

## SPONSORSHIP INFORMATION RECEPTION AND PROCESSING: EXPLICIT AND IMPLICIT MEMORY OF IN-GAME ADVERTISING

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Researchers have attempted to identify the impact of sponsors' advertising on spectators at sports events, but it is necessary to understand the dynamic mechanisms of the effect of advertising on signboards at these events. Thus, our primary purpose was to investigate the effects of emotion on spectators' implicit/explicit memory of sponsors' advertising. Further, we examined how visual attention can mediate the effects of emotion on explicit/implicit memory. We asked 81 undergraduates to watch an edited soccer match while wearing an eye tracker in order to examine their visual attention. The results showed that their visual attention to sponsor signage significantly varied as a function of both their pleasure and arousal, and visual attention significantly influenced their explicit memory, but not their implicit memory. We also found a full mediating effect of visual attention between pleasure and explicit memory, and a partial mediating effect of visual attention between arousal and explicit memory. Results are discussed, along with the limitations and scope for future research.

*Keywords:* pleasure, arousal, visual attention, explicit memory, implicit memory, sponsorship advertising, in-game advertising.

Sponsorship is a marketing tool commonly used in sport and the total expenditure worldwide was approximately US\$60.1 billion in 2016 (GlobalkSponsorship,

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2017). Given that corporate spending on sponsorship was US\$850 million in 1985 and US\$55.3 billion in 2014, sponsorship can be considered one of the fastest-growing marketing vehicles (International Event Group, 2015). Global corporations, such as Coca-Cola and Samsung Electronics, continue to invest hundreds of millions of dollars so that they can be associated with mega sporting events, professional teams, and leagues.

The effects of sponsorship is one area of research that has attracted a significant amount of attention from scholars, who have attempted to prove that there are commercial benefits from sport sponsorship and, thus, to show that sponsorship is a legitimate marketing tool (Cornwell & Maignan, 1998). Investigating the effectiveness of sponsorship is especially important considering the increasing number of questions concerning the cost effectiveness of sponsorship when compared with other marketing alternatives (Jensen & Cobbs, 2014; Olson & Thjømmøe, 2009). Brand awareness and image enhancement/transfer have consistently been the primary focus in research on the effects of sponsorship (Cornwell & Maignan, 1998; Gwinner, 1997; Jensen & Cobbs, 2014; McDaniel, 1999; Prendergast, Poon, & West, 2010).

However, scholars have stated that there are several issues related to sponsorship effects, especially brand awareness. Although both explicit and implicit memory are involved in the process of inducing brand awareness, in research on brand awareness in regard to sponsorship effectiveness, scholars have focused heavily only on explicit memory, which is commonly measured as brand recognition or brand recall. *Explicit memory* is referred to as “a memory that makes a consumer consciously think back to prior exposure episodes and intentionally attempt to access the information that was presented” (Shapiro & Krishnan, 2001, p. 1). In other words, explicit memory will be revealed if consumers correctly identify or remember the brand to which they have previously been exposed in the form of an advertisement or sponsorship. One essential element in explicit memory is that a consumer needs to think back on the prior experiences and consciously retrieve the brand from his or her memory. On the other hand, an *implicit memory* is a memory retrieved automatically without any deliberate cognitive effort. It is defined as “the nonintentional, unconscious retrieval of previous information” (Yoo, 2008, p. 3; see also Duke & Carlson, 1994). Measurement of explicit memory is problematic in sponsorship research because sponsor identification requires a substantial degree of mental construction. Yet, given the weak encoding of just the logo or company name in sponsorship signage, erroneous recall or confusion concerning the many advertisers commonly occurs among viewers, which limits the effectiveness of the measurement of explicit memory (Herrmann, Walliser, & Kacha, 2011).

