function of an individual's immediate perception of the attitude object in the context of the situation in which the object is encountered. In this model, how the event or decision is viewed by the subject is the main indicator of attitude, which eventually leads to a course of action. The attitude in this case is related to past memory and past experiences, which result in an evaluation of the object (decision). The attitude-to-behavior influence depends on how much of the attitude is formed from past memory or past experience. This decision can be very long and thought out or routine. If the attitude is not derived directly from memory, then external cues help in the formation of attitude. In the case of VCs, the members develop a positive attitude toward interaction in the VC based on their cognitive (beliefs) and affective (feelings) perceptions. Commitment to a VC is characterized by intense interaction in the VC and is proposed as a behavioral outcome of positive attitude toward interaction in the VC.

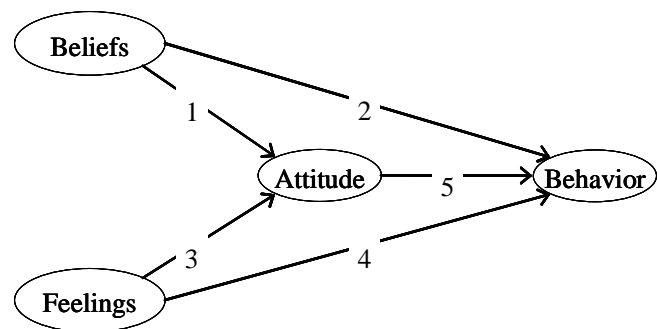


Figure 1. Framework of Belief-Feeling Based Behavior

Romer (2000) considered thinking-based mechanisms and feeling-based mechanisms as primary in determining behavior. Feeling-based mechanisms represent all possible mechanisms that produce pleasant or unpleasant sensation that is accessible to conscious awareness in performing the behavior. Thinking-based mechanisms require that the organism have a mental model about the behavior; that is, one evaluates the outcomes based on the attributes of information about the decision in question.

According to Allen et al (1992), emotions can be better predictors than attitude when the behavior is mandated (obviously attributable to a situational cause) or when the behavior is habituated. When the behavior is mandated, situational factors inhibit the development of causal attitudes and hence recollection of emotion is a superior predictor. When the behavior is habituated, it is no longer under volitional control and may become relatively autonomous of attitudes. However, the behavior may not be devoid of emotion, although the answer may vary with context. Attitudes may mediate the relationship between feelings and behavior, where feelings involving simple positive or negative feeling states. This affect, however, represents only a tiny subset of the emotions and feelings of interest (Hirschman and Holbrook 1982).

Research Model and Hypothesis

According to the attitude-behavior model (Fazio et al. 1978), a customer forms perceptions about interacting in the VC. The customer's perception would be based on how interacting in the VC would be useful to him/her and how much effort he/she would have to expend interacting in the VC. VCs are useful for knowledge sharing, information gathering, building like-minded friendships, building relationships, sharing experiences, buying and selling, having fun, and creating new personalities, environments, or stories (Armstrong and Hagel 1996). Depending on one's perception about interaction in the VC, one would form a positive or negative attitude toward interaction in the VC. These perceptions could be divided into cognitive perceptions (beliefs—functional usefulness, social usefulness and system quality) and affective perceptions (feelings—pleasure and arousal). The effort the customer would have to expend interacting in the VC would be in terms of the usability of the VC. Different people interact differently in a VC ranging from lurking to being very committed to the activities in the VC. Commitment to the VC is an intense level of interaction in the VC and can be considered as the outcome of one's attitude toward interaction in the VC. Based on the theoretical framework, the proposed research model is depicted in Figure 2.

Attitude Toward a VC

Attitude toward a VC is a customer's overall evaluation of the VC based on its attributes directed toward interaction in the VC. Haddock and Zanna (2000) studied the multicomponent model of attitude and revealed that both cognitive information (beliefs) and affective information (feelings) are important in the prediction of social attitudes. As attitude consists of cognitive and affective components, the attributes of the VC are studied from both the cognitive (beliefs) and affective dimensions (feelings).

