THE IMPACT OF CELEBRITY ENDORSER ATTACHMENT AND ENDORSER-PRODUCT MATCH-UP ON CREDIBILITY, ATTITUDE, AND PURCHASE INTENT

by

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ABSTRACT

The dissertation examined the impact of celebrity endorser attachment and endorser-product match-up on credibility (i.e., likability, attractiveness, expertise, and trustworthiness of the endorser), attitude (i.e., toward the endorser, ad, and brand), and purchase intent.

The current study was based on affect transfer theory and endorser attachment. Affect transfer states that the transfer of positive affect from a celebrity to an endorsed brand can lead to more positive ad effects than the transfer of negative affect. The current study also was based on schema congruity theory, that is, the level of endorser-product match-up. This theory claims that congruent ads can lead to more positive ad effects than incongruent ads. Moreover, the current study tested, based on the integration of affect transfer and schema congruity, the interaction effects of endorser attachment and endorser-product match-up on the ad outcomes. The current study also looked at the mediation effect of brand attitude on purchase intent.

A total of 212 subjects participated in an experiment with a 2 (strong/weak endorser attachment) × 2 (high/low endorser-product match-up) between-subjects design. Results indicated that strong attachment to an endorser led to higher ratings on ad outcomes (credibility, attitude, and purchase intent). Furthermore, high endorser-product match-up led to higher ratings on perceived product expertise except all other ad outcomes. Moreover, no interaction effects were found in all ad outcomes. Additional analyses indicated that brand attitude mediated the relationship between ad attitude and purchase intent as well as the relationship between endorser attitude and purchase intent. Implications of the results are discussed.
DEDICATION

To my father, mother, wife, brother, and sister for their endless support and love.
### LIST OF ABBREVIATIONS AND SYMBOLS

\( \alpha \)  
Cronbach’s index of internal consistency

\( F \)  
Fisher’s \( F \) ratio: A ratio of two variances

\( M \)  
Arithmetic mean

\( p \)  
Probability value

\( t \)  
Computed value of \( t \) test

\( n \)  
Sample size

\( SD \)  
Standard deviation

\( R^2 \)  
Coefficient of determination: measure of strength of relationship

ANOVA  
Analysis of variance

MANOVA  
Multivariate analysis of variance

GLM  
General Linear Model

EA  
Emotional Attachment

SAM  
Source Attractiveness Model

SCM  
Source Credibility Model

NFL  
National Football League
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CHAPTER 1
INTRODUCTION

Rationale and Importance of the Dissertation

Celebrity endorsement is an effective marketing strategy (BBC, 2014; Forbes, 2016) because it has positive effects on brand awareness, attention, attitude, recall, and loyalty (Carrillat et al., 2013; Jin & Phua, 2014). Using media of any kind without seeing celebrity endorsers is uncommon (The New York Times, 2008); they are virtually omnipresent in print and digital platforms (Miller & Laczinak, 2011; The New York Times, 2008). Celebrities appear in 15% of U.S. ads and 45% of Taiwanese ads (Ad Age, 2010). In 2013, 19 celebrities were used as endorsers in Super Bowl ads; that number rose to 38 in 2016 (USA Today, 2016). In 2006, $2 billion was spent on U.S. celebrity advertising (White et al., 2009), and Nike spent $2.4 billion on celebrity endorsements in 2011 (Fortune, 2012).

Both professionals and scholars agree that crucial factors in the effectiveness of celebrity endorsement include perceived image, credibility, likability, attractiveness, expertise, and trustworthiness of the endorser (Amos et al., 2008; Erdogan et al., 2001). However, on what basis do such factors make a difference? One possible basis is a positive consumer-celebrity relationship. Without a positive connection, no factor could elicit positive ad effects (Hung et al., 2011). For example, if an infamous celebrity (i.e., Paris Hilton) endorsed a perfume, consumers might not buy it (Hung et al., 2011).

One dimension of a positive relationship is emotional attachment (EA) between consumers and a celebrity. Based on attachment theory (Bowlby, 1979), EA is defined as an
emotional bond between a person and an object (e.g., celebrity). In brief, attachment theory states that the stronger the emotional bond that people form with an object is, the more likely they are to love the object and feel affectionate toward the object. Strong EA to a celebrity endorser can lead to more favorable brand attitude and stronger purchase intent than weak EA (Illicic & Webster, 2011). Furthermore, strong EA is more likely to motivate consumer trust in and generate satisfaction with a celebrity (Thomson, 2006).

On the other hand, the match-up hypothesis suggests that celebrity endorsement is more effective when an endorser’s image and a product’s image match than when they are mismatched (Kahle & Homer, 1985; Kamins, 1990; Misra & Beatty, 1990; Till & Busler, 2000). The match-up hypothesis has attracted a significant amount of attention from advertisers (e.g., Fortune, 1998, 2014a; The New York Times, 2008), ad agencies (e.g., Desmarais, 2014; Erdogan et al., 2001; Miciak & Shanklin, 1994), and ad scholars (e.g., Amos et al., 2008; Boyd & Shank, 2004; Choi & Rifon, 2012; Kamins & Gupta, 1994; Koernig & Boyd, 2009; Siemens et al., 2008; Till & Busler, 1998) for several decades because it positively impacts various advertising outcomes: (a) credibility (i.e., likability, attractiveness, expertise, and trustworthiness of the endorser), (b) attitude (i.e., toward the endorser, ad, and brand), (c) purchase intent, and (d) product sales. Knowing whether the ad effects of celebrity endorser attachment might be greater when the endorser and product images match up is crucial because endorser-product congruence can determine celebrity endorsement effectiveness (e.g., Amos et al., 2008; Erdogan, 1999; Erdogan et al., 2001; Kahle & Homer, 1985; Kamins, 1990; Misra & Beatty, 1990; Till & Busler, 2000). The current study examined this important question.

Many brand attachment studies exist (e.g., Thomson et al., 2005), but only a few have addressed celebrity endorser attachment (e.g., Illicic & Webster, 2011). Despite the importance
of EA, few studies have explored whether strong EA and high endorser-product congruence interact to improve credibility (i.e., likability, attractiveness, trustworthiness, and expertise of the endorser), attitude (i.e., toward the endorser, ad, and brand), and purchase intent more than weak EA and low endorser-product congruence.

**Purpose of the Dissertation**

In sum, the purpose of this study is to examine, based on affect transfer theory (e.g., Biswas et al., 2006), whether strong EA to a sports celebrity endorser might lead to larger direct effects on the advertising outcomes: credibility (i.e., likability, attractiveness, trustworthiness, and expertise of the endorser), attitude (i.e., toward the endorser, ad, and brand), and purchase intent. Affect transfer theory helps explain how and why EA is effective. That is, a previously formed positive or negative EA to a celebrity can be transferred to the endorsed brand, thereby producing positive or negative attitude and purchase intent. The transfer of positive affect (i.e., strong EA) from a celebrity to the endorsed brand should improve endorser credibility, attitude, and purchase intent more than the transfer of negative affect (i.e., weak EA).

