Does What Happens in Virtual Worlds Stay in Virtual Worlds? a Theory of Planned Behavior Approach to the Examination of Cognitive Transference in Virtual Marketing Channels

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Online virtual environments, such as Second Life, are emerging as potential marketing channels that may affect consumer cognitions (e.g., beliefs, attitudes, behaviors). The Theory of Planned Behavior model is employed and extended in this paper for explaining how virtual world brand experience affects real world purchase intentions and behavior. Survey data is collected from users of the popular virtual world Second Life. The study results indicate that virtual world behavior may impact real world intentions and behavior. Self-image congruency and perceived diagnosticity are found to strengthen the relationship between virtual world behavior and real world purchase intentions.

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Online virtual environments differ significantly from traditional e-commerce in that virtual worlds move beyond information search by allowing users to simulate behaviors before carrying them out in the traditional channel. Several global companies such as Adidas, BMW, Dell, IBM, Microsoft, Reebok, and Coca-Cola have, or have had, a presence in Second Life. These companies have developed a virtual presence in an attempt to create and increase brand awareness with the hope that these brand experiences will eventually influence real world purchase intentions and behavior (Arakji and Lang 2008). Research has shown that consumers are increasingly employing multiple marketing channels before purchasing products, for instance some consumers search online before making purchases in the store (Kumar and Venkatesan 2005).

The main objective of this paper is to investigate whether brand experiences in the online virtual environment affect purchase intentions and behaviors in the real world. Data is collected specifically from users of the popular 3D virtual world Second Life. A primary gap in the virtual reality literature concerns the lack of empirical data collected from real-time virtual environments. Empirical studies to date have collected data using lab experiments where buyers interact with 3D objects on corporate websites or with computer-operated sales avatars (Li et al 2002; Suh and Lee 2005; Jiang and Benbasat 2005; Wang et al 2007; Holzwarth et al 2006).

The Theory of Planned Behavior (TPB; Ajzen 1991), an established social psychology model for predicting behavior, is employed and extended in this paper in order to improve the model’s predictive power for explaining how virtual world brand experience affects real world purchase intentions and behavior. An extended version of the TPB model is presented and tested that includes the additional constructs of virtual world behavior, self-image congruency, and perceived diagnosticity. This paper contributes to the consumer psychology and marketing literature by presenting a conceptual model for understanding the ability of online virtual environments to serve as viable marketing channels for influencing consumer cognitions and behavior, and extends and applies the TPB model across multiple marketing channels.

The literature and concepts reviewed in this article include extant work on extensions to the TPB model, self-image congruency, perceived diagnosticity, and the impact of past behavior on predicting future purchasing behaviors. A conceptual model is developed where virtual world brand experience has a direct effect on purchase intentions and behavior in the TPB. Self-image congruency and perceived diagnosticity are hypothesized to moderate these relationships.

Online virtual environments have been identified in the literature as emerging marketing channels where consumers engage in information search, trial, and purchasing. Behavior in virtual environments may impact real world behavior, and studies have shown that consumer interactions with products in the environment have the potential to increase product knowledge, purchase intentions, and lead to more confident brand attitudes (Li et al. 2002, Suh and Lee 2005). It is hypothesized in this paper that virtual world behavior with the brand will have a significant impact on real world purchasing intentions and behavior.

The self-image congruency construct has been identified in the marketing literature as the degree to which a product or brand matches a consumer’s self-concept (Kressmann et al 2006, Sirgy et al 1997). Consumers who perceive brand experiences in the online virtual environment to be consistent with their self-image are more likely to transfer their intentions and behaviors to the real world. Thus, it is hypothesized in this paper that higher self-image congruency strengthens the relationship between virtual world brand behavior and real world purchase intentions and behavior. The perceived diagnosticity construct is a key variable in the product trial and virtual reality literature, and has been defined as “the extent to which a consumer believes that a particular shopping experience was helpful for evaluating the product” (Jiang and Benbasat 2004). It is likely that the more helpful a virtual experience for evaluating a brand, the stronger influence the virtual experience will have on real world purchase intentions and behaviors. It is hypothesized that the higher a consumer’s perceived diagnosticity while interacting with brands in the virtual world, the stronger the relationship between virtual world behavior and real world purchase intentions and behavior.

To test the proposed hypotheses, a questionnaire was administered to 209 registered users of the virtual world, Second Life. The survey was made possible by collaborating with a marketing research firm that specializes in data collection within virtual worlds, such as Second Life. A random sample of users was sent online invitations asking them to participate in the survey. Respondents answered questions using memorable experiences with real life brands in Second Life that they could recall from memory. Gender, age, and nationality statistics for the sample were similar to the average reported statistics for the overall population of registered users in Second Life. Multi-item scales were adapted from the literature and used to measure the constructs. All scale reliabilities were above .70. Four hierarchical multiple regression analyses were performed to test the main effects of virtual world behavior on real world purchase intentions and behavior, in addition to exploring the moderating effects of self-image congruency and perceived diagnosticity.

Overall, the findings from this study provide strong support for an extended version of the TPB that includes virtual world behavior, self-image congruency, and perceived diagnosticity. Virtual world behavior is found to explain unique variance in both real world purchase intentions and behavior, thus indicating that brand experiences in the virtual world may have a significant impact on consumer purchasing in the real world. Self-image congruency and perceived diagnosticity are found to moderate the relationship between virtual world behavior and real world purchase intentions. Respondents who perceived their virtual world brand experience as more consistent with their self-concept formed higher purchase intentions, suggesting that consumers may tend to behave in ways that are congruent with their self-image across various marketing channels. Also, the more realistic and helpful brand experiences in the virtual world are perceived to be by consumers, the more influence those virtual world brand experiences have on real world purchasing behavior.

References

We conducted two experiments to test our hypothesis that repair cost influences repurchase price sensitivity. In the first study, we manipulated repair prices for washing machines and laptop computers, two common household durable goods. Participants were told to imagine that a washing machine they had bought seven years ago for $500 was in need of repair (or a one year old laptop computer they had bought for $1,600). The repair price manipulation had levels representing 40%, 80% or 110% of the original price ($200, $400 and $550 for the washer and $640, $1,280 and $1,760 for the laptop). Participants were asked to provide their willingness to pay for a new product using a scale with prices from $250 to $750 in $50 increments for the washer and from $500 to $3,000 in $250 increments for the laptop. As predicted, an ANOVA showed that the mean willingness to pay increased as the repair costs increased (washer: $400, $800 and $1,100; laptop: $400, $800 and $1,100).

In the second study we told participants that they had a 4 megapixels digital camera that recently broke. The choice task was to select a price for a new camera ($200, $250 or $300 for a 4, 5 or 6 megapixels camera, respectively). Half of the participants were asked first whether they would repair the broken camera, and then chose between the three price/feature levels. The others had just one decision task: repair the broken camera or purchase one of the three new alternatives. This manipulation was intended to force participants to broadly or narrowly bracket the decisions (Read, Loewenstein and Rabin 1999), and to support the hypothesis that the repair cost needs to be considered as a separate option to effectively reduce price sensitivity. In this case, setting the decision stages together (broad bracketing) would allow participants to see that the repair was just one of several possibilities, which would not allow them to feel the pain of spending.