Consumers cannot equally process all of the game and sponsorship information when sport action is the primary type of information and the main focus. Thus,

they are more likely to conduct dual-task information processing. Contrary to other types of advertisements, game action, players, and coaches are commonly the primary information in a sporting event, and sponsorship stimuli are processed as secondary information (Herrmann et al., 2011). Moreover, in the elaboration likelihood model (Petty & Cacioppo, 1986) face validity is offered in the role of implicit memory in sponsorship. According to this model it is posited that brief exposures do not provide spectators with the opportunity to focus on the content of sponsorship information because they can allot only a low level of cognitive ability and motivation to processing the sponsorship information (Grohs & Reisinger, 2014; Kitchen, Kerr, Schultz, McColl, & Pals, 2014). Therefore, inducing consumers to perform more automatic information processing that does not require much cognitive effort, such as implicit memory, should be an important element in sponsorship research. Furthermore, it was suggested by Shapiro and Krishnan (2001) that the intensity of processing, amount of divided/full attention, and intentionality all affect explicit memory, but do not affect implicit memory. It is rare for people to seek sponsorship stimuli voluntarily. Consumers' exposure to sponsorship information is mostly incidental and sponsorship information is fragmented by many other advertisers. This being so, we believe that it is reasonable to assume that weak encoding by consumers resulting from divided attention and nonintentionality when exposed to sponsors' advertising will reduce explicit memory, but will not have a significant impact on implicit memory.

It is also known that exposure is a necessary antecedent of brand awareness (Aaker, 1996), but in this regard exposure to sponsorship signage should be viewed within the context of active games. Sport spectators and mass media audiences have limited capacity to process information. Additionally, it cannot be determined that consumers actually absorb sponsorship stimulation when exposed to it (Breuer & Rumpf, 2012). Some researchers have merely assumed sponsorship is processed. However, there is a need to examine exactly what happens when consumers are exposed to advertising about sponsors (Shilbury, Westerbeek, Quick, & Funk, 2009). With the development of general technology, more accurate measurement of visual attention is available than was previously. One example is the eye tracker. It has been suggested that using an eye tracker is especially important when assessing the effects of exposure to sponsorship signage, because tracking eye movement is a more objective indicator compared to traditional measures, as the eye tracker measures how much attention is being devoted to the signage. It has also been suggested that even if sponsorship information is presented in an advertisement, sponsorship cannot be effective if it does not attract people's attention (Breuer & Rumpf, 2012). In addition, we noted that visual attention may have an influence on explicit memory that is different from the influence it has on implicit memory. As already described, a

high level of visual attention to sponsorship information means reduced divided attention, as well as stronger encoding of the information about the sponsor, so that consumers' recall (i.e., explicit memory) can vary as a function of the level of their visual attention. On the other hand, implicit memorization of a sponsor brand is based more on incidental and nonconscious encoding. Therefore, we predicted that visual attention may not significantly affect implicit memory. However, little is currently known about the different effects of visual attention on explicit and implicit memory. Accordingly, we formulated the following hypotheses:

**Hypothesis 1:** There will be a significant difference between the consumer's explicit memory of sponsorship information as measured by a brand recall test and implicit memory as measured by a consideration-set test.

**Hypothesis 2:** The consumer's level of visual attention will significantly influence his or her explicit memory.

**Hypothesis 3:** The consumer's level of visual attention will significantly influence his or her implicit memory.

One important but as yet consistently neglected area in sport sponsorship research is the effects of sponsorship information on emotion. Evidence has been presented to suggest that emotion is a vital element in sport spectatorship. According to the hedonic consumption paradigm (Holbrook & Hirschman, 1982), sensory pleasure, daydreams, esthetic enjoyment, and emotional responses are important in experiential consumption, including sports and entertainment. Furthermore, scholars have suggested that consumers have various emotional experiences during sport consumption, such as arousal, thrill, enjoyment, suspense, and pleasure (Wann, Melnick, Russell, & Pease, 2001; Zillmann, Bryant, & Sapolsky, 1989). Sponsorship advertising is different from other types of advertising (e.g., sponsorship signage, in-game advertising, A-board advertising) in many aspects, but it has been suggested that applying the same approaches used to examine advertising can help researchers gain a better understanding of the effects of sponsorship, as other types of advertising and sponsorship advertising share many similarities (Cunningham & Taylor, 1995). Scholars have found that emotion has a considerable influence on consumers' responses toward advertisements (Hamelin, El Moujahid, & Thaichon, 2017; Lee, Lim, & Pedersen, 2011; Want & Wise, 2016; Yang, Rokos-Ewoldsen, Dinu, & Arpan, 2014). For instance, Lee et al. (2011) found that pleasure and arousal evoked by extreme sport advertisements had a significant impact on the attitude of consumers toward the advertisement. Similarly, Want and Wise (2016) found that emotional arousal significantly affected the viewers' recognition of an advertisement.

