

## **Impact of Virtual Reality on Brand Value and Purchasing Behaviors**

**Christian Rivera**

Anisfield School of Business,  
Ramapo College of New Jersey  
505 Ramapo Valley Road,  
Mahwah, New Jersey 07430  
Email: [crivera1@ramapo.edu](mailto:crivera1@ramapo.edu)

Faculty Mentor: Malavika Sundararajan

## **Impact of Virtual Reality on Brand Value and Purchasing Decisions**

### **ABSTRACT**

Trends related to Virtual Reality (VR) and its application in the field of advertising have been predominantly positive. Yet, there are instances where it has had a negative impact on consumer buying decisions. Evidence indicates that consumers support and invest in a brand after experiencing a VR based product simulation. However, when simulations are not realistic, or are viewed to be overwhelming they can elicit a negative brand image. My study thus aims to specifically understand if VR based advertising can reduce brand value. I thus propose a VR simulation for a top online retail brand founded on prior research and discuss its research design model to study its impact on brand value. Implications and future research are discussed.

## INTRODUCTION

Virtual reality (VR) has always had a relationship with marketing since its inception in the mid-1990's (Li, Daugherty, and Biocca, 2002)<sup>i</sup>. At the turn of the century, mainstream companies turned to this new technology to help give users a different buying experience (Li, Daugherty, and Biocca, 2002). The transition of virtual reality into the marketing and advertising industry has, however, been gradual. Senior management in the areas of digital strategy have indicated that they are indeed working with brands to create access points to VR via cardboard versions. They believe that once the physical barriers are overcome, VR will become mainstream, even beyond games (Schweizer, 2016)<sup>ii</sup>.

Trends also indicate that brands that start to experiment in VR now will have the experience to do so once it is big, giving them the competitive advantage, (Cao, 2016)<sup>iii</sup>. It is expected that this trend will spread faster than was the case with the Internet and smartphones, especially since consumers just need to add accessories that change their smartphones into VR devices (Barnes, 2016)<sup>iv</sup>. Among the many advantages of VR, generating buzz has been a significant positive side effect, according to consultants working with this technology (Wisniewski, 2015)<sup>v</sup>. The question my study intends to explore is whether use of virtual reality in marketing will result in positive consumer experiences leading to higher purchasing intentions or could it be that VR might provide such a robust experience that the interest in owning the brand would be reduced, thus decreasing brand value and lowering purchasing intentions?

I thus explore prior research in the area of VR and Marketing, specially related to brand development and recognition. Based on this research, I identify the key variables that impact consumer experiences and purchase intentions that are used in the development of VR experiences. I have designed a VR simulation to study its impact on the Supreme brand, which will be tested using experimental methods. I conclude with the implications of the model and discuss further research in this area.

## LITERATURE REVIEW

### Application of Virtual Reality in Marketing and Advertising

Studies have shown Internet advertising has evolved dramatically since its inception in 1994 when the first banner ads appeared on the Hotwired site (Adams 1995)<sup>vi</sup>. The year 2000 marked the first year in the United States that revenue from rich media advertising was listed separately, accounting for 2% of the total ad revenue (Interactive Advertising Bureau 2001)<sup>vii</sup>. This shift opened the door for the creation of new forms of advertising that could be used with the growing presence of modern technology. Rich media advertising for instance, generally incorporates high impact sound with video and is often more interactive (Rewick 2001)<sup>viii</sup>. Three-dimensional (3-D) advertising has emerged as a new form of rich media advertising (Mirapaul 2000)<sup>ix</sup> that enables consumers to inspect products on the Web, much like they can in a retail store, for certain types of products. 3-D advertising can simulate a new consumption experience—virtual experience, (Li, Daugherty, and Biocca, 2002), making it an important tool in advertising.