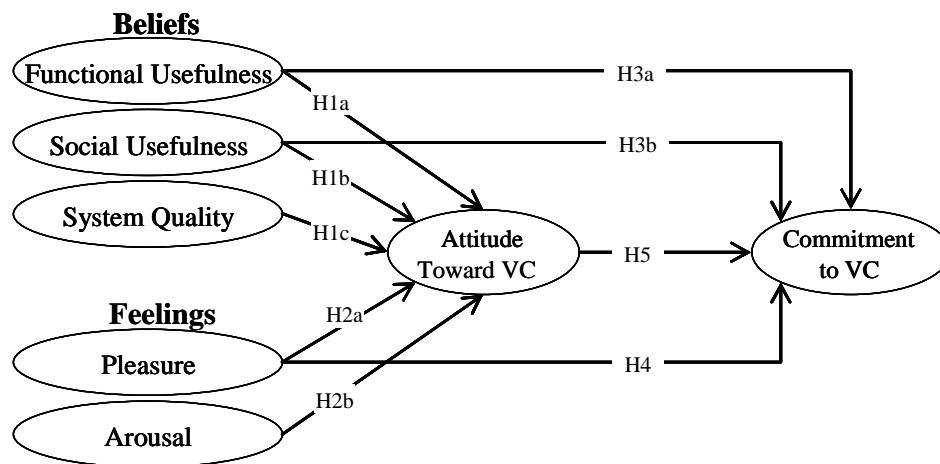


Figure 2. Proposed Research Model

Beliefs

Beliefs refer to the elements based on prior memory or direct experience, which lead to the formation of attitude toward certain behavior. Beliefs represent attributes of a technology which lead to the formation of attitude toward the acceptance or continuance of that technology. The relationship between belief and attitude has been supported by many theories like expectancy-value theories (Ajzen 2001) and the attitude-behavior process model (Fazio et al. 1978). Cognition has been considered as leading to attitude by many researchers (e.g., Haddock and Zanna 2000).

The cost-benefit paradigm of behavioral decision theory (Johnson and Payne 1985) provides theoretical support to the relationship between belief and attitude. The cost-benefit paradigm explains an individual's choice among various decision-making strategies as a cognitive trade-off between the effort required to employ the strategy (i.e., ease of use) and the quality (i.e., usefulness) of the resulting decision. Perceived usefulness and perceived ease of use have been widely used as beliefs leading to attitude toward IT acceptance (for example, Davis 1989). VCs create two different kinds of perceived usefulness, namely functional usefulness and social usefulness. Functional and social usefulness are considered differently, because VCs also support formation of relationships, apart from their functional benefits (like knowledge sharing and information gathering). This differentiates VCs from other IT products like Word and Excel, where benefits would be purely functional. The effort a person needs to put in interacting in a VC would be in terms of the usability or ease of use of the VC. System quality has been studied by IS researchers as representing a broader perspective of ease of use (McKinney et al. 2002). Usability is concerned with designing software so that people can interact and perform their tasks intuitively and easily. Software with good usability supports rapid learning, high skill retention, low error rates, and high productivity (Preece and Diane 2003).

Functional usefulness: The functional usefulness of an alternative is defined as the perceived benefits acquired from an alternative's capacity for functional, utilitarian, or physical performance (Sheth et al. 1991). It is similar to the usefulness construct of TAM (Davis 1989, Davis et al. 1989) and functional value (performance) of Sweeney and Soutar (2001).

A VC creates functional benefits in terms of gathering information, sharing knowledge, and sharing one's interests. According to the attitude-behavior model and expectancy-value theory, beliefs lead to the formation of attitude. This relationship is confirmed by previous research (e.g., Batra and Ahtola 1990). Hence,

H1a: Perceived functional usefulness of the VC is positively related to the attitude toward the VC.