In addition, this study examined, based on schema congruity theory (Fiske, 1982), whether high (vs. low) endorser-product match-up produced greater direct effects on the advertising outcomes. Schema congruity (vs. incongruity) occurs when product attributes are congruent (vs. incongruent) with existing celebrity schemas in an ad. Schema congruity leads to more favorable evaluations because the affect based on the existing celebrity schema is transferred to the endorsed product. Accordingly, congruent ads should increase endorser credibility, improve consumer attitude, and raise purchase intent more than incongruent ads.

Moreover, this study investigated, based on the integration of affect transfer and schema congruity, whether strong EA and high endorser-product match-up might lead to more positive
effects on the advertising outcomes than weak EA and low endorser-product match-up. Because both the transfer of positive affect (i.e., strong EA) from a celebrity to an endorsed brand and congruent ads lead to higher endorser credibility, more favorable consumer attitude, and higher purchase intent than the transfer of negative affect (i.e., weak EA) and incongruent ads, EA and congruence might interact to strengthen their respective effects.

Additional efforts included testing the mediation effect of brand attitude on purchase intent. As efforts, it is important to examine the mediating roles of brand attitude as a useful predictor in consumer behavior (Lee & Koo, 2015; Spears & Singh, 2004).

Using a 2 (EA: strong vs. weak) × 2 (Endorser-product match-up: high vs. low) factorial design, the current study addressed the following gaps in the endorser attachment literature: the match-up effects, the effects of EA on endorser credibility and endorser attitude, and the mediation effects of brand attitude. Famous athletes were used because they are among the most sought-after endorsers (Carrillat et al., 2013). Samples were college students.

In terms of the organization of the dissertation, Chapter 2 will review attachment theory first, followed by source attractiveness and credibility models in celebrity endorsement, and image and affect transfer in celebrity endorsement. The chapter also describes match-up hypothesis, schema congruity theory, and the integration of affect transfer and schema congruity. The chapter ends with proposed hypotheses. Chapter 3 describes participants and study design, followed by manipulations of product choice and athlete-product match-up, and measurements of brand familiarity. The chapter also describes the study’s pretest, stimuli, procedures, and all measures and statistical analyses. Chapter 4 reported on the study’s results. And finally, Chapter 5 focuses on discussions, implications, and limitations.
CHAPTER 2
LITERATURE REVIEW

Attachment Theory

Providing a theoretical basis for explaining strong emotional relationships with objects, attachment theory states that the more strongly people are emotionally attached to an object, the more likely they are to engage in attachment behavior (e.g., maintaining proximity to the attachment object; Bowlby, 1979). People form strong EA to various objects, such as celebrities (Thomson, 2006), pets (Zilcha-Mano et al., 2012), sport teams (Dwyer et al., 2015), tourist attractions (Ram et al., 2016), and cell phones (Konok et al., 2016). Strong EA is a type of strong relationship that people form with such objects. More specifically, people form strong EA in various types of strong relationships: mother-child relationships (Bowlby, 1979), friendships (Hudson et al., 2015), romantic relationships (Simpson et al., 2007), and fan-celebrity relationships (Thomson, 2006), and fan-sport team relationships (Dwyer et al., 2015).

Bowlby (1979) initially proposed attachment theory to explain strong mother-child emotional relationships, defining attachment as an emotional bond between a person and an object. Strong EA to an object is related to strong feelings (e.g., affection and love), which are revealed through attachment behavior (Bowlby, 1979, 1980; Hazan & Zeifman, 1994). With strong EA, one is more likely to remain loyal to, invest in, and maintain proximity to the attachment object. Furthermore, when people experience real or imagined separation from an attachment object, they tend to suffer strong distress, and when people suffer from stress, they tend to receive physical or psychological comport from an attachment object.
Because the primary focus of the current study is celebrity endorsement, the literature review focuses on celebrity and brand attachment.

Based on the attachment concept from Bowlby (1979), Thomson et al. (2005) defined *brand attachment* as consumer-brand emotional bonds, and Thomson (2006) defined *celebrity attachment* as consumer-celebrity emotional bonds. The conceptual difference between the two attachment types is clear from their operational definitions. Thomson et al. (2005) measured brand attachment using an emotional *feeling* scale (e.g., feeling love toward a brand), whereas Thomson (2006) measured celebrity attachment using an emotional *behavior* scale (e.g., experiencing distress when separated from a celebrity). In other words, Thomson et al. (2005) investigated whether strong EA to a brand related to strong affection and love toward the brand, but Thomson (2006) examined whether strong EA to a celebrity was revealed through attachment acts. Despite this difference, the two attachment scales correlate. For instance, strong EA (i.e., affection and love) to an object can be revealed through attachment acts. That is, attachment acts might be motivated by strong EA. All of brand and celebrity attachment studies reviewed below used the emotional *feeling* scale of Thomson et al. (2005) and the emotional *behavior* scale of Thomson (2006), respectively.

Strong brand attachment leads to more favorable brand evaluation. Thomson et al. (2005) found that EA to a brand positively correlated to brand attitude, attachment acts (e.g., maintaining proximity to the brand), and investment acts (e.g., brand loyalty and paying more for the brand). Fedorikhin et al. (2008) showed that strong (vs. weak) EA to a parent firm’s sneaker brand had more favorable effects on the intent to purchase that firm’s extended brand (i.e., shorts) and word-of-mouth (i.e., recommending shorts to others). Muehling et al. (2014) identified that the nostalgic (vs. non-nostalgic) ad produced more positive brand attitude and
purchase intent when the consumer already had strong EA to a brand. However, under the weak EA condition, the mean differences between the two ad effects were not significant. Previous studies have shown that EA to a store brand can be impacted by store-evoked affect. Orth et al. (2010) found that consumer arousal and pleasure evoked by the environment (e.g., music, workers, products, and interior design) of a drink store visit had positive effects on EA to the store brand. The effect of a strong (vs. weak) brand attachment on purchase intent can be negatively affected by unethical behavior of the firm that produces the brand. Schmalz and Orth (2012) showed that consumers who were strongly (vs. weakly) attached to a brand had lower purchase intent after seeing a firm commit unethical acts (i.e., unemployment by factory closure).

Although a few celebrity attachment studies have been conducted, none examined the primary interests of the current study. Thomson (2006), for example, measured celebrity attachment using the emotional behavior scale and found positive correlations between celebrity attachment and several dependent variables (i.e., trusting, committed, and satisfactory relationships with the celebrity). However, it did not address celebrity endorsement. Thomson (2006) was extended by Illicic and Webster (2011) to the context of celebrity endorsement. They showed that strong EA to a celebrity endorser led to more favorable attitude toward the ad and brand and higher purchase intent than weak EA. Despite the similarity to the current study (i.e., both measured the effect of celebrity endorser attachment on attitude toward the ad, brand attitude, and purchase intent), Illicic and Webster (2011) measured endorser attachment using the emotional behavior scale from Thomson (2006), whereas the current study examined endorser attachment using the emotional feeling scale from Thomson et al. (2005). Furthermore, they used famous television presenters and non-sport products, whereas the current study used famous
athletes and a sport-related product. The current study also examined match-up effects and mediation effects, as well as the relationship between endorser attachment and various endorser-related variables (e.g., credibility). Illicic and Webster (2011) also did not clearly explain how and why strong (vs. weak) EA to a celebrity endorser might lead to more favorable attitude toward the ad and brand and higher purchase intent. They listed several endorsement theories (e.g., source attractiveness model) and related findings but did not explain how and why such theories and results were related to predicting the ad effects of strong (vs. weak) EA to a celebrity endorser. The present study offers further clarification of these relationships.

For several reasons, the current study used the emotional feeling scale (e.g., feeling love or affection toward a celebrity) rather than the emotional behavior scale (e.g., experiencing distress when separated from a celebrity). One is that this study measured the emotional feelings of consumers toward a celebrity endorser. Another is that the feeling scale is more obviously related to endorser credibility factors (e.g., likability, attractiveness, and trustworthiness) and endorser attitude. Specifically, strong EA to a celebrity might reflect and form more favorable attitude toward the object because strong EA relates to strong affection and love toward that object (Bowlby, 1979). These emotional feelings also related to likability, attractiveness, and trustworthiness. To like an endorser is to feel affection for an endorser (McGuire, 1985). Likable and famous endorsers tend to be attractive, and attractiveness can make people like an endorser (McGuire, 1985). Likable celebrities are also trusted (Friedman et al., 1979). Lastly, the emotional feeling rather than behavior scale is more appropriate and related to affect transfer theory (e.g., Biswas et al., 2006), which was used in the present study to explain why endorser attachment is effective. The “affect” in this theory refers to feelings that a consumer has toward a celebrity.
Source Attractiveness and Credibility Models in Celebrity Endorsement

To explain the persuasiveness of an endorser, celebrity endorsement studies have used three types of source models: the source attractiveness model (SAM) from McGuire (1985), the source credibility model (SCM) from Hovland, Janis, and Kelley (1953), and the SCM from Ohanian (1990).

SAM states that communication effects rest on the perceived attractiveness of an endorser based on familiarity, likability, and/or similarity. That is, this model argues that endorsers who are known to, liked by, and/or similar to consumers are attractive and persuasive. The SCM from Hovland et al. (1953) claims that message effects rest on the expertise and trustworthiness of an endorser. This model argues that endorsers considered to have expertise and be trustworthy are credible and persuasive. The SCM from Ohanian (1990), which combines SAM and the SCM from Hovland et al. (1953), claims that message effects rely on the attractiveness, expertise, and trustworthiness of an endorser, arguing that more attractive and more credible endorsers are more persuasive.

Familiarity is defined as knowledge of an endorser via exposure, likability as affection that results from the physical looks and acts of an endorser, similarity as endorser-recipient resemblance (McGuire, 1985), trustworthiness as the extent to which recipients perceive that the endorser makes honest, unbiased assertions, expertise as the degree to which recipients perceive the ability of an endorser to make valid assertions (Hovland et al., 1953), and endorser credibility as the positive characteristics of an endorser (i.e., attractiveness, trustworthiness, and expertise) that affect message acceptance (Ohanian, 1990).

McCracken (1989) argued that SAM and the SCM from Hovland et al. (1953) have limitations. Combining these two models, the SCM from Ohanian (1990) does not consider
product factors, only celebrity endorser attributes perceived by consumers (e.g., expertise). Her SCM merely states that any attractive and credible celebrity endorser is persuasive for any ad message.

Perceived likability of and similarity to a celebrity endorser are positively correlated to endorser attractiveness, expertise, and trustworthiness (Ohanian, 1990). The use of highly attractive and credible celebrity endorsers leads to more favorable product images and higher sales (Ohanian, 1990) as well as more favorable attitude toward the ad and brand and higher purchase intent (Ohanian, 1990; Goldsmith, Lafferty, & Newell, 2000; Kahle & Homer, 1985; Kamins, 1990). Furthermore, an attractive and credible sports celebrity endorser can more effectively enhance match-up between an endorsing athlete and a sport-related product (Parker & Fink, 2012).

The message effects of three endorser credibility factors (i.e., attraction, expertise, and trust) are affected by athletic performance, endorser-product match-up, product involvement, and ethical behavior. For example, the effects of attractive and credible sports celebrity endorsers on attitude toward the ad, brand attitude, and purchase intent are more pronounced after a good (vs. bad) athletic performance (Koo et al., 2012). In addition, the effects of an attractive and credible sports celebrity endorser on attitude toward the ad, brand attitude, and purchase intent are stronger with high match-up between an athlete endorser and a sport product than low match-up between an athlete endorser and a non-sport product (Lee & Koo, 2015). Moreover, the effects of attractive and likable celebrity endorsers on product attitude and purchase intent are more pronounced with low (vs. high) product involvement (Kahle & Homer, 1985; Petty et al., 1983). Furthermore, unethical behavior (e.g., doping and drunk driving) revealed in the news has negative effects on perceived attractiveness and credibility of the endorser as well as attitude
toward the endorser, brand attitude, and purchase intent (Carrillat et al., 2013; Thwaites et al., 2012; Till & Shimp, 1998).

**Image and Affect Transfer in Celebrity Endorsement**

Celebrity endorsement studies have examined and verified image transfer from celebrity to brand/product, also known as affect transfer (Amos et al., 2008; Biswas et al., 2006; Kim & Cheong, 2011; Till et al, 2008). Consumers have preconceived positive or negative images of or feelings toward a celebrity endorser, and this image or affect can be transferred to the endorsed brand, thereby impacting attitude toward the ad and brand and purchase intent. That is, the transfer of positive image or affect from celebrity endorser to product should lead to more positive endorser perception (i.e., credibility), more favorable consumer attitude (i.e., toward the endorser, ad, and brand), and higher purchase intent than the transfer of negative image or affect. This transfer has been used to explain the effectiveness of product endorsements using celebrity image (e.g., attractiveness and likability; Amos et al., 2008). This transfer can also explain why endorser attachment is effective. EA is another type of image or affect. With similarities to liking and emotional feeling attributes, EA to an object is a measure of affection and love (Bowlby, 1979). Liking is affection for an endorser (McGuire, 1985), and both celebrity attachment (Thomson, 2006) and likability (Ohanian, 1990) have positive effects on trustworthiness.

Advertisers have experienced positive ad effects of favorable image/affect transfer from celebrity to brand. For example, favorable image/affect transfer from Michael Jordan to shoes and apparel helped Nike not only enhance brand image and attitude but generate $2.6 billion in product sales (Fortune, 1998). Thus, the success of celebrity endorsement relies on the selection of celebrities who can transfer positive image or affect to both consumers and brands. High celebrity attachment or credibility leads to more favorable ad effects than low celebrity
attachment or credibility because celebrity image or affect tends to be associated with an endorsed brand or product in the minds of consumers.

**Match-up Hypothesis**

The match-up hypothesis (e.g., Kamins, 1990) proposes that congruency between celebrity image and endorsed product image leads to more positive ad effects than incongruency. In other words, celebrity endorsement is more effective when the attributes of an endorser are congruent with the attributes of an endorsed product (Misra & Beatty, 1990).

The match-up hypothesis has been widely accepted in academia. Celebrity-product image match-up enhances endorser credibility (Kamins, 1990; Siemens et al., 2008), endorser likability (Koernig & Boyd, 2009), endorser attraction (Kamins & Gupta, 1994), endorser expertise (Boyd & Shank, 2004; Siemens et al., 2008; Till & Bulser, 1998, 2000), endorser trustworthiness (Koernig & Boyd, 2009; Siemens et al., 2008), endorser attitude (Koernig & Boyd, 2009), ad attitude (Choi & Rifon, 2012; Kamins, 1990), product attitude (Kahle & Homer, 1985; Kamins & Gupta, 1994; Kim & Na, 2007; Koernig & Boyd, 2009; Till & Bulser, 1998, 2000; Till et al., 2008), brand affect (Misra & Beatty, 1990), brand recall (Misra & Beatty, 1990), and purchase intent (Kahle & Homer, 1985; Till & Busler, 1998).

Many advertisers have also embraced the match-up hypothesis because they assume that a celebrity image will be transferred to products associated with a celebrity. Beauty-related product advertisers for Chanel perfume, L’Oréal Paris hair color, and acne skin-care line Proactiv Solution have used the physically attractive Nicole Kidman, Eva Longoria, and Jessica Simpson as endorsers, respectively (*The New York Times*, 2008). Sport advertisers for Callaway, Gatorade, and Nike have used the popular Phil Mickelson, Peyton Manning, and LeBron James as endorsers, respectively (*Fortune*, 2014a).
Match-up effect studies have largely addressed two types of match-up factors: physical attractiveness and expertise of a celebrity endorser. Studies focused on attractiveness have examined the match-up effects of a physically attractive celebrity and a product used to enhance physical attractiveness or beauty. For example, Kahle and Homer (1985) identified that a physically attractive celebrity endorser was more effective in enhancing product attitude and purchase intent than a physically unattractive celebrity endorser when promoting a shaving razor. Kamins (1990) found that an attractive celebrity was more effective in enhancing endorser credibility and ad attitude when promoting a luxury car. In order to manipulate congruence, attractiveness match-up effect studies have compared products designed to enhance attractiveness with products that are less relevant to attractiveness: luxury car vs. home computer (Kamins, 1990), cologne vs. pen (Till & Busler, 2000), and perfume vs. personal digital assistant (Choi & Rifon, 2012).

Match-up effect studies focused on expertise have investigated the effects of congruency between a sports celebrity’s expertise (i.e., experience and knowledge) in sport (i.e., games and exercise) and a sport-related product. In brief, because athletes have high expertise in sport, they have credibility and can effectively endorse for sport-related goods (Koernig & Boyd, 2009). Specifically, athletes are more effective endorsers of products and brands related to athletics or sport because they are perceived to have much experience in those fields and with those types of products. Because athletes often use sport-related products when doing sport-related activities, they are more likely to know about the features and benefits of the sport products they use and, thus, might be considered experts on those types of products by consumers. Till and Busler (1998) showed that a celebrity athlete endorser was more effective in enhancing attitude toward and purchase intent for an energy bar than a celebrity actor endorser. Koernig and Boyd (2009)
found that when a sports celebrity endorsed a sport-related product rather than a fashion clothing brand, consumers had more favorable attitudes toward the endorser and the brand. Similar studies have compared products that are highly related to sport to products that are less related to sport: energy drink vs. wine (Misra & Beatty, 1990); energy bar vs. candy bar (Till & Busler, 2000); sports shoe vs. perfume (Kim & Na, 2007); sports drink vs. iced tea (Fink et al., 2012); sports shoe vs. laptop computer (Carrilat et al., 2013); and sports drink vs. toothpaste (Lee & Koo, 2015).

The match-up hypothesis is best explained by schema congruency theory. In advertising that features celebrity endorsement, schemas of the celebrity and product comprise attributes of that celebrity and product. The match-up hypothesis suggests that celebrity endorsement is more effective when the attributes of an endorser are congruent with the attributes of an endorsed product.

Schema Congruency Theory

The effectiveness of celebrity-product image match-up has been explained using schema congruency theory (Fiske, 1982), also called schema theory. Schema congruency is defined as the degree to which features of an object are congruent with an existing schema in memory (Fiske, 1982; Meyers-Levy & Tybout, 1989). Schema congruency occurs when the attributes of an object are congruent with an existing schema (Fiske, 1982; Meyers-Levy & Tybout, 1989). Schema congruency theory argues that such schema congruency (vs. incongruity) is more favorably evaluated due to schema-based affect transfer (Fiske, 1982; Fiske & Pavelchak, 1986; Sujan, 1985). Specifically, schema congruency causes the affect of an existing schema to be transferred to the object, which can then be favorably evaluated. However, schema incongruity does not lead to affect transfer, preventing favorable evaluation of an object. Schema congruency, leading to affect
transfer, makes consumers think less about the level of congruence, but schema incongruity, limiting affect transfer, makes them think more about it.

In match-up effect studies, schema congruity occurs when the image of an object (e.g., a product) is congruent with an existing schema (e.g., a celebrity). Some studies (Koernig & Boyd, 2009; Misra & Beatty, 1990), using schema congruity theory, have shown that schema congruity produced more favorable ad responses than schema incongruity. Misra and Beatty (1990) also found that affect transfer from celebrity to brand occurred only when the schema were congruent. Moreover, Koernig and Boyd (2009) showed that schema congruity caused fewer ad-related thoughts than schema incongruity. In the context of athlete-product match-up, schema congruity theory proposes that congruence between the image of a sport product and the image of an existing celebrity athlete schema should produce more positive ad responses than incongruence. That is, congruent ads should lead to more positive endorser perception (i.e., credibility), more favorable consumer attitude (i.e., toward the endorser, ad, and brand), and higher purchase intent than incongruent ads because the affect of an existing celebrity athlete schema is transferred to the endorsed sport-related product.

**Integration of Affect Transfer Theory and Schema Congruity Theory**

The current study is interested in predicting that strong EA and high match-up interact to generate more positive endorser perception (i.e., credibility), more favorable consumer attitude (toward the endorser, ad, and brand), and higher purchase intent than weak EA and low match-up. This prediction is based on the integration of affect transfer theory and schema congruity theory. Because both the transfer of positive affect (i.e., strong EA) from a celebrity to an endorsed brand and congruent ads lead to higher credibility, more favorable consumer attitude,
and higher purchase intent than the transfer of negative affect (i.e., weak EA) and incongruent ads, EA and congruence might interact to strengthen their respective effects.

Affect transfer theory is similar to schema congruity theory in a way. Both celebrity affect in the former and celebrity schema in the latter have been previously formed. The difference between them is that celebrity affect in the former always transfers to the endorsed product, whereas celebrity affect in the latter theory is transferred to the endorsed product only when the attributes of the celebrity and product are congruent.

**Hypotheses**

The hypotheses of the current study address each of two main effects (i.e., EA and endorser-product match-up) and their interaction effect. For the first main effect, we hypothesized that strong (vs. weak) EA to a celebrity endorser would have larger direct effects on each of the advertising outcomes: (a) credibility, (b) attitude, and (c) purchase intent.

**Relationship between EA and Likability**

EA to an endorser is similar and related to likability. To like an endorser is to feel affection for an endorser (McGuire, 1985). Strong EA to a person relates to strong affection and love (Bowlby, 1979). This relatedness means that the stronger the emotional bond that people form with an object is, the more likely they are to love the object and feel affectionate toward the object. Therefore, the current study proposed the following:

\[ H1a: \text{Strong (vs. weak) EA will lead to higher perceived likability of the endorser.} \]

**Relationship between EA and Attractiveness**

Endorser likability, similar to EA, correlates to attraction. Known and liked endorsers are attractive, and people tend to like a physically attractive endorser (McGuire, 1985). Studies
(Kamins, 1990; Ohanian, 1990) have found that likability has strong positive correlations to attractiveness. Therefore, the current study proposed the following:

\[ H1b: \text{Strong (vs. weak) EA will lead to higher perceived attractiveness of the endorser.} \]

**Relationship between EA and Expertise**

Expertise refers to the perceived ability of an endorser to make valid assertions (Hovland et al., 1953) and consists of professional expertise and product expertise (Ohanian, 1991; Siemens et al., 2008). In the context of celebrity endorsement, expertise is an endorser’s perceived experience with and knowledge about an endorsed product that support the claims an endorser makes about an advertised product. Such experience and knowledge are based on professional expertise of an endorser. For example, a professional athlete or medical doctor is likely to be perceived as having experience with and knowledge about a sport-related product or medical product, respectively, because the products are closely associated with their professions. Thus, *product expertise* and *professional expertise* are distinct concepts that potentially overlap, depending on whether the endorsed product is integral to the endorser’s profession. For example, LeBron James might be perceived as having high expertise in a basketball-related product because he is also perceived as having high expertise in the sport of basketball.

Endorser likability, similar to EA, is correlated with product expertise. Ohanian (1990) found that liking of a celebrity endorser has strong positive correlations to product expertise. Moreover, Buhr et al. (1987) showed that a celebrity endorser with high product expertise had higher perceived likability. Siemens et al. (2008) verified that product expertise had a moderate positive correlation \((r = .51)\) to professional expertise. This correlation seems reasonable. For example, fans who are strongly attached to LeBron James are likely to pay more attention on him
and have access to more information about his professional expertise. Therefore, the current study proposed the following:

- **H1c**: Strong (vs. weak) EA will lead to higher perceived product expertise of the endorser.
- **H1d**: Strong (vs. weak) EA will lead to higher perceived professional expertise of the endorser.

**Relationship between EA and Trustworthiness**

Studies have shown that strong emotional bonds between a consumer and a celebrity enhance the perceived trustworthiness of the celebrity (Thomson, 2006). Thomson (2006) found that strong EA to a celebrity positively impacted feelings of trust. Other studies have found that liked celebrities were also trusted (Friedman & Friedman, 1976; Friedman et al., 1979). Ohanian (1990) reported that perceived likability had strong positive correlations to perceived trustworthiness of an endorser. Therefore, the current study proposed the following:

- **H1e**: Strong (vs. weak) EA will lead to higher perceived trustworthiness of the endorser.

**Relationship between EA and Attitude toward Endorser**

Endorser attachment has attributes that reflect and form attitude toward the endorser because EA to an object consists of affection and love toward an object (Bowlby, 1979). Illicic and Webster (2011), for instance, confirmed that consumers form strong EA (i.e., positive attitude) or weak EA (i.e., negative attitude) to a celebrity endorser. Furthermore, perceived likability can be viewed as an attitudinal attribute. Studies have found that consumers can form strong (i.e., favorable attitude) or weak (i.e., unfavorable attitude) perceptions of endorser likability (Kahle & Homer, 1985; Kamins, 1990; Reinhard & Messner, 2009). Therefore, the current study proposed the following:
**H1f:** Strong (vs. weak) EA will lead to more favorable attitude toward the endorser.

**Influence of EA on Attitude toward Ad, Brand Attitude, and Purchase Intent**

Affect transfer theory explains that strong EA will have a greater effect on attitude toward the ad, brand attitude, and purchase intent. Specifically, strong EA (i.e., favorable affect) leads to more favorable attitude and higher purchase intent than weak EA because affect is transferred to the endorsed product. Illicic and Webster (2011) found that strong celebrity attachment led to more favorable attitude toward the ad and brand and higher purchase intent than weak celebrity attachment. Perceived likability, similar to EA, is correlated to attraction. Studies have shown that higher perceived likability resulted in more favorable brand attitude and higher purchase intent than lower perceived likability (Kahle & Homer, 1985; Reinhard & Messner, 2009). SAM claims that message effects depend on endorser attractiveness, which is based on familiarity and likability (McGuire, 1985). Other studies have reported that attractive celebrities produced more favorable attitude toward the ad and brand and higher purchase intent than unattractive ones (Kahle & Homer, 1985; Kamins 1990; Till & Busler, 1998, 2000). Therefore, the current study proposed the following:

**H1g:** Strong (vs. weak) EA will lead to more favorable attitude toward the advertisement.

**H1h:** Strong (vs. weak) EA will lead to more favorable attitude toward the brand.

**H1i:** Strong (vs. weak) EA will lead to higher purchase intent.

Hypotheses for the second main effect addressed the relationship between endorser-product congruity and each of the ad outcomes.

**Relationship between Endorser-Product Match-up and Perceived Likability**

Perceived likability of a celebrity endorser is enhanced when the endorser is perceived to have higher expertise in the endorsed product (Buhr et al., 1987; Ohanian, 1990). The current
study examined whether this match-up had a strong impact on perceived likability. Athletes are perceived as having higher expertise in sport-related products than in non-sport-related products because they have more experience with and knowledge about products they use while engaged in sport activities. Thus, when a celebrity athlete endorses a sport-related product, consumers give more favorable attention to the endorser. Koernig and Boyd (2009) found that when a famous professional football player endorsed a sport-related product rather than a fashion clothing brand, the endorser was perceived as more likable. Therefore, the current study proposed the following:

\[ \text{H2a: A high (vs. low) level of endorser-product match-up will lead to higher perceived likability of the endorser.} \]

**Relationship between Endorser-Product Match-up and Perceived Attractiveness**

Studies have found that when celebrity athletes endorse their sport-related products, they are not perceived as more attractive than when they endorse non-sport-related products (Boyd & Shank, 2004; Siemens et al., 2008; Till & Busler, 1998, 2000). Moreover, athlete-product congruence based on expertise is not likely to affect perceived attractiveness. Therefore, the current study did not hypothesize a relationship between endorser-product match-up and perceived attractiveness, but it did explore whether match-up strength correlated to higher perceived attractiveness.

**Relationship between Endorser-Product Match-up and Perceived Expertise**

The current study examined the impact of sport celebrity endorsement of a sport-related product on perceived expertise. Athletes are perceived as having more professional expertise and product expertise when endorsing a sport-related product. Related studies about product expertise have found that when celebrity athletes endorse sport-related products, they are
perceived as having higher expertise in those products (Boyd & Shank, 2004; Till & Busler, 1998, 2000).

In the current study, Derrick Henry was used as a celebrity athlete endorser of both a sport-related and a non-sport-related product. Because consumers have previously formed a perception of his professional expertise, we might assume that no relationship exists between match-up and perceived professional expertise. However, consumers might perceive an athlete endorser as having more professional expertise when looking at a congruent ad than when looking at an incongruent ad. This trend is possible because perceptions of an endorser’s job-related expertise might be affected by perceptions of professional expertise displayed by an ad (Siemens et al., 2008). Siemens et al. (2008) found that a male race car driver was perceived as having higher expertise in professional driving when endorsing a job-related product. Interestingly, this result was statistically significant at the .001 level (p. 165). Therefore, the current study proposed the following:

\[ H2b: \text{A high (vs. low) level of endorser-product match-up will lead to higher perceived product expertise of the endorser.} \]

\[ H2c: \text{A high (vs. low) level of endorser-product match-up will lead to higher perceived professional expertise of the endorser.} \]

**Relationship between Endorser-Product Match-up and Perceived Trustworthiness**

When celebrity athletes endorse sport-related products, they are perceived as having higher expertise in the endorsed products than when they endorse non-sport-related products (Boyd & Shank, 2004; Till & Busler, 1998, 2000). Thus, they are likely to be perceived as more trustworthy when an ad is congruent. Koernig and Boyd (2009) found that when a celebrity athlete endorsed a sport-related brand, the athlete was perceived as more trustworthy. Siemens et
al. (2008) found that celebrity athletes were perceived as having more expertise in their sport and as being more trustworthy when endorsing sport-related products rather than non-sport-related products. Therefore, the current study proposed the following:

\[ H2d: \text{A high (vs. low) level of endorser-product match-up will lead to higher perceived trustworthiness of the endorser.} \]

**Relationship between Endorser-Product Match-up and Attitude toward Endorser**

The use of a celebrity endorser with high product expertise increases perceived likability (Buhr et al., 1987; Ohanian, 1990). Athletes are perceived as having more expertise in the sport-related products they endorse. Thus, they are more likely to be favorably perceived when they endorse sport-related products. Koernig and Boyd (2009) showed that when a celebrity athlete endorsed a sport-related product, consumers not only had more positive attitude toward the endorser but perceived the athlete endorser as being more likable. Therefore, the current study proposed the following:

\[ H2e: \text{A high (vs. low) level of endorser-product match-up will lead to more favorable attitude toward the endorser.} \]

**Impact of Endorser-Product Match-up on Attitude and Purchase Intent**

Schema congruity theory explains that when the image of a sport product is congruent with an existing sport celebrity schema, consumers respond more favorably to ads because the affect based on an existing celebrity athlete schema is transferred to the endorsed product. Studies have shown that when sports celebrities endorse sport-related products, attitude toward the ad and brand is more favorable (Kim & Na, 2007; Koernig & Boyd, 2009) and purchase intent is higher (Till & Busler, 1998). Therefore, the current study proposed the following:
**H2f**: A high (vs. low) level of endorser-product match-up will lead to more favorable attitude toward the advertisement.

**H2g**: A high (vs. low) level of endorser-product match-up will lead to more favorable attitude toward the brand.

**H2h**: A high (vs. low) level of endorser-product match-up will lead to higher purchase intent.

For the interaction effect, we hypothesized that strong EA and high endorser-product match-up would have stronger direct effects on each ad outcome than weak EA and low match-up. All of the hypotheses below were formulated by integrating the theoretical claims and previous findings relevant to the two main effects.

**Effect of EA and Endorser-Product Match-up on Perceived Likability**

EA to an endorser is similar and related to perceived likability. EA to an object is a measure of affection and love (Bowlby, 1979). To like an endorser is to have affection for an endorser (McGuire, 1985). When a celebrity athlete endorses a sport-related product (vs. a non-sport-related product), the athlete is perceived as more likable (Koernig & Boyd, 2009).

Therefore, the current study proposed the following:

**H3a**: The interaction of strong EA and high match-up will lead to higher perceived likability of the endorser than the interaction of weak EA and low match-up.

**Effect of EA and Endorser-Product Match-up on Perceived Attractiveness**

Athletes might not be perceived as more attractive simply because the athlete and the endorsed product are congruent (Boyd & Shank, 2004). However, perceived likability, similar to EA, has strong positive correlations to perceived attractiveness (McGuire, 1985; Ohanian, 1990).

Therefore, the current study proposed the following:
**H3b:** The interaction of strong EA and high match-up will lead to higher perceived attractiveness of the endorser than the interaction of weak EA and low match-up.

**Effect of EA and Endorser-Product Match-up on Perceived Expertise**

Endorser likability, similar to EA, has strong positive correlations to perceived product expertise (Ohanian, 1990). And product expertise has a positive correlation to professional expertise (Siemens et al., 2008). When athlete and product match, celebrity athletes are more likely to be perceived as having more expertise in the endorsed product (Boyd & Shank, 2004) and their sport (Siemens et al., 2008). Therefore, the current study proposed the following:

**H3c:** The interaction of strong EA and high match-up will lead to higher perceived product expertise of the endorser than the interaction of weak EA and low match-up.

**H3d:** The interaction of strong EA and high match-up will lead to higher perceived professional expertise of the endorser than the interaction of weak EA and low match-up.

**Effect of EA and Endorser-Product Match-up on Perceived Trustworthiness**

Strong EA to a celebrity has a strong positive effect on perceived trustworthiness (Thomson, 2006). When a celebrity athlete endorses a sport-related product (vs. a non-sport-related product), the athlete is perceived as more trustworthy (Koernig & Boyd, 2009).

Therefore, the current study proposed the following:

**H3e:** The interaction of strong EA and high match-up will lead to higher perceived trustworthiness of the endorser than the interaction of weak EA and low match-up.

**Effect of EA and Endorser-Product Match-up on Attitude toward Endorser**

Strong (vs. weak) EA to an endorser leads to more favorable (vs. unfavorable) attitude toward the endorser because EA is a measure of affection and love (Bowlby, 1979). When celebrity athletes endorse sport-related products (vs. non-sport-related products), they are more
favorably perceived (Koernig & Boyd, 2009). Therefore, the current study proposed the following:

\[ H3f: \text{The interaction of strong EA and high match-up will lead to more favorable attitude toward the endorser than the interaction of weak EA and low match-up.} \]

**Effect of EA and Endorser-Product Match-up on Attitude and Purchase Intent**

Strong ad effects of high EA and high match-up can be explained by an integrated application of affect transfer theory and schema congruity theory. The transfer of favorable affect (i.e., strong EA) from a celebrity endorser to an endorsed product leads to more favorable attitude toward the ad and brand and higher purchase intent than the transfer of unfavorable affect (i.e., weak EA). Congruent ads that promote affect transfer should have a more positive effect on the dependent measures than incongruent ads that limit affect transfer. Thus, strong EA and high match-up might interact to result in more favorable attitude and higher purchase intent than weak EA and low match-up. Both strong (vs. weak) EA to a celebrity endorser (Illicic & Webster, 2011) and athlete-product congruence (vs. incongruence) lead to more favorable attitude toward the ad and brand (Kim & Na, 2007; Koernig & Boyd, 2009) and higher purchase intent (Till & Busler, 1998). Therefore, the current study proposed the following:

\[ H3g: \text{The interaction of strong EA and high match-up will lead to more favorable attitude toward the advertising than the interaction of weak EA and low match-up.} \]

\[ H3h: \text{The interaction of strong EA and high match-up will lead to more favorable attitude toward the brand than the interaction of weak EA and low match-up.} \]

\[ H3i: \text{The interaction of strong EA and high match-up will lead to higher purchase intent than the interaction of weak EA and low match-up.} \]
CHAPTER 3

METHOD

A pretest and the main experiment were conducted using Qualtrics-based online surveys. Data from the pretest were excluded from the final data analysis. Other than demographic variables, all measures were on a 7-point scale (1 = negative; 7 = positive).

Participants and Study Design

Participants were recruited from communication undergraduates enrolled in the College of Communication and Information Sciences Participant Pool at the University of Alabama (UA). Students were offered extra course credit for participation. A total of 212 undergraduates participated in the study (mean age = 19.31, SD = 1.32; age range = 18 – 28). Women comprised 40.6% (n = 86) of the students, and 78.8% (n = 167) were White.

To test the hypotheses, this study used a 2 (EA: strong vs. weak) × 2 (Endorser-product match-up: high vs. low) factorial between-subjects design. Table 1 shows the design and the sample size for each group.

<table>
<thead>
<tr>
<th>Strength of EA</th>
<th>Level of endorser-product match-up</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong</td>
<td>High</td>
<td>Condition 1: SH (n = 53)</td>
</tr>
<tr>
<td>Weak</td>
<td>High</td>
<td>Condition 2: WH (n = 53)</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Condition 3: SL (n = 53)</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Condition 4: WL (n = 53)</td>
</tr>
</tbody>
</table>

*EA = Emotional Attachment; SH = Strong EA and High match-up; WH = Weak EA and High match-up; SL = Strong EA and Low match-up; WL = Weak EA and Low match-up

Although the sampling criteria might limit the generalizability of the results, student samples are among the most homogeneous segments of consumers, allowing for a more
controlled research sample that remains consistent across pretests and the main study (Kim et al., 2008). In addition, young adult respondents are particularly appropriate to the investigation of celebrity-related phenomena because they are a target market for advertisers that use celebrities and because they commonly form EA to celebrities (Thomson, 2006). Moreover, celebrity endorsement might be more effective to young adults because they tend to respect famous athletes (Atkin & Block, 1983) and be enthusiastic about celebrities (Choi & Rifon, 2012; Hung et al., 2011). A student sample is also appropriate for the products used in the current study (i.e., sports drinks and iced tea) because students are frequently the target market for firms that sell these products. As presented in Figure 1, the minimum statistical power and total sample size for this study are .81 and 49, respectively.

![Figure 1](image)

**Figure 1**

**Results of Calculations on Power and Sample size**

<table>
<thead>
<tr>
<th>Test family</th>
<th>Statistical test</th>
</tr>
</thead>
<tbody>
<tr>
<td>F tests</td>
<td>MANOVA: Special effects and interactions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of power analysis</th>
<th>A priori: Compute required sample size – given α, power, and effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Parameters</td>
<td>Output Parameters</td>
</tr>
<tr>
<td>Determine =&gt; Effect size F(V)</td>
<td>Noncentrality parameter λ</td>
</tr>
<tr>
<td>α err prob</td>
<td>Critical F</td>
</tr>
<tr>
<td>Power (1-β err prob)</td>
<td>Numerator df</td>
</tr>
<tr>
<td>Number of groups</td>
<td>Denominator df</td>
</tr>
<tr>
<td>Number of predictors</td>
<td>Total sample size</td>
</tr>
<tr>
<td>Response variables</td>
<td>Actual power</td>
</tr>
</tbody>
</table>

Notes: Larger effect sizes have more power than smaller effect sizes; the number of groups means the number of manipulated groups; response variables are the number of dependent variables; power is the probability to reject the null hypothesis

**Product Choice and Athlete-Product Match-up**

Sports drinks (i.e., sport-related product) and iced tea (i.e., non-sport-related product) were chosen for the current study because they are familiar to and often consumed by college
students. Both drink types cost about the same, and they permitted manipulation of endorser-product match-up.

Athlete-product match-up was not checked in the pretest but only in the main study in order to avoid repeated measures. Moreover, we assumed that athletes would better fit sport-related products (Till & Bulser, 2000). Much expertise match-up research has found that the level of match-up between an athlete and a sport-related product is significantly greater than the level of match-up between an athlete and a non-sport-related product. For example, sports drinks and iced tea, among 14 different drink product types, were found to be the most congruent and incongruent, respectively, with athletes (Fink et al., 2012). Athletes also fit better with products that enhance athletic performance (Lee & Thorson, 2008). Sports drinks are more highly related to athletic performance than iced tea. Measures for athlete-product match-up included three 7-point bipolar items: not a good fit/a good fit, not a good match/a good match, and does not go together/does go together (see Appendix D). These three items were created based on the concept of endorser-product match-up.

Brand Familiarity

Brand familiarity of the two products was not examined in the pretest but only in the main study in order to avoid repeated measures. Moreover, the current study assumed that subjects would rate the fictitious brand name (i.e., AKEN) as unfamiliar. This name was used to prevent effects of brand familiarity and prior brand attitude. Using unknown rather than well-known brand names is crucial because consumers might have preconceived notions of the established brands. As shown in Appendix D, brand familiarity was measured using one 7-point bipolar item: extremely unfamiliar/extremely familiar (Kamins, 1990).
Pretest

**Aim and Rationale.** The pretest had two aims. The first was to identify the athlete with the strongest EA among the 4 favorite National Football League (NFL) stars and the athlete with the weakest EA among the 4 most disliked NFL stars (see Table 2). The result was determined by the most significant mean difference in EA strength between two athletes. The second aim was to test whether familiarity with both chosen athletes was equal. The success of this test was determined by a non-significant mean difference in familiarity between the two athletes.

### Table 2

<table>
<thead>
<tr>
<th>Initial List of 8 NFL Stars</th>
<th>4 Favorite</th>
<th>4 Most Disliked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russell Wilson (B)</td>
<td>Julio Jones (B)</td>
<td>Michael Vick (B)</td>
</tr>
<tr>
<td>Mark Ingram Jr. (B)</td>
<td>Derrick Henry (B)</td>
<td>Greg Hardy (B)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Terrell Owens (B)</td>
</tr>
</tbody>
</table>

*B = Black

NFL stars were used because professional football is the most popular in the United States (Harris Poll, 2016). Celebrity choice from the list helped maximize endorsement effects because the favorite and most disliked NFL stars are believed to have positive and negative public images, respectively. This method has frequently been used in endorsement studies. For instance, Lee and Koo (2015) used LeBron James as a favorite sports star and Michael Vick as the most disliked sports star to examine the effect of endorser credibility and endorser-product match-up on attitude toward the ad and brand and on purchase intent. The disliked NFL stars on the list were among the five most disliked NFL players (Harris Poll, 2015; *NBC Sports*, 2016; *Sporting News*, 2016) and among the most infamous athletes: Michael Vick due to dog fighting; Ray Rice and Greg Hardy due to sex assault; and Terrell Owens due to a reputation as a selfish player.

Russell Wilson, one of the favorite athletes on the list, was the most popular NFL star (*CBS Sports*, 2015). Three other NFL players, former UA football stars, were included on the list.
of favorite athletes because the student samples consisted of UA students. The UA football team has 16 national championships, including the 2015 title, and college football is the most popular sport in Alabama. Former UA football stars on the list were among 10 fan favorites (Ranker, 2016) and among the 10 best Crimson Tide football players (Bleacher Report, 2016; Sporting News, 2014). Both Mark Ingram and Derrick Henry received the Heisman Trophy, which is awarded annually to the most outstanding player in U.S. college football. Moreover, although consumers might like many celebrities, they can be strongly attached only to a few (Thomson, 2006).

Former NFL and UA football players were included on the list because the strength of EA to a celebrity can be more exactly measured for former players than for current players. According to attachment theory, when people experience real or imagined separation from an attachment object, they feel strong EA. Studies have also measured celebrity attachment using separation-related items (e.g., I miss Derrick Henry when he is not around) (Illicic & Webster, 2011; Thomson, 2006).

Celebrities were used because they are more effective in enhancing attitude toward the ad, brand attitude, and purchase intent than non-celebrity endorsers (Atkin & Block, 1983; Petty et al., 1983). Sports celebrities were used because they are among the most popular (Carrillat et al., 2013). Real rather than fictional celebrities were used to enhance ecological validity. The use of fictitious celebrities would have little theoretical value because the current study, based on affect transfer theory and schema congruity theory, required subjects to evaluate ads based on their already existing celebrity images and/or existing celebrity schemas.

**Procedure and Rationale.** After an introductory page including the aims of the pretest and a consent form, the names, photos, and titles of the eight athletes were given to a group of 49
students to measure levels of football fandom, familiarity with the celebrity, celebrity fandom, and EA to the celebrity. These measures are presented in Appendix A. Both football fandom and celebrity fandom were measured using an item on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree): “I consider myself a fan of football (Derrick Henry).” Celebrity familiarity was assessed using one 7-point bipolar item: extremely unfamiliar/extremely familiar (Kamins, 1990). EA was evaluated using nine 7-point Likert items (e.g., “I love Derrick Henry”) (Thomson et al., 2005).

How strongly the subjects considered themselves a fan of athletes was measured because people tend to feel stronger EA to a celebrity when they are fans of that celebrity (Thomson, 2006). We rechecked EA strength of each celebrity with a larger sample size in the main study. However, following other studies (e.g., Kamins, 1990; Lee & Thorson, 2008), because the pretest on celebrity familiarity was successful, we did not recheck it in the main study.

**Pretest Results**

Two same-race male football stars (i.e., Derrick Henry and Ray Rice) were selected on the basis of celebrity attachment and familiarity. As shown in Table 3, Henry was the athlete with the strongest EA ($M = 5.03$) and the most familiar athlete ($M = 6.12$), but Rice was the second most familiar athlete ($M = 6.04$) and the athlete with the second weakest EA ($M = 1.69$). Participants showed high levels of football fandom ($M = 6.24; SD = 0.83$).

<table>
<thead>
<tr>
<th>Celebrