

The Impact of Control Mechanism and Video Game Playing Experience on Brand Awareness and Consumer Brand Loyalty in Sport Video Games

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Abstract

The majority of recent sport video game brand awareness research has focused on the increase of advertisers and changes to the in-game experience. The major objective of this study was to conduct one of the first ever studies related to brand awareness in mobile sports video games while also examining the potential differences in brand awareness due to the type of control mechanism. A total of 176 participants took part in this quasi-experimental study that used two different control mechanisms (PS4 and iPad) and one control group (Pictures) to investigate the influence of control mechanism on brand awareness and brand loyalty. Results indicated that control mechanism significantly impacted both the brand awareness and brand loyalty of those playing sports video games. Additionally, avid gamers demonstrated significantly higher levels of brand awareness and brand loyalty than casual gamers.

Introduction

While the video game industry is currently almost a \$15 billion industry, with sports video games accounting for about 15% of the video games sold, very few if any studies have been conducted related to brand awareness and loyalty in mobile sports video games (Entertainment Software Association, 2014). Recent numbers regarding sports video game sales are strong, but there seems to be a shift in sales from traditional console games to mobile games, which accounted for nearly half of Electronic Arts (EA) Sports net revenue in 2014 (Needleman, 2015). The video game industry is changing and the 2015 NFL Super Bowl was the first in recent memory with ads only for mobile video games (Kain, 2015). There is a growing “free to play” model in mobile video games and this trend is also influencing sports video game developers. For instance, a National Football League (NFL) player for the San Francisco 49ers, Patrick Willis, recently released his own mobile sports video game entitled *Football Unleashed* for Apple mobile devices and this game is free to download, but has several in game purchasing options. Mobile video games are an emerging platform for the video game experience and the touchscreen aspect of these games is a unique control mechanism that may influence various aspects of the gaming experience including the effectiveness of brand placements (Dardis, Schmierbach, & Limperos, 2012; Pelissero, 2015).

Several studies have investigated advertising effectiveness and brand loyalty related to sports video games, however, very little research exists that examines the impact of video game control mechanism or platform on advertising effectiveness and brand loyalty. A recent line of research has started to investigate the influence of how the gaming experience may influence

advertising effectiveness and brand loyalty. However, only one study to date exists that has investigated the influence of control mechanism on brand placements or advertising effectiveness in sport video games. More surprisingly, the researchers found only one peer reviewed study that has examined the effectiveness of brand placements in mobile sport video games (Dardis, et al., 2012; Kwak, McDaniel, & Kim, 2012; Toh & Leng, 2014; Walsh, Kim, & Ross, 2008). Consequently, the major objective of this study is to conduct one of the first ever studies related to brand awareness in mobile sports video games and more specifically this study seeks to improve upon the research of Dardis, et al. (2012) by examining the differences in brand awareness and loyalty based on control mechanism in mobile and traditional console based sports video games.

Literature Review

The majority of current research related to brand awareness and associated advertiser brand loyalty in sport video games has focused on examining the effectiveness of various brand placements in a variety of settings that vary based on the in-game environment and advances in the technology of the video games. For instance, the Walsh, Zimmerman, Clavio, and Williams (2014b) investigated the differences in brand awareness in a sport video game based on the type of advertisement (verbal in-game announcements or visual signage). In this study the researchers noted the increase of brand placements from previous sport video games and changes to the in-game experience due to technological advances. Similarly, the Walsh, Clavio, Mullane, and Whisenant (2014a) study also noted the recent increase of in-game advertising in sport video games and also pointed out a new type of in-game advertising in sport video games, i.e. political advertisements. Additionally, Cianfrone and Zhang (2013) investigated the effectiveness of in-game advertising in sport video games and discovered that sport video game advertising may be a viable alternative to traditional sport sponsorship with a lower cost of entry for interested companies. Overall, the recent sport video game brand awareness literature has mainly been focused on the changes within the game itself rather than the effects of the game control mechanisms or how the touchscreen aspect of mobile platforms may influence brand awareness and subsequently loyalty.

One line of research related to all genres of video games and control mechanisms has focused on the potential physical activity related benefits of active video game control mechanisms such as the Nintendo Wii or the Sony Playstation4 (PS4) Move. While findings in this area have demonstrated there are potential physical health benefits of playing active video games, researchers also conclude that active video games are not currently a suitable alternative to traditional forms of physical activity. For instance, someone may use the PS4 Move controller to play a baseball game like "Major League Baseball (MLB): The Show" and they can actively swing at a baseball or throw a pitch rather than pressing a button on a traditional controller (Peng, Crouse, & Lin, 2012; White, Schofield, & Kilding, 2011). However, to date this line of research has not examined how these types of control mechanisms may influence brand awareness in sport video games and top video game industry professionals have mentioned that consumer interest in motion controlled video games is declining (Pereira, 2014).

On the contrary, interest in mobile video games including mobile sport video games is currently at an all-time high and many sport video game titles such as "(International Federation of Association Football) FIFA 2015" are available on both mobile and traditional platforms. It should also be noted that mobile sports video games now account for the majority of sport video game related revenue for some of the largest sport video game developers (Needleman, 2015). While researchers such as Dardis et al., (2012) and Toh and Leng (2014) have started to

investigate the potential influence of control mechanism on brand awareness in sport video games, no studies to date have compared brand awareness between mobile and traditional sport video game platforms. Additionally, previous control mechanism studies in the sport video game genre have focused only on brand awareness in racing video games. Walsh, Kim and Ross (2008) first examined potential differences in sport video game brand placement awareness due to presentation mode (television vs. video game console), but this area of research has been largely abandoned since this landmark study that was completed before the recent popularity of mobile video gaming. These gaps in the literature are addressed by the current study and a comprehensive review of literature follows.

Brand Awareness

Brand awareness typically constitutes recall and recognition of advertisers or sponsors in a variety of settings and derives from the advertising effectiveness literature. (Aaker, 1996; Walsh, et al. 2008). Researchers suggest that brand awareness is a good starting point to measure the effectiveness and subsequent brand equity related to advertising stimuli (Aaker, 1992; Dardis, et al., 2012; Kwak, et al., 2012; Toh & Leng, 2014). For instance, a brand that has significant brand awareness such as Sprint for the National Association for Stock Car Auto Racing (NASCAR) Sprint Cup often also has significant brand equity. This has been applied to both the non-sport and sport settings including live sports events and brand placements in sport video games (Aaker, 1996; Nelson, 2002).

Recall can be measured as unaided or aided, with the former being preferred by researchers and companies for most products. Unaided recall is when consumers are asked to list or name specific sponsors or advertising brands without any verbal or visual cues and conversely aided recall is when consumers are given some type of verbal or visual cues to help them recall specific brands. Recognition is another measure of brand awareness that asks consumers or sports fans to identify specific official advertisers when looking at a list or pictures of official advertisers and similar companies who are not advertisers. For instance, a researcher may ask consumers to identify only the official fast food sponsor of a sports event and give them two choices such as McDonalds (Official Sponsor) and Burger King (Non-sponsor). Recall and recognition collectively make up the typical measures of brand and sport sponsorship awareness as well as potential indicators of ambush marketing in the sports setting (Aaker, 1996; Lyberger and McCarthy, 2001; Nelson, 2002; Walsh et al., 2008).

In the sports setting, brand awareness has been used extensively to measure the preliminary effectiveness of sport sponsorships and more recently brand awareness measures have been used to determine the effectiveness of brand placements in sport video games (Cianfrone & Zhang, 2013; Meenaghan, 2001; Pham, 1992; Speed & Thompson, 2000; Walsh, et al., 2014a). Nelson (2002) was the first researcher to investigate the brand awareness of those playing sports video games. In this study, the researcher measured recall and recognition rates of participants immediately after they had played a popular racing game and five months later to examine any possible memory decay effects on brand awareness. Nelson (2002) found that there was a significant difference between brand recall and recognition rates of participants based on the time and a memory decay effect was noted. The investigator discovered that recall and recognition rates of participants declined significantly after the gaming experience with the brand awareness rates being significantly lower fifth months after participants had played the video game.