In the area of marketing communication, Virtual Reality provides a gateway for marketers to reach consumers in new ways (Van Kerrebroeck, Brengman, & Willems, 2017a)<sup>x</sup>. A company that takes advantage of VR technology can benefit from major improvements in their marketing communication as well as in the level of their customers' knowledge of the products (Grudzewski, Awdziej, Mazurek, Piotrowska, 2018).<sup>xi</sup>

The concepts of virtual experience and presence are presented, with the results largely supporting the proposition that 3-D advertising can enhance presence and, to varying degrees, ultimately influence the product knowledge, brand attitude, and purchase intention of consumers

thus enhancing the ability to create a compelling virtual product experience engaging consumers in an active user-controlled product experience (Li, Daugherty, and Biocca, 2002).

#### *Brand Attitude*

With respect to brand attitude, presence of visual attractiveness was ranked high on importance by study participants when they experience a highly playful virtual shopping environment (Kong, Shin and Ponto, 2020). Depending on the product that is being viewed it appears there is a change in the consumer's ability to understand the product thoroughly enough to lead to a purchase. For instance, the less realistic the advertisement, the greater the negative experiences and lower purchase intentions (Li, Daugherty and Biocca, 2002). For instance, Shoppers who had previously believed that the texture of a jacket was important, could begin to believe when they see bright colors or fashionable designs, combined with user-controlled interactivity, that the latter attributes are more important than the feel of the jacket for their product evaluation within the context of ecommerce (Li, Daugherty, and Biocca, 2002). Thus, to ensure accuracy of brand knowledge and brand attitude when using VR simulations, companies must be clear about the message when designing the experience and outcome that they intend.

#### *Consumer Purchase Intentions*

The core purpose of any marketing plan is to ultimately convert consumer interest into intent to purchase the product. Earlier findings in this area indicate that participants' purchase intention is lower in 3D VR conditions than 3D web conditions contradicting more recent studies that indicate a strong correlation between informativeness and purchase intention (Kong, Shin and Ponto, 2020). Observing the inconclusiveness of research studies in this area owing to dichotomous findings, researchers emphasize the need to address consumer's prior experience and consumption behaviors, post purchase experiences, more representative participants, and smaller sample sizes. (Loureiro, Guerreiro, Eloy, Langaro, Panchapakesan, 2018).

Further, brand knowledge and brand attitude have not had enough of an impact on consumers who have used VR equipment to successfully influence purchase intentions. The only way that purchase intentions can increase due to the utilization of VR software is by the use of VR becoming more mainstream. This will happen when the price and technology become more refined and easier to access (Schweizer 2016). The recent cardboard based 3D Glasses allows more consumers access to 3D VR viewing online.

#### *Brand Knowledge*

Research demonstrates that compared to products presented in 2D modes, consumers tend to understand products better, prefer them to other products, and are more inclined to buy products when they are presented with 3D advertising (Suh and Lee, 2005)<sup>xii</sup>. Throughout the early stages of Virtual Reality (VR) studies it was not clear if consumers were able to gain information about products through VR simulations. When compared to 2D advertisements many consumers preferred 3D simulations and believed they were learning more information about the product through the simulation. Later studies found that, compared to products presented in 2 dimensional platforms, consumers understood products better, preferring them to other products and therefore showing more inclination to buy products when they are presented with 3D advertising (Suh and Lee 2005). Given this insight it would be thought to be likely that VR provides a great deal of information to the consumer. However, an analysis of over 300 customer reviews on online discussion forums and app stores, suggested that although informativeness and playfulness are critical dimensions to 3D VR in influencing consumer shopping behavior, consumers only perceive 3D VR shopping applications as playful but not informative enough (Kong, Shin and

Ponto, 2020). Thus, indicating that VR technology still has a long way to go in order to get users to absorb product information through a virtual simulation.

*This contradiction forms the crux of my study. It provides a gap in the literature that is yet unexplored namely, if 3D VR simulations were both playful and informative, would it result in providing so much information and engagement that the consumer, having experienced the product in such detail, may no longer feel the need to own it?*

I thus propose that, higher playfulness in virtual reality-based simulations will result in more positive attitudes towards the brand while more realistic scenarios and higher informativeness in virtual reality-based simulations will result in lowered purchasing intentions.