Social usefulness: The social usefulness of an alternative is defined as the perceived benefits acquired from an alternative's association with one or more specific social groups (Sheth et al. 1991). Individual behavior is influenced by group membership, thus showing that social usefulness is an important indicator of a customer's attitude formation. It is similar to the social value construct of Sweeney and Soutar. Sheth et al. defined social value as the utility derived from the product's ability to enhance social self-concept. research in the domain of VCs confirms the importance of social relationships in the VC (e.g., Hiltz and Wellman 1997). VCs provide a platform where people can come together and discuss, find partners having similar interests, and form relationships with each other (Armstrong and Hagel 1996). Similar to the argument presented for functional usefulness, this relationship is theoretically supported by the attitude-behavior model and expectancy-value theory and has been confirmed by past research (e.g., Batra and Ahtola 1990). Hence,

H1b: Perceived social usefulness of the VC is positively related to attitude toward the VC.

System quality: System quality refers to the Website's performance in delivering information. It is similar to sacrifice or ease-of-use component used in TAM. Customers prefer Websites that are simple in design, fast to load, and easy to use (Reichheld and Schechter 2000), especially in the context of VCs. According to Davis (1989), an application perceived to be easier to use than another application is more likely to be accepted by users. VCs which offer easy navigation, simple design, and faster loading will be preferred by the members. Hence,

H1c: Perceived system quality of the VC is positively related to the attitude toward the VC.

Feelings

According to Oliver (1997), affect represents the feeling side of consciousness, as opposed to thinking, which taps the cognitive domain. Russell's (1980) circumplex model of affect represents the leading model conceptualizing affect in services literature

(e.g., Donovan and Rossiter 1982; Donovan et al. 1994; Oliver 1997). According to Oliver, Russell's pleasure-arousal-dominance (PAD) configuration is conceptually richer than other configurations in that the low arousal affects are given equal representation. Russell and Pratt (1980) later proposed a modification of the PAD configuration that deletes the dominance dimension as the evidence for dominance dimension of affect was not very convincing over a broad spectrum of situations. Russell and Pratt found that the two orthogonal dimensions of pleasure and arousal (pleasant-unpleasant, arousing-sleepy) were adequate to represent a person's emotional or affective responses to a wide range of environments. The PAD configuration allows for a greater range of positive emotions as compared to only joy, happiness, and interest in other emotion models (Oliver 1997) and hence is used in this research. Affect has been shown to have a substantial impact on the consumer's emotional evaluation of the service environment (attitude) and on "approach-avoidance" behavior (Donovan and Rossiter 1982; Donovan et al. 1994).

In the VC, customers experience enjoyment by interacting with other members in the community and become addicted to the VC (Hiltz and Wellman 1997; Rheingold 1993). The enjoyment is usually in form of sharing experiences with each other, being cared for, emotional support, offline meetings, feuds, love, and making friends (Rheingold 1993). Feelings thus refer to the enjoyment one experiences on being a part of the VC. Using the PAD configuration, this research proposes pleasure and arousal as components of feelings in a VC.

Pleasure refers to the degree to which the person feels good, joyful, or happy in the situation (Mehrabian and Russell 1974). In the context of the VC, pleasure is represented by the feelings of the customer about interacting in the VC. Members interact informally with each other, inquire about others, and give their suggestions to others, thus feeling happy in interacting in the VC. The positive perception of pleasure in the VC would, therefore, enhance the member's attitude toward interacting in the VC. This relationship has been supported by previous research (e.g., Batra and Ahtola 1990; Haddock and Zanna 2000). Hence,

H2a: Perceived pleasure in the VC is positively related to the attitude toward the VC.

Arousal refers to the degree to which a person feels excited, stimulated, alert, or active in the situation (Mehrabian and Russell 1974). In the context of the VC, arousal refers to the degree to which a customer feels excited to interact in the VC. Customer may get aroused to interact in the VC depending upon the type of interaction in the VC. For example, the Lands' End Website allows customers to choose their own model, thus arousing members to interact with the Website. This relationship has been supported by research (e.g., Haddock and Zanna 2000), which propose affect as an important predictor of attitude. Hence,

H2b: Perceived arousal in the VC is positively related to the attitude toward the VC.

Behavior

Morgan and Hunt (1994) defined relationship commitment as an exchange partner believing so as to warrant maximum efforts at maintaining the relationship; that is, the committed party believes that the relationship is worth working on to ensure that it endures indefinitely. Dwyer et al. (1987) identify customer commitment as the last stage in the process of developing relationships between buyer and seller and define it as an implicit or explicit pledge or relational continuity between exchange partners. Gundlach et al. (1995) proposed a three-component model of commitment: input component, attitudinal component, and a temporal dimension. *Input component* refers to an affirmative action taken by one party that creates a self-interest stake in the relationship and demonstrates something more than a mere promise. *Attitudinal component* signifies an enduring intention by the parties to develop and maintain a stable, long-term relationship. This can be recognized as the member's commitment to go beyond prescribed roles and perform above the call of duty. Existence of committed relationship implies action instinctively for the benefit of one another and is possible when parties share goals, values and an affective attachment. A *temporal dimension* highlights the fact that commitment means something only over the long-term, that is, the inputs and attitudes brought to the relationship must reveal consistency over time.

Commitment to the VC is considered as the behavioral outcome of the attitude toward interaction in the VC. Commitment to the VC is characterized by helping behavior and active participation in the VC based on strong psychological attachment to the VC. It is different from beliefs, feelings, and attitude, because it demands input on the part of the customer to the VC, thus signifying behavior. Also, commitment is formed later on the temporal dimension and is of a constant nature as opposed to the fleeting nature of beliefs and feelings. According to Hiltz and Wellman (1997), when the members interact over a long period of time with sufficient feelings, they become addicted to the VC, thus signifying commitment to the VC.

Morgan and Hunt proposed relationship benefits as the direct antecedent to relationship commitment in the context of partner firms. Partner firms that deliver superior benefits are highly valued and firms commit themselves to establishing, developing, and

maintaining relationships with such partners. Similarly, it can be argued that, when customers perceive positive benefits in a relationship, they would be willing to commit themselves to that relationship. In the context of the VC, the benefits are in the form of functional and social usefulness. In the context of organizations, commitment is brought about by a cognitive evaluation of the instrumental worth of a continued relationship with the organization, that is, by adding up gains and losses, pluses and minuses, or rewards and punishments (Morgan and Hunt 1994). The VC is a sort of organization in which commitment can be brought about by a cognitive evaluation of benefits (functional usefulness and social usefulness). Hence,

H3a: Perceived functional usefulness of the VC is positively related to the commitment to the VC.

H3b: Perceived social usefulness of the VC is positively related to the commitment to the VC.

As per PAD configuration, emotional responses either lead to approach or to avoidance behavior. Donovan and Rossiter (1982) tested this configuration in retail settings and found pleasure and arousal as significant predictors of intended shopping behavior within the store. In an extension of this study, Donovan et al. (1994) found pleasure as a significant predictor of extra time spent in the store and actual incremental spending. Arousal was found to vary in its effects and hence its relationship to commitment was not hypothesized in this research. Based on the perceived pleasure, customers may *approach* the VC with a desire to stay in, explore, interact, or enhance the environment or *avoid* the VC by leaving it, lurking, stopping communication with others, or hindering the performance and satisfaction of the community.

As per Allen et al.'s (1992) conceptualization, emotions influence behavior when the behavior is mandated or habituated. Commitment can't be considered as a mandated behavior as it is not necessary that all members will be committed to the VC. However, when the members become habituated to interaction in the VC, they will most likely become committed to the VC. Hence,

H4: Perceived pleasure in the VC is positively related to the commitment to the VC.