Walsh et al. (2008) continued this line of research and added presentation mode as a potential indicator of brand awareness in sport video games. More specifically, Walsh et al. (2008) measured the recall and recognition rates of participants who played a NASCAR video game on a video game console and compared their brand awareness with participants who watched a clip of a NASCAR race on a television. Interestingly, the researchers did find a significant difference between presentation modes with recall rates being significantly higher for the group that watched the NASCAR race vs. the group that played the NASCAR videogame. The findings of the Walsh et al. (2008) study were particularly important because they were the first results that indicated a potential difference in sport video game brand awareness due to actively using a video game controller vs. passively watching a NASCAR race. Additional research has been conducted further examining how the recent changes to the in-game experience have influenced brand awareness. Some of these changes include improved visual graphics, additional in-game verbal sponsor announcements, and in-game customization aspects with additional brand placements (Cianfrone & Zhang, 2013; Walsh, et al. 2014a; Walsh et al. 2014b). However, it was not until the Dardis et al. (2012) study that anyone further examined how the type of game controller may influence brand awareness.

Control Mechanism

Dardis et al. (2012) conducted the first ever study examining the effects of control mechanism on brand awareness in sport videogames. The study was completed by grouping participants into experimental groups based on control mechanism (traditional controller and steering wheel controller) as well as game customization groups (customization and no customization). Participants were asked to play a racing based videogame for the XBOX 360 video game console using either the traditional controller or the steering wheel controller that was supposed to simulate actually driving. The customization group was able to customize their race car prior to playing the video game and the no customization group was not able to customize their car and they had to play the game with a pre-determined car. Immediately following the playing experience participants were asked to complete a survey that measured the recall of brands placed in the game. The researchers found that participants using the traditional controller recalled significantly more brands than those using the steering wheel control mechanism. They also found that game customization had a significant, positive influence on brand recall.

The findings of the Dardis, et al. (2012) study are similar to the Walsh, et al. (2008) study and potentially suggest brand awareness may be significantly different in sport video game settings where participants are using different control mechanisms. As the popularity of mobile video gaming continues to increase it may also be important to investigate mobile video gaming as a unique control mechanism because the participants are using the screen itself as the controller. Toh and Leng (2014) conducted the only existing brand awareness of mobile sport video games study by having participants use an Android tablet computer for the gaming experience. It should be mentioned that in this study the researchers only measured the recall and recognition rates of one control mechanism, i.e. tablet computer and did not compare with other control mechanisms. However, the Toh and Leng (2014) study was the first to examine the brand awareness of mobile sport video games and one of the first to examine how some demographic variables such as gender may influence brand awareness in sport video games.

Video Game Playing Experience

Similar to other demographic variables, video game playing experience may significantly influence brand awareness in sport video games. Casual gamers who are playing for the first

time or have little experience playing the game may be more concerned with learning how to play the game and may not notice some of the product placements in the game. Cianfrone and Zhang (2013) noted the potential differences in brand awareness among casual vs. avid gamers and decided to exclude casual gamers from their study due to this issue. With that being said, Lewis and Porter (2010) noted significantly different responses to video game advertising between casual and avid gamers in a multiplayer online video game. In this case the authors found that avid gamers were much more accepting and aware of in-game advertising than casual gamers. Kim, Walsh, and Ross (2008) found that avid sports gamers were highly identified sports fans that tend to be involved in more highly consumptive behaviors than casual sports gamers.

These findings seem to parallel the fan team identification literature where highly identified fans often notice more official sponsors and have a significantly more positive response to these sponsors than their casual fan counterparts. In addition to brand awareness, companies also want to develop brand loyalty related to their sport sponsorships and video game brand placements, which are very similar to sport sponsorships. Previous research has demonstrated the potential differences in brand loyalty among avid vs. casual sports fans (Gwinner & Swanson, 2003; Pham, 1992; Speed & Thompson, 2000).

Brand Loyalty

Customer loyalty can benefit companies by increasing revenue due to increased sales and decreasing the costs of new customer acquisition (Chaudhuri & Holbrook, 2001). The same is true in the sport setting where ticket sales professionals often want to increase and maintain season ticket holders (Kaynak, Salman, & Tatoglu, 2008). Recent research has focused on establishing a relationship between sponsoring a sports event or team and the brand loyalty of consumers related to this sponsorship (Mazodier & Merunka, 2011). In this case, the researchers found a significant, positive relationship between sponsoring the Olympic Games and the brand loyalty of consumers. The study employed an experimental design and showed participants a slideshow with pictures of advertisements from the Olympic Games and asked them to complete a survey following the specific treatment they received. The survey had questions related to brand recall and recognition, sponsor purchase intentions, and sponsor brand loyalty and participants completed the survey once before being exposed to the advertisements and once after being exposed to the advertisements. Sponsoring brand loyalty increased significantly after participants viewed the advertisements and while research related to the influence of sponsorship on brand loyalty is rather limited it is an emerging area of research.