Emotional intensity (i.e., arousal) is an especially important factor in sponsor brand memorization, mainly because arousal is an automatic reaction to game

actions, in that consumers with increased levels of arousal are likely to place more focus on game play and, thus, will have reduced capacity to process sponsorship information (Pham, 1992). As a result, in the current study we predicted that arousal might have varying effects on consumers' explicit memory and implicit memory in regard to sponsorship information in an advertisement, as implicit memory is not significantly influenced by cognitive capacity. Further, we noted that arousal and pleasure have different effects on the consumer's memory of a brand, as it has been suggested that arousal and pleasure affect processing of the message of an advertisement differently, with arousal being more closely related to the level of information processing and pleasure being more closely related to the nature of information processing, such as schema- or data-driven processing (Shapiro & MacInnis, 2002). Likewise, according to the psycho-evolutionary model of emotion, positive and negative emotions activate information processing differently (Schwarz & Bless, 1991). However, there have been few studies in which researchers have examined the impact of arousal and pleasure on the responses to sponsorship stimuli, and they have offered contradictory results. For example, Pavelchak, Antil, and Munch (1988) and Pham (1992) found that arousal (i.e., emotional intensity) was negatively related to sponsorship recall, and that pleasure had no impact on sponsorship recall. On the other hand, Bal, Quester, and Plewa (2010) suggested that emotional intensity and emotional valence both had significant effects on sponsorship recall. Dekhil and Desbordes (2013) obtained similar results to those of Bal et al. and found that both arousal and pleasure had significant effects on sponsorship recall and recognition. One possible explanation for the inconsistent results in previous studies is the fact that the researchers did not consider the potential impact of emotion on the consumers' visual attention. It has been suggested that emotional events, such as sporting events, enhance viewers' reception of both central information (i.e., game action) and peripheral details (i.e., sponsorship signage). However, Lanciano and Curci (2011) pointed out that it may be reasonable to assume that spectators absorb game action and sponsorship information differently as a function of emotional states. Yet, the methods of assessing exposure that have traditionally been used by researchers, such as signage exposure time, are limited, because they are unable to consider differences in level of attention, so that all exposure times are simply assumed to be equal (Breuer & Rumpf, 2012). Last, although there have been efforts by researchers to pinpoint the effects of sponsorship in advertisements on consumers' brand awareness, it is very difficult to separate sponsorship from other marketing efforts, because sponsorship information is often integrated into larger marketing communications, such as advertising, personal selling, and promotional activities. For instance, Pham (1992) criticized the survey method in sponsorship effectiveness research because scholars using it were unable to examine the independent effects of

exposure to sponsorship on the consumers' brand awareness and their potential attitude changes toward the sponsor. Furthermore, it has been suggested that the inconsistent findings in regard to the effectiveness of sponsorship are partly attributable to the lack of control for extraneous variables in the studies, which led to calls for rigorously designed experiments (Cornwell & Maignan, 1998).

Watching a sport event leads to emotional responses among the spectators that may impact the effect on them of advertisements containing sponsorship information. Thus, our primary purpose in the current study was to investigate the effect of consumers' emotions on their visual attention to advertising hoardings at matches (A-boards). Furthermore, in this study our aim was to examine the mediating effect of the consumers' visual attention between their emotion and their memory. Specifically, regarding the role of emotion in brand awareness, we proposed the following hypotheses:

**Hypothesis 4:** The pleasure that spectators experience will significantly reduce their visual attention to sponsors' brands.

**Hypothesis 5:** The arousal that spectators experience will significantly reduce their visual attention to sponsors' brands.

**Hypothesis 6:** The influence of emotion on spectators' explicit memory will be mediated by the level of their visual attention.

**Hypothesis 7:** The influence of emotion on spectators' implicit memory will be mediated by the level of their visual attention.

## Method

### Participants and Procedure

We recruited participants from undergraduate classes in an institution in Seoul, South Korea. The sample ( $N = 81$ ) consisted of soccer fans, of whom 40 were Real Madrid fans and 41 were FC Barcelona fans. Their ages ranged from 18 to 28 years ( $M = 23.43$ ,  $SD = 2.83$ ). G\*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007) was used to verify the effect size for the regression analysis with Cohen's  $f^2$ . For a large anticipated effect size (.35) and an alpha level of .05 (Cohen, 1992), a regression analysis with three variables requires 54 participants; thus, according to this criterion, the sample size of 81 in the current study was adequate. To determine group assignment in the experiment, the participants were purposively selected, and each student was randomly assigned to one of two conditions (Real Madrid win condition vs. FC Barcelona win condition).