According to the attitude-behavior theory, attitude precedes behavior. This relationship is supported by expectancy-value theories of attitude and TAM. Members become committed to the VC when they have a strong positive attitude toward interaction in the VC. Committed behavior is characterized by member's active participation and helping behavior in the VC. Therefore, it can be argued that the members form commitment to the VC (behavior) based on their attitude toward interaction in the VC. Hence,

H5: Attitude toward the VC is positively related to the commitment to the VC.

Research Methodology and Results

Data Collection

This research used a survey approach for examining the model because of its suitability for establishing generalizability. A member of the VC was the unit of analysis of the survey. The survey items were adapted from existing validated measures to suit the VC context. The research variables were measured on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). The survey instrument is shown in Appendix B.

Empirical data were collected via an online survey on the Website of Urie.com for 2 weeks. Urie.com is a Korean online store that caters to mothers in relation to baby-care needs. It has around 400,000 registered members consisting mainly of women between 20 and 50. The Website of Urie.com has five sections: the community section (providing various discussion forums), expert section (providing expert consultation on parenting and related issues), mom and baby section (information provided by the company regarding pregnancy and baby-care issues), a shopping mall (for buying and selling products related to baby-care), and the Urie style section (company provided information on kid's clothing). Members are required to register with the company in order to use the VC of the Website.

The vendor sent an e-mail to all registered members of the VC to participate in the survey. This ensured that access to the survey was restricted to VC members. As an incentive, \$5 was paid to 200 randomly chosen respondents. A total of 459 subjects responded to the survey. Subjects having more than 6 months of experience were chosen, thus leaving 275 data points. Six months is a reasonably low time limit for a person to become familiar with the community and form good relationships with other members. The demographics are shown in Appendix A.

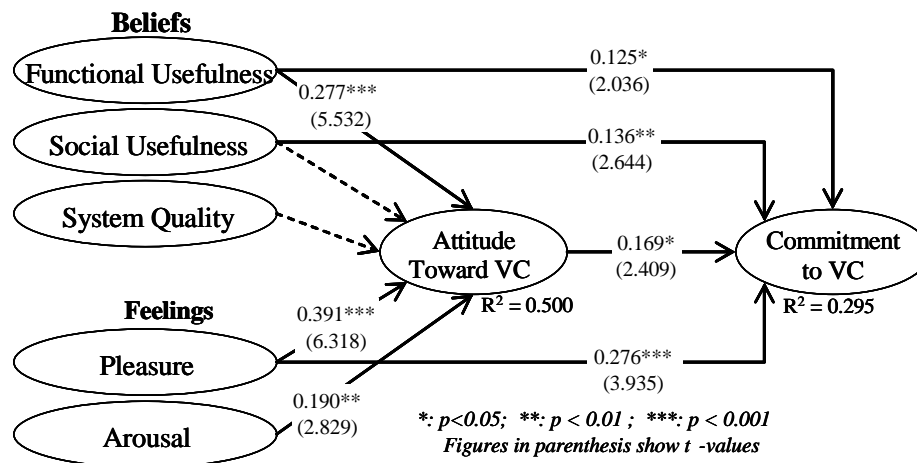


Figure 3. Results of Hypothesis Testing

Data Analysis and Results

The means, standard deviations, and reliabilities of the variables are shown in Appendix B. All variables show good reliabilities with all Cronbach's alphas greater than 0.70. To examine convergent and discriminant validity, principal component analyses with VARIMAX rotation was conducted. The analysis revealed eight factors with eigen-value greater than 1.0 in the initial solution (without rotation), the minimum being 1.09. All items were loaded on a distinct factor and explained a total variance of 71.64 percent. There was no evidence of any cross-loading except FUSE2. FUSE2 was also loaded on Factor 3 and hence dropped from further analysis. The factor loadings are shown in Appendix B. Thus the convergent and discriminant validity of the constructs is established.