Similar to the effects of sport sponsorship at a sports event, sports video games simulate the real world environment and gamers are exposed to in-game brand placements in a similar fashion to those who attend live sporting events (Kim, et al., 2008). Walsh et al. (2014b) concluded that future research should investigate the influence of playing sport video games on brand loyalty as well as how different control mechanisms may influence brand awareness and loyalty. The current study seeks to take these recommendations and expand the body of literature by incorporating the effects of control mechanism on brand awareness and loyalty in the mobile and traditional console based sport video game settings.

Study Purpose and Hypotheses

The primary objective of this study is to conduct the first ever research related to comparing brand awareness in mobile and traditional console based sports video games. The secondary objective of this study is to expand upon the research of Walsh, Kim, and Ross (2008), who conducted the first study that examined the influence of presentation mode (television vs. video game) on brand recall and recognition of sports video games. This research also advances the Dardis, et al. (2012) study by adding mobile sport video games as a new control mechanism and investigating how control mechanism may influence brand loyalty. The following hypotheses were formulated based on previous research:

- H₁: The combination of video game playing experience and control mechanism will have a significant, positive influence on brand awareness and brand loyalty.
- H₂: Control mechanism will have a significant, positive influence on brand loyalty.
- H₃: Control mechanism (iPad, PS4, and control) will have a significant, positive influence on brand awareness.
- H₄: Video game playing experience will have a significant, positive influence on brand loyalty.
- H₅: Video game playing experience (Avid and casual) will have a significant, positive influence on brand awareness.

Method

Sample

A convenience sample of approximately 300 undergraduate and graduate students at a small, private university in the Northeastern U.S. were contacted to participate in the study. A final sample of $N = 181$ was included in the study after all participants were scheduled and completed the treatments for a response rate of approximately 60%, which is lower than expected for this type of study, but the treatment and survey took approximately 30 minutes to complete and some participants were unable to finish or re-schedule. A total of 176 surveys were deemed complete and usable and this was the final sample for the study. Of the total $N = 176$ participants, there were $n = 73$ in the control group, $n = 54$ in the PS4 treatment group, and $n = 49$ in the iPad treatment group. It should be noted that the majority of participants in this study fit within the demographic of those who frequently play sport video games. Student samples are typically only acceptable when they are significant consumers of the sport product and the vast majority of sport video game consumers are between the ages of 18-34, which fits the profile of the sample of this study (Biswas & Sherrell, 1993; Entertainment Software Association, 2014; Walsh, et al., 2014b).

Procedure

The methodology for this study was similar to the Dardis, et al. (2012) study and employed a quasi-experimental design to address the research hypotheses. The research design included two treatment groups (PS4 and iPad) and one control group (Pictures). Students were recruited to participate in the study through in-class announcements and no inducements were given for participation in the study. After agreeing to participate in the study students were randomly grouped into one of the three experimental groups by the research team. The participants were all exposed to stimuli from the "National Basketball Association (NBA) 2K15" video game for the PS4 and iPad.

The first experimental group played the first half of an NBA 2K15 game on the PS4 and watched the halftime show. The second experimental group played the first half of an NBA 2K15 game on an iPad Air and watched the halftime show. The control group looked at a series of 10 pictures over the course of 30 seconds from the NBA 2K15 video game on the PS4 that were viewed in a timed PowerPoint to simulate playing the game. All conditions were standardized and all teams/arenas were pre-selected so participants would be exposed to the same brand placements. Each group either played as or saw pictures from the Los Angeles Lakers vs. Cleveland Cavaliers at the Quicken Loans Arena. Immediately following the completion of playing the game or viewing the pictures participants were asked to complete a paper and pencil survey designed to measure various demographic questions, brand awareness (recall and recognition), and brand loyalty. The study was designed and implemented in a similar manner to the Walsh, et al. (2008) study and followed the appropriate procedures for a quasi-experimental research design (Babbie, 2013).