*Proposition 1: Higher playfulness in virtual reality-based simulations will result in more positive attitudes towards the brand*

*But,*

*Proposition 2: Higher informativeness and more realistic 3D images or videos in virtual reality-based simulations will result in lowered purchasing intentions*

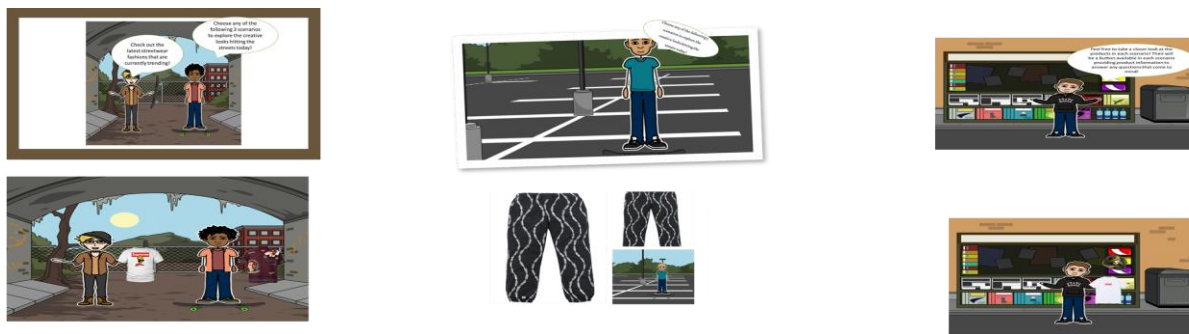
## METHODOLOGY

*Variables:* The Key variables in this study are:

The 3D Virtual Reality Simulation Treatment 1 and Treatment 2. Treatment 1 will comprise of a simulation that will include the playfulness factor. Treatment 2 will comprise of a simulation that will be more realistic and have high levels of information about the product and brand.

Playfulness factors will engage users in a game-format asking them to play with the product. Realistic factors will include images of real-life people wearing the product or using the product. Informativeness will provide details related to pricing, sizes, availability, history, brand popularity.

*Instrument:* The treatments 1 and 2 will be developed as 3D VR simulations using the Thinglink platform and provided as a link to the participants (*Refer figure 1 and 2*). The survey will appear prior or post, or both, depending on the group the participant is assigned to when they log in at the link provided to them.



**Figure 1: Treatment 1- Story board of VR simulation using Playfulness- allows users to select the product and place it on characters and play around with the skateboard**



- **Supreme Box Logo Shirt:**
- Price: \$1,195.00(resale)
- Size: Medium
- Availability: Only resold unless re-released
- Popularity: Very Popular
- Purpose: short sleeve t-shirt
- Location: Cannot be bought in stores unless it is at a consignment shop
- Identity: Trendy and shows high status



- **Supreme Razor Wire Pants:**
- Price: \$250.00(resale)
- Size: Medium
- Availability: Only resold unless re-released
- Popularity: Very Popular
- Purpose: Streetwear pants (used for skateboarding)
- Location: Cannot be bought in stores unless it is at a consignment shop
- Identity: Trendy and shows high status



- **Supreme Camouflage Hat:**
- Price: \$63.00(resale)
- Size: Adjustable sizes
- Availability: Only resold unless re-released
- Popularity: Very Popular
- Purpose: Hat
- Location: Cannot be bought in stores unless it is at a consignment shop
- Identity: Trendy and shows high status

**Figure 2: Treatment 2- More Realistic and Highly Informative**

*Research Design:* The design includes experimental groups and control groups for Treatments 1 and 2. For each treatment, there will be a group which takes a pre-test, and a post-test, a second group which will only take the post-test and a control group that will just take a survey. To help us obtain the prior attitude towards the brand prior to administering some treatment, the pretest–posttest design is used in this study (Salkind, 2010)<sup>xiii</sup> participants will be College students and they will be selected randomly to participate in the study.