The present study consisted of three phases, that is, an experimental session and two survey sessions. In the experimental session, participants were briefed about the present study upon arrival at the laboratory and then asked to wear a mobile eye tracker. The eye tracker is a goggle-type, visual-attention device designed as a measurement system. Then, the experiment administrator helped

participants with the calibration and adjustment of the eye-tracking device for binary image level of the pupil. Participants were asked to watch an edited extract from a Real Madrid versus FC Barcelona game for 8 minutes on a television screen. The distance between the participants and the 42-inch television screen was 1 meter (39.37 inches). Immediately after watching the edited section of the game, the participants completed measures of their pleasure, arousal, and brand recall. Last, their implicit memory of sponsor information was measured 1 day after the experiment via an online survey.

### **Pilot Study**

Because it has been suggested that brand familiarity is a factor that significantly influences individuals' memory retrieval (Breuer & Rumpf, 2012), we conducted a pilot study to make sure that the seven exposed and seven dummy brands for the consideration-set test were all unknown to the participants. *Exposed brand* was a brand exposed during the game event, whereas *dummy brand* was of a similar product category but was not exposed during the game event. We used an expert panel comprising two sport management faculty members and two doctoral students majoring in sport management to select the 14 brands. The 30 participants who took part in the pilot study were excluded from participating in the main study. We used a three-item brand familiarity scale, with responses rated on a 5-point Likert scale ranging from 1 = *false* to 5 = *true* (Mühlbacher, Raies, Grohs, & Koll, 2016). The paired-sample *t* test results showed that the mean scores for all exposed and dummy brands were significantly lower than the midpoint, ranging from 1.18 to 1.86.

### **Stimulus Material**

The video clip chosen for this study was a Real Madrid versus FC Barcelona soccer match, which was held during the 2006–07 La Liga (Spanish League) season. This match was selected because both teams have a large fan base in the Spanish League. The experimental treatment was taken from the same original clip, where the match was concluded with a score of 3:3 tie. The only variable altered between each condition was the winning condition. This was done in order to manipulate the emotional responses of the participants. Within the 8-minute video clip, the first part was edited to show scenes of three Real Madrid goals, and the second part was edited to show three FC Barcelona goals. In all scenes when the six goals were scored, no signage with sponsorship information on it was exposed.

### **Measures**

**Visual attention.** To assess the level of visual attention of the participants in the current study we utilized EMR-9 by NAC, the most recent version that is

available of the mobile eye-tracking system. The data from the eye tracker were automatically transferred to, and stored in, a computer. The game's contents were divided into game zone and signage zone, and the area with the signage containing sponsorship information was set as the area of interest. On the basis of previous research in which the eye-tracking method has been used (Kim, Kim, & Cho, 2010), both attention frequency (fixation count) and attention duration (time) were calculated to create a composite score of the participants' visual-attention level.

**Explicit/implicit memory.** To measure participants' explicit memory, one item that aided recall for each sponsor brand was utilized. Participants were asked if they remembered actual brand names or dummy brand names. Of all the brands in the A-board signage area, we chose seven of the brands—Estrella (beer), Rathy (interior design), Highmoon (furniture), Traeger (grill), La Escandella (tiles), Vilatel (rental of construction equipment), and 11888 (communication)—because each of them had the same total exposure time. Given that participants had to retrieve the name of each of the brands from their memory with cognitive effort, this was the measure of explicit memory. The item designed to assess explicit memory in the current study was “Please choose the brand exposed in the soccer game you watched.” The brands that received minimal exposure time were excluded from the study. Similar to Herrmann et al. (2011), a consideration-set test was used to measure implicit memory. For this test the brands exposed for the same length of time and the competing brands within the sponsor product category, including AbInBev (beer), Pladur (interior design), Dister (furniture), Weber (grill), Arizona (tiles), Lance (rental of construction equipment), and Videocon (communication). Respondents were then instructed to “Please choose a brand that you would like to purchase.”