The Pearson correlation analysis is shown in Appendix C. All correlations are significant. There is no threat of multicollinearity as the condition index is less than 30, VIF values are between 1 and 2, and tolerance is between 0 and 1.

Figure 3 shows the results of the multiple regression analyses. The results indicate that with attitude as the dependent variable, functional usefulness ($\beta = 0.277$, $p < 0.001$), pleasure ($\beta = 0.391$, $p < 0.001$) and arousal ($\beta = 0.190$, $p < 0.01$) are significant and with commitment as the dependent variable, functional usefulness ($\beta = 0.125$, $p < 0.05$), social usefulness ($\beta = 0.136$, $p < 0.01$), pleasure ($\beta = 0.276$, $p < 0.001$) and attitude ($\beta = 0.169$, $p < 0.05$) are significant. System quality ($\beta = 0.080$, $p < 0.1$) is significant with attitude at 90 percent confidence level. The model explains 50 percent variation in attitude and 29.5 percent variation in commitment.

Discussion

Members come together online and through interaction become committed to the VC. Attitude, beliefs (functional usefulness and social usefulness), and feelings (pleasure) were found to be significant predictors of relationship commitment. The effect of functional usefulness on commitment is significant and is consistent with the TAM model. Social usefulness is significant with commitment which implies that relationship building is an important part of the VC for developing commitment to the VC. Pleasure is significant in predicting commitment and is consistent with the findings of the PAD model.

The role of affect has been considered significant in understanding consumer behavior. This research proposed the belief-feeling framework as an extension of the belief-attitude-behavior framework by incorporating affect (feelings) in the framework to understand the formation of attitude and commitment to the VC. The results support the validity of our framework. Beliefs (functional usefulness) and feelings (pleasure and arousal) were found to be significant predictors of attitude toward the VC. The effect of functional usefulness on attitude is significant and is consistent with the TAM model. The effect of pleasure and arousal is significant in predicting attitude and is consistent with previous studies examining the role of affect in predicting attitude (e.g., Eagly and Chaiken 1993; Haddock and Zanna 2000).

The relationship of social usefulness with attitude was not supported. This relationship between social usefulness and attitude was tested separately and was found to be significant. However, R^2 value was very low (0.068) as against 0.399 for pleasure and 0.268 for functional usefulness. We suspect that the effect of social usefulness on attitude is overshadowed by the effect of pleasure and functional usefulness, which are more important to consumers. The practical significance is that customers consider functional aspects (like knowledge sharing and information gathering) and fantasy aspects (fun or enjoyment) of a VC as more important than social (relationship building) aspects. However, when it comes to developing commitment to the VC, building relationships is naturally important and, hence, social usefulness was found to significantly influence commitment to the VC. The relationship of system quality with attitude was not supported. This is probably due to the fact that, as the members become familiar with the system, they are less concerned about the system quality of the Website. They are more interested in more important factors like functional usefulness and pleasure.

The separate effect of belief and feelings on attitude was also examined. Beliefs explain 34.5 percent of variance in attitude and 25.4 percent of variance in commitment and feelings explain 42.5 percent of variance in attitude and 26.0 percent of variance in commitment. The contribution of belief and affect is almost similar and hence it was concluded that affect is a significant predictor of attitude and behavior. This finding is in conflict with Venkatesh et al. (2003), who concluded that any observed relationship between attitude and intention is spurious and results from the omission of the other key predictors (specifically, performance and effort expectancies). Venkatesh et al. do not distinguish between attitude and affect and define attitude as an overall affective reaction to using a system. However, past research (e.g., Haddock and Zanna 2000) establishes attitude as having affective and cognitive elements and the same has been confirmed in this research. Allen et al. (1992) argued that affect is a significant predictor of behavior when the behavior is either habituated or mandated. Prior to adoption, behavior is neither habituated nor mandated and hence when the attitude is studied as affect in pre-adoption studies it doesn't predict behavior, which is probably why Venkatesh et al. conclude the relationship between attitude and intention as spurious.

The limitation of this study is that it is based on one VC and hence the results may not be representative of all VCs. Also, the data (independent and dependent variables) was collected at the same time using the same method, introducing the possibility of common method variance, which can inflate the magnitude of the relationship between variables. This can be addressed in future research. This research didn't examine the benefits a vendor can obtain from the community of committed members (like enhanced store image, customer referrals, and customer loyalty). Relationship commitment is central to relationship marketing and, therefore, this research can be extended to examine the role of relationship commitment in enhancing relationship marketing activities (like loyalty) using a VC.

Conclusion and Implications

The study examined the formation of online customers' commitment to a VC that is managed by an online retailer (Urii.com) from the balanced beliefs and feelings perspective. The results indicate that functional usefulness (knowledge sharing, information gathering and viewing interesting content), social usefulness (building relationships), and pleasure (fun and entertainment) are the primary factors and enhance the customer's commitment to the VC directly and indirectly through attitude formation.

From the theoretical perspective, this research developed the belief-feeling framework to understand attitude and behavior. Affect (feelings) has been widely studied in consumer behavior studies and is understood to be an important predictor of attitude. This study examined the role of feelings in customer behavior in the VC context. The proposed belief-feeling framework was useful in explaining the formation of attitude and VC members' commitment behavior. This framework will be useful in studying consumer behavior toward products and services (especially services because of their experiential nature) involving both cognitive and affective decisions. The framework shows that the inclusion of affect improves prediction of both attitude and behavior.

From the practical perspective, this research asserts that customers can develop commitment to the VC, which has high functional usefulness, social usefulness, and enhances pleasure of the customers. This implies that a vendor must put effort in increasing usefulness of the VC and incorporate elements in the VC that enhance the perceived pleasure of the customers. Vendors can conduct offline events and product related contests (with monetary or nonmonetary rewards) to enhance interaction in the VC. Vendors also need to think of strategies to make the customer experience in their Website pleasurable and the environment of the Website such that the customer is stimulated to participate in the Website. One of the features of avatar-based Websites is that they are extremely arousing and provide a fun-filled chat experience. They also have mini transactions like purchase of avatar suits, goggles etc. Vendors may think of incorporating some of these features for providing their customers a fun-filled experience of browsing and interacting in their VC.

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Appendix A. Descriptive Statistics of the Respondent's Characteristics

General		Age		Profession		Usage Exp. (months)		Times bought	
N	459	<20	0	Employed	65	0-5	158	<1	230
Min Time	5m 52s	20-23	6	Housewife	308	6-10	116	1-3	161
Mean Time	1m 22s	24-27	67	Professional	35	11-15	81	4-6	30
Max Time	1h 7m 53s	28-31	248	Self-Employed	9	16-20	52	7-9	4
Gender		32-35	107	Other	36	21-25	24	10-12	14
Female	438	>36	24	Not Answered	6	>25	23	13-15	1
Male	18	Not Answered	7			Not Answered	5	>16	5
Not Answered	3							Not Answered	14

Appendix B. Scale Items, Their Sources and EFA Results Using Varimax Rotation

Scale Items and Their Source		Factor Loadings	Mean μ	SD σ	CA α
Functional Usefulness—Dodds et al. 1991			5.50	0.92	
FUSE1	The VC of this Website is useful for gathering information	0.60	6.0	1.0	0.79
FUSE2	The VC of this Website is useful for building relationships with the other VC members	0.55	4.6	1.3	
FUSE3	The VC of this Website is useful for sharing common interests with the other VC members	0.84	5.5	1.2	
FUSE4	The VC of this Website is useful for exchanging knowledge with the other VC members	0.80	5.8	1.1	
Social Usefulness—Sweeney and Soutar 2001			4.21	1.01	
SUSE1	Interacting in the VC of this Website helps me to gain respect from other VC members	0.82	4.0	1.1	0.90
SUSE2	Interacting in the VC of this Website derives me a sense of belongingness to the VC	0.77	4.4	1.2	
SUSE3	Interacting in the VC of this Website helps me in forming warm relationships with other VC members	0.88	4.3	1.2	
SUSE4	Interacting in the VC of this Website improves the way I am perceived by the other VC members	0.88	4.1	1.2	
System Quality—McKinney et al. 2002			4.81	1.07	
SYSQ1	The VC of this Website quickly loads all the text and graphics	0.76	4.4	1.3	0.90
SYSQ2	The VC of this Website is easy to use	0.83	4.9	1.2	
SYSQ3	The VC of this Website is easy to navigate	0.88	4.7	1.3	
SYSQ4	The VC of this Website is well designed for users	0.82	4.9	1.1	
SYSQ5	The VC of this Website is visually attractive	0.71	5.1	1.1	
Pleasure (Interaction in the VC of this Website makes me feel)—Mehrabian and Russell 1974			5.30	0.91	
PLEA1	Unhappy – Happy	0.65	5.2	1.1	0.89
PLEA2	Annoyed – Pleased	0.66	5.2	1.0	
PLEA3	Unsatisfied – Satisfied	0.74	5.4	1.0	
PLEA4	Discontented – Contented	0.69	5.3	1.1	
Arousal (Interaction in the VC of this Website makes me feel)—Mehrabian and Russell 1974			4.92	0.80	
AROU1	Calm – Excited (Mehrabian and Russell 1974)	0.68	4.6	0.9	0.82
AROU2	Relaxed – Stimulated (Mehrabian and Russell 1974)	0.72	4.9	1.0	
AROU3	Unaroused – Aroused (Mehrabian and Russell 1974)	0.74	5.0	1.0	
AROU4	Sleepy – Wide awake (Mehrabian and Russell 1974)	0.76	4.9	1.0	
Attitude (What is your overall evaluation about your interaction in the VC of this Website?)			5.70	0.95	
ATTI1	Bad – Good (Ajzen 2001)	0.78	5.5	1.1	0.91
ATTI2	Unfavorable – Favorable (Kempf and Smith 1998)	0.82	5.8	1.1	
ATTI3	Dislikable – Likable (Ajzen 2001)	0.79	5.6	1.1	
ATTI4	Harmful – Beneficial (Ajzen 2001)	0.79	5.9	1.0	
ATTI5	Unpleasant – Pleasant (Ajzen 2001)	0.68	5.4	1.1	

Scale Items and Their Source		Factor Loadings	Mean μ	SD σ	CA α
Commitment			5.29	0.94	
COMM1	I am proud to belong to the VC of this Website (Garbarino and Johnson 1995)	0.61	5.1	1.1	0.81
COMM2	I put my efforts for the success of the VC of this Website (Morgan and Hunt 1994)	0.69	4.7	1.3	
COMM3	I actively contribute to the VC of this Website (Self developed)	0.69	4.3	1.3	
COMM4	I care about the long-term success of the VC of this Website (Garbarino and Johnson 1995)	0.73	6.1	1.2	
COMM5	I am very committed to my relationship with the VC of this Website (Morgan and Hunt 1994)	0.73	5.9	1.2	

Note: SD: Standard Deviation; CA: Cronbach's alpha

Appendix C. Pearson Correlation Analysis

	Arousal	Attitude	Commitment	Functional Usefulness	Pleasure	Social Usefulness
Attitude	0.516**					
Commitment	0.396**	0.442**				
Functional Usefulness	0.325**	0.518**	0.371**			
Pleasure	0.618**	0.632**	0.476**	0.425**		
Social Usefulness	0.315**	0.261**	0.316**	0.303**	0.330**	
System Quality	0.423**	0.442**	0.343**	0.383**	0.480**	0.201**

***Correlation is significant at the 0.01 level (2-tailed).*