Measures

Brand recall and recognition measures were employed in a similar manner to Walsh, et al. (2008) and Dardis, et al. (2012). The researchers used unaided recall and asked participants to recall as many advertisers as they could immediately after playing the video game or viewing pictures of the game. To assess sponsor recognition a list of 14 possible sponsors was provided to the participants with seven of the sponsors being official sponsors and seven being non-sponsors. The non-sponsors were very similar to the official sponsors and typically competing brands. For instance, Adidas was an official sponsor of the game and both Adidas and Nike were listed as potential sponsors. Similar to previous research, the number of sponsors correctly recalled and those correctly recognized were added together to create a composite measure of brand awareness (Cianfrone & Zhang, 2013).

Brand loyalty was measured with a four item Likert type scale developed by Chaudhuri and Holbrook (2001) that ranged from (1 = *very strongly disagree* to 7 = *very strongly agree*). This scale has been utilized in several sport related studies and found to be reliable and valid many times (Kaynak, Salman, & Tatoglu, 2008). Video game playing experience was a self-reported measure that was grouped into avid or casual based on the frequency of video game playing as reported by the respondents. The researchers originally wanted to create three categorical groups for this variable, but there were too few moderate gamers and the majority of the sample was either avid or casual gamers. The final measure of control mechanism was a categorical variable based on the treatment received by the participant. This variable was measured by color coding the surveys based on the corresponding treatment group.

Results

Data Analysis

The surveys were coded and entered in to SPSS version 20.0 and a brand awareness variable was calculated by creating a composite score of correctly recalled and recognized sponsors. The video gaming experience variable was created by categorizing the frequency a participant played into two categories (avid or casual) and avid gamers were those who played video games at least once per week with casual being those who played less than once per week. Descriptive analyses were utilized to describe the sample and a MANOVA and subsequent post-hoc analyses were utilized to examine the effects of control mechanism (iPad, PS4, and

control) and video game playing experience (avid and casual) on brand awareness (recall and recognition) and brand loyalty.

Sample Characteristics

The overwhelming majority or 90% of the respondents were between the ages of 18-23 with a range of 18-42. The gender distribution was approximately 67% male and 33% female and casual gamers made up 58% of the sample while avid gamers comprised 42% of the sample. The majority of the sample was U.S. born (85%), but there was a sizeable international population included in the sample (15%). White was the largest racial group making up 80% of the sample and African-American was the largest minority group making up seven percent of the sample.

Control Mechanism and Video Game Playing Experience

At face value avid video gamers and those who were in the PS4 treatment ($M = 5.90$) or the pictures control group ($M = 6.18$) had higher levels of brand awareness than their casual gamer counterparts ($M = 5.04$) PS4 and ($M = 4.73$) pictures. Mean brand awareness scores were lower for both avid and casual gamers in the iPad treatment groups. Similar results were found regarding brand loyalty and more detailed information can be found in Tables 1 and 2.

Table 1: Brand Awareness Across Video Game Experience and Control Mechanism

Video Game Experience	Control Mechanism	\bar{x}	Frequency
Avid	Pictures	6.18	29
	PS4	5.90	29
	iPad	4.38	16
Casual	Pictures	4.73	44
	PS4	5.04	25
	iPad	3.21	33

Table 2: Brand Loyalty Across Video Game Experience and Control Mechanism

Video Game Experience	Control Mechanism	\bar{x}	Frequency
Avid	Pictures	4.92	29
	PS4	4.53	29
	iPad	3.90	16
Casual	Pictures	3.88	44
	PS4	4.27	25
	iPad	3.08	33

Multivariate analysis of variance was used to further investigate this relationship between control mechanism and video game playing experience on brand awareness and brand loyalty. Using Wilk's criterion, ($\Lambda = 0.985$, $F = 0.622$, $p = 0.65$) it was determined there was not a significant interaction between the levels of control mechanism and video game playing experience on brand awareness and brand loyalty. Consequently hypothesis 1 was rejected and the main effects were further evaluated.

Using Wilk's criterion, ($\Lambda = 0.883$, $F = 5.43$, $p < .001$) it was determined that control mechanism significantly impacted brand awareness and brand loyalty. Therefore hypotheses 2 and 3 were accepted. Multiple comparison post hoc tests provided further information and revealed that the significant differences in brand awareness and loyalty due to control mechanism were between the pictures and iPad group and the PS4 and iPad group. More specifically, participants in the iPad group had significantly lower levels of brand awareness and brand loyalty than participants in the PS4 and pictures groups.

Using Wilk's criterion, ($\Lambda = 0.918$, $F = 7.59$, $p < .01$) it was also determined that video game experience significantly influenced brand awareness and brand loyalty. This demonstrated that avid gamers had significantly higher levels of brand awareness and brand loyalty than casual gamers. Consequently, hypotheses 4 and 5 were accepted.

Conclusion and Implications

The results of this study demonstrated the significant effect of control mechanism on brand awareness and brand loyalty in a specific sport video game (NBA 2K15). This was perhaps the most important finding of the study and indicates that consumer response to brands may differ significantly due to the control mechanism. This further supports the Dardis et al. (2012) and Walsh et al. (2008) studies and advances the literature related to control mechanism and brand awareness in sport video games. It is also important to point out that this was one of the first studies to examine the brand awareness of consumers playing a mobile sports video game vs. the traditional console version of the game. The results of this study perhaps indicate that brand awareness and subsequently brand loyalty may be significantly lower for mobile sports video games than the traditional video game consoles. This finding is very important for practitioners and despite the recent shift of gamers from the traditional console to the mobile gaming setting, in-game advertisers may be getting less value for mobile sport video game ads. The effectiveness of mobile sport video game brand placements and advertisements warrants further investigation.

Another very interesting finding of this study was related to brand loyalty. While a few studies have started to examine the influence of sponsorship and potentially video game advertisements, very little research exists in this area (Mazodier & Merunka, 2011). This study provides support for future research examining brand loyalty related to sponsorship or brand placement in sport video games. Practitioners may also be interested in this finding since it possibly demonstrates the success of brand placements, especially among avid gamers who exhibited significantly higher brand loyalty.

One of the findings that was possibly differed from some sport video game research was the finding related to the avid vs. casual gamers. In this study the results pointed out that avid gamers were able to recall and recognize significantly more brands and they had significantly higher brand loyalty than casual gamers. This finding was rather interesting and the researchers posit this may be due to avid gamers having a higher level of interest in the sport itself and demonstrating higher levels of team or sport identification. This agrees with the Kim, et al., 2008 study, but differs from the Cianfrone and Zhang (2013) study. This finding may also mean that avid sports video gamers are more adept at playing the games themselves and they are more likely to see the advertiser's brand placements. This was especially evident with the significantly higher levels of brand awareness and loyalty for the pictures group vs. the iPad. In other words, casual gamers may be so worried about trying to play the game itself they may miss many of the brand placements during their gaming experience. This has a very important implication for

practitioners and it may be helpful to tailor the in-game advertising to the level of gamer. For instance, an advertiser could use less brand placements for beginners and more for avid gamers. Overall, this study was a good first step to further the brand awareness in sport video game literature and limitations and suggestions for future research are discussed below.

Limitations and Future Research

Similar to any study there were a few limitations and they are outlined below. First, only one sports video game was utilized and differences in gameplay and experience may also have a significant effect on brand awareness. Secondly, the sample included a significant number of casual gamers and the results may have differed if there were more moderate gamers rather than just casual and avid gamers. A third limitation was the number of control mechanisms utilized in the study. The researchers only used the PS4 and an iPad to compare control mechanism and other types of controllers may have elicited different results. A final limitation was related to the small, but significant number of international students in the sample. Many of these students mentioned that they were avid video gamers and loved sports video games, but since they were from countries where soccer is the major sport they were mainly interested in the FIFA 15 soccer game. This may have influenced the results because even though they were avid gamers they were relatively inexperienced with the NBA 2K15 game utilized for the study.

Future research should take these limitations into account and further research is needed related to the mobile gaming experience. The current study utilized an iPad as a mobile gaming device, but there may even be significant differences in brand awareness between various mobile devices due to the size of the screens. Future research should take this into account and the researchers recommend examining the brand awareness related to sport video games for smartphones. Additionally, the influence of multiple players should be taken into account for future research. During the search for previous literature the researchers noticed that a new line of research related to brand placements in multi-player online games exists for most video game genres, but this was not something that seems to have been researched in the sport setting to date. Finally, future research should examine the differences between games on a variety of platforms because each sports video game has a different number of brand placements and different methods of trying to showcase brands.

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