This task did not require any cognitive retrieval processing; thus, this was the measure of implicit memory. Because it has also been suggested that implicit memory is retained in the delayed condition, implicit memory was measured 1 day after the experimental sessions (Shapiro & Krishnan, 2001).

**Emotion.** In the current study we employed the Pleasure–Arousal–Dominance Scale to examine the multiple dimensions of the participants' emotional responses (Bakker, van der Voordt, Vink, & de Boon, 2014; Mehrabian & Russell, 1974). However, dominance was excluded because it was not relevant to the present study. According to this model, the pleasure dimension is measured using six items indicating emotional states on a 5-point semantic differential scale; these are *happy*, *pleasant*, *satisfied*, *comfortable*, *pleased*, and *hopeful*. On the other hand, arousal is measured by six pairs of antonyms (e.g., ranging from *relaxed* = 1 to *stimulated* = 5), characterized by a combination of mental alertness and physical activity.



## Data Analysis

Data were analyzed using SPSS version 24 and the PROCESS macro for SPSS (Hayes, 2013). We performed a descriptive analysis to confirm the reliability of the measures. To test the hypotheses, we conducted paired-sample *t* tests, and regression and mediation analyses. We used the PROCESS macro for SPSS (Hayes, 2013) to examine the mediating role of visual attention between emotion and memory. Mediation is significant if a bias-corrected 95% confidence interval (CI) for the indirect effect does not include zero (Hayes, 2013; Preacher & Hayes, 2004).

## Results

### Descriptive Analysis

The descriptive statistics, reliability (Cronbach's  $\alpha$ ), and correlations among the variables (e.g., explicit/implicit memory, visual attention, pleasure, and arousal) are presented in Table 1. The descriptive statistics, reliability (Cronbach's  $\alpha$ ), and correlations among the variables (e.g., explicit/implicit memory, visual attention, pleasure, and arousal) are presented in Table 1.

Table 1. Means, Standard Deviations, Reliabilities, and Correlations of Study Variables

Variables	<i>M</i>	<i>SD</i>	$\alpha$	1	2	3	4	5
1. Explicit memory	3.37	0.16	–					
2. Implicit memory	4.35	0.16	–	-.38*				
3. Visual attention	0.39	0.01	–	.81*	-.20			
4. Pleasure	18.98	0.79	.97	-.62*	.14	-.67*		
5. Arousal	18.05	0.66	.94	-.60*	.29*	-.54*	.63*	

Note. \*  $p < .01$ .

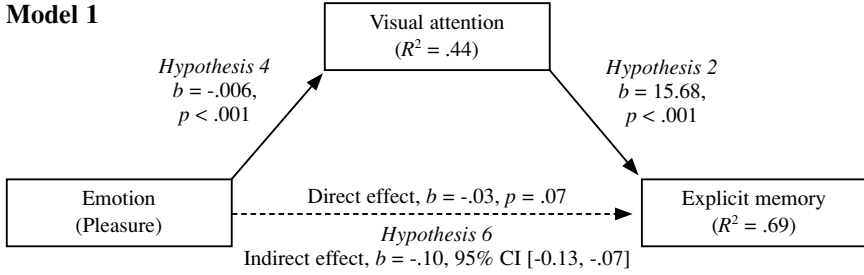
### Paired-Sample *t* Test

A paired-sample *t* test was conducted using SPSS 24 to determine whether or not the mean difference between explicit memory and implicit memory was significantly different from zero. The result indicated that the mean of implicit memory,  $M = 4.35$ ,  $SD = 1.46$ , was significantly greater than that of explicit memory,  $M = 3.37$ ,  $SD = 1.42$ ,  $t(80) = -3.68$ ,  $p < .001$ . The standardized effect size (Cohen's *d*) was .68 on a 5-point Likert scale. Therefore, Hypothesis 1 was confirmed.