Pre-Test	Group	Treatment	Observation
O (Survey of Supreme Brand knowledge and interest and intent to purchase)	R1	T1	O
	R2	T1	O
O (Survey of Supreme Brand knowledge and interest and intent to purchase)	R1	T2	O
	R2	T2	O
	R3		O

## DISCUSSION AND CONCLUSION

Given the gap in the literature that has yet to determine if both playfulness and informativeness together in a 3D advertisement could increase purchase intention or create the opposite effect, this study offers that critical piece of the puzzle. As seen above, the treatments separate out playfulness and its impact in one scenario and more realism and information in the second scenario. This difference offers a well differentiated treatment that will test and retest users’ attitudes towards the brand and their final intention to purchase. As I continue to design and aim to empirically test these aspects, the propositions themselves open-up further ideas for advertisers to test their design strategies when promoting their brands online. The results would help advertisers learn whether to add playfulness and informativeness together when conceiving their advertisements. Having multiple treatments and pre-post experimental designs reduces the

impact of confounding variables thus offering a clearer set of relationships between virtual reality advertisement characteristics and their impact on consumer brand attitude and purchase intentions. Future research will also eventually include multiple brands, different products and various combinations of playfulness and realism.

## REFERENCES

- 
- <sup>i</sup> Li, Hairong; Daugherty, Terry; Biocca, Frank. *Journal of Advertising*. Fall2002, Vol. 31 Issue 3, p43-57. 15p
- <sup>ii</sup> Schweizer, Kristen. *Bloomberg.com*. 6/20/2016, pN.PAG-N.PAG. 1p.
- <sup>iii</sup> Cao, Jing. *Bloomberg.com*. 12/16/2016, pN.PAG-N.PAG. 1p.
- <sup>iv</sup> Barnes, S. (2016, November 3). *Understanding virtual reality in marketing: nature, implications and potential*. doi: <https://dx.doi.org/10.2139/ssrn.2909100>
- <sup>v</sup> Wisniewski, Mary. *American Banker*. 8/24/2015, Vol. 180 Issue 131, p1. 0p.
- <sup>vi</sup> Adams, Mark (1995), "Brands of Gold," *Mediaweek*, (November 13), 30-32
- <sup>vii</sup> Interactive Advertising Bureau (2001), *IAB Internet Advertising Revenue Report: 2000 Fourth-Quarter Results and Full-Year Highlights*, New York: PriceWaterhouseCooper.
- <sup>viii</sup> Rewick, Jennifer (2001), "Choices, Choices: A Look at the Pros and Cons of Various Types of Web Advertising," *The Wall Street Journal*, (April 23), R12.
- <sup>ix</sup> Mirapaul, Matthew (2000), "3-D Space as New Frontier," *The New York Times on the Web*, (October 5), [<http://www.nytimes.com/2000/10/05/technology/05SPAC.html>].
- <sup>x</sup> Van Kerrebroeck, H., Brengman, M., & Willems, K. (2017a). *Escaping the crowd: an experimental study on the impact of a Virtual Reality experience in a shopping mall*. *Computers in Human Behavior*, 77, 437-450.
- <sup>xi</sup> Grudzewski, Filip; Awdziej, Marcin; Mazurek, Grzegorz; Piotrowska, Katarzyna. *Economics & Business Review*. 2018, Vol. 4 Issue 3, p36-50. 15p.
- <sup>xii</sup> Kil-Soo Suh; Young Eun Lee. *MIS Quarterly*. Dec2005, Vol. 29 Issue 4, p673-697. 25p.
- <sup>xiii</sup> Salkind, N. J. (2010). *Encyclopedia of research design* (Vols. 1-0). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781412961288