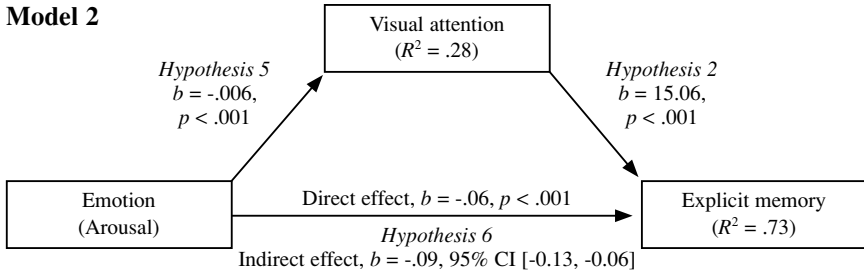
### Relationships of Pleasure, Visual Attention, and Explicit Memory

Direct and indirect relationships were examined with PROCESS for SPSS. The direct effect of visual attention on explicit memory was significant,  $b = 15.68$ ,  $SE = 1.83$ ,  $t = 8.59$ ,  $p < .001$ , as was the direct effect of pleasure on visual attention,

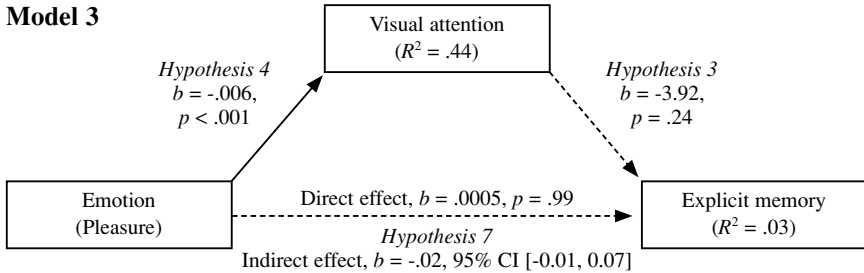
**Model 1**



**Model 2**



**Model 3**



**Model 4**

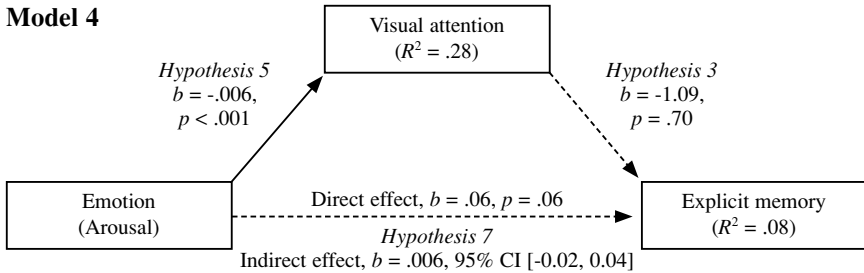


Figure 1. Mediating effects of viewers' visual attention between emotion and memory.  $b$  = unstandardized coefficient. Dotted line represents a nonsignificant path. Solid line represents a significant path.

$b = -.006$ ,  $SE = .008$ ,  $t = -7.80$ ,  $p < .0001$ . Therefore, Hypotheses 2 and 4 were supported.

The direct effect of pleasure on explicit memory was nonsignificant,  $b = -.03$ ,  $SE = .02$ ,  $t = -1.83$ ,  $p = .07$ , although the indirect effect was significant,  $b = -.10$ ,  $SE = .02$ ; CI [-0.13, -0.07], which indicated that the relationship of greater pleasure with less explicit memory was indirectly mediated by the level of visual attention. Therefore, Hypothesis 6 was supported (see Model 1 in Figure 1).

### **Relationships of Arousal, Visual Attention, and Explicit Memory**

The direct effect of arousal on visual attention was significant,  $b = -.006$ ,  $SE = .001$ ,  $t = -5.46$ ,  $p < .0001$ , as was that of visual attention on explicit memory,  $b = 15.06$ ,  $SE = 1.52$ ,  $t = 9.87$ ,  $p < .0001$ . Therefore, Hypothesis 5 was supported. Moreover, both the direct effect,  $b = -.06$ ,  $SE = .02$ ,  $t = -3.54$ ,  $p < .001$ , and indirect effect,  $b = -.09$ ,  $SE = .02$ ; CI [-0.13, -0.06] of arousal on explicit memory were significant, indicating that visual attention partially mediated the relationship between arousal and explicit memory. Therefore, Hypothesis 6 was supported (see Model 2 in Figure 1).

### **Relationships of Pleasure, Visual Attention, and Implicit Memory**

As reported, the direct effect of pleasure on visual attention was significant. The direct effect of visual attention on implicit memory was nonsignificant,  $b = -3.92$ ,  $SE = 3.32$ ,  $t = -1.18$ ,  $p = .24$ , as was the direct effect of pleasure on implicit memory,  $b = .0005$ ,  $SE = .03$ ,  $t = 0.02$ ,  $p = .99$ . Thus, Hypothesis 3 was not supported. Moreover, the indirect effect of pleasure on implicit memory was nonsignificant,  $b = -.02$ ,  $SE = .02$ ; CI [-0.01, 0.07]. Therefore, there was no mediating effect of visual attention between pleasure and implicit memory (see Model 3 in Figure 1).

### **Relationships of Arousal, Visual Attention, and Implicit Memory**

As reported, the direct effect of arousal on visual attention was significant. The direct effect of visual attention on implicit memory was nonsignificant,  $b = -1.09$ ,  $SE = 2.86$ ,  $t = -0.38$ ,  $p = .70$ , as was that of pleasure on implicit memory,  $b = .06$ ,  $SE = .03$ ,  $t = 1.91$ ,  $p = .06$ . In addition, the indirect effect of arousal on implicit memory was nonsignificant,  $b = .006$ ,  $SE = .02$ ; CI [-0.02, 0.04]. There was no mediating effect of visual attention between arousal and implicit memory; therefore, Hypothesis 7 was not supported (see Model 4 in Figure 1).

## **Discussion**

Our objective in this study was to examine the relationships among emotion, visual attention, and memory of sponsorship information of viewers of a

televised soccer match in an experimental session with a mobile eye tracker and two survey sessions. Because scholars (e.g., Herrmann et al., 2011) have pointed out the limitation of research on explicit measurement of advertising effects, in the current study we tried to examine the effects of emotion and visual attention on both explicit and implicit memory.

The results showed that respondents scored higher on implicit memory than on explicit memory. This result is positive for sponsors in that when people are watching sporting events, they can be unconsciously influenced by the signage at the stadium and, thus, would select the product/service of the sponsors' brand when making their next purchase, even though they do not remember that brand exactly. We point out that in most previous studies the researchers considered poor brand recall as an indicator of unsuccessful sponsorship effects, but in this study we showed that sponsorship effects include more than just explicit memory. This result supports the importance of implicit memory in advertising effect (Northup & Mulligan, 2013), indicating that measuring implicit memory on its own may be a more effective way to examine sponsorship effects. From a theoretical perspective, our result confirmed Hypothesis 1 on the effects of exposure and showed that consumers implicitly memorize the exposed brands (i.e., subliminally getting more familiar with the brands), and that brand familiarity is more important than is merely recalling or recognizing the relationship between the event and sponsoring brands (Herrmann et al., 2011).

With regard to cognitive information processing, our results demonstrated that explicit memory for the sponsors' brands increases as a function of the level of visual attention paid to the signage. This result is consistent with the results from previous studies (e.g., Breuer & Rumpf, 2012; Oh, Kim, & Lim, 2016). According to Breuer and Rumpf (2012), "the widespread approach of benchmarking different sponsorship rights on the basis of sponsor signage exposure alone is insufficient, because exposure per se does not increase attention and recall" (p. 530). In contrast, we found that unconscious information processing was not influenced by level of visual attention. This finding offers two major managerial implications for brand manufacturers. First, for an advertisement for a brand to enhance only consumers' implicit memory performance, the focus should be on signage exposure (or the reach of the advertisement), rather than on the capacity of the signage to draw visual attention. It has been suggested that implicit memory is especially important for the effectiveness of low-involvement brands, as well as for brands commonly purchased via impulsive buying, because products that fall into these types of brand do not require high levels of cognitive effort from the consumer (Shapiro & Krishnan, 2001). On the other hand, additional efforts should be made by the manufacturer and/or marketer if he or she wants to improve both implicit and explicit memory performance of the consumer for the brand, because, of itself, exposure is not a necessary and sufficient condition

to improve the consumer's brand recall. Many brands entail consumption situations that require consumers to engage in an effortful cognitive search of their memory because the brands are either personally relevant or important to those consumers. In the case of signage containing sponsorship information, the additional effort required may depend on brand color, brand prominence, signage placement/size, and exposure time.

Our results showed that visual attention was negatively influenced by pleasure and arousal. We found that induced emotion significantly influenced the level of visual attention of our participants to the advertisements (Teixeira, Wedel, & Pieters, 2012). Our study is one of the first in which the impact of emotion within the context of sponsorship has been investigated. Sponsorship and advertisement are different in that, for spectators, game action (play) itself is the main theme in a sporting event and sponsorship signage is peripheral. Our finding that visual attention was negatively influenced by pleasure and arousal, offers an important managerial insight: when people become pleased or excited during a sporting event, their attention is more likely to be focused on the game itself and not on A-board advertising. From the sponsors' perspective, their A-board advertising is more effective if it is exposed during nonexciting moments. Thus, we suggest that it should be reasonable to assume that sponsorship of sporting events that are not very exciting or enjoyable can also be a useful marketing tool to attract spectators' attention to the A-board signage at the event. The Olympic Games, World Cup soccer games, rival matches (e.g., FC Barcelona vs. Real Madrid, New York Yankees vs. Boston Red Socks), derby games, and championship series are commonly considered effective marketing vehicles, because they attract a vast number of both spectators at the match and viewers of a televised broadcast. However, our findings in this study demonstrate that other types of sporting events, such as small or nonrival matches, can also be legitimate avenues for effective use of sponsors' signage, as the A-boards at these events can attract consumer attention.

In this study we examined the mediating role of visual attention between consumers' emotion and memory. The indirect effects of both pleasure and arousal on explicit memory through visual attention were significant. Thus, we assumed that people who are pleased by their favorite team's victory are not likely to pay attention to A-board advertising. Similar to the pleasure model (see Model 1 in Figure 1), when people become aroused the level of consumers' attention to A-board advertising is reduced, which leads to a lower level of recall and/or reduced recognition rate for the advertised brand. Regarding direct effects, the results of the present study showed that only arousal had a significant impact on participants' explicit memory (partial mediation). This result is consistent with those of previous studies in which the researchers suggested that people's arousal level had a direct impact on their capacity for information

processing (Pham, 1992), and a high intensity of cognitive processing of game play negatively influenced individuals' explicit memorization of sponsorship information (Shapiro & Krishnan, 2001). Moreover, the results reported in those two studies indicated that arousal negatively affected their participants' attention rate to A-board advertising and negatively influenced their explicit memory in either a direct or indirect manner. However, in the current study we found that pleasure did not have a direct influence on our participants' explicit memory, which shows that arousal and pleasure are independent dimensions of emotion. As already described, pleasure is related more closely to individuals' cognitive processing strategy than it is to their cognitive capacity, and, thus, according to our results pleasure had little direct influence on recall of the sponsors' brands. This result also provides reconciliation among the findings of studies on the relationship between positive emotion and sponsorship recall. Yet, given that there are studies in which the researchers suggested that positive emotions improve the recall of peripheral details (Talarico, Berntsen, & Rubin, 2009), further examination is needed to gain a better understanding of the role of pleasure in recall of sponsor brands. Additionally, our study is one of the first attempts to examine the mediating role of consumers' visual attention between their emotion and their memory in the context of sponsorship signage at a sporting event. Further research on this role should be conducted to identify the other confounding factors in the context of sponsors' advertising, such as the color, vividness, size, and location of the advertising.

We found that the indirect effects of emotion on our participants' implicit memory through their visual attention were nonsignificant. Moreover, the direct effects of emotion on their implicit memory were also nonsignificant. These results indicate that consumers' implicit memory is not influenced by either emotion or level of visual attention in the context of A-board advertising. Rather, people's implicit memory may be enhanced by the mere exposure to the advertising, as illustrated in the results of the paired-sample *t* test that we conducted.

Despite its research purpose, design, and use of validated measures, our study still has limitations. The most important limitation is related to the use of just one sport (i.e., soccer). People may have different experiences when watching different sports, so that the results of our study may not be generalizable to other sport contexts. Furthermore, in the current study we used only brands that were not familiar to the participants as advertisement stimuli, in an effort to control for the brand familiarity effect. Therefore, it would be fruitful for future researchers to examine the impact of emotion and visual attention on implicit and explicit memory while using more familiar brands. Last, as the data were collected in a laboratory setting, it is our view that it would be interesting to attempt to observe

similar patterns in a more natural setting, such as spectators' behavior in an actual sporting event at a stadium, in order to increase external validity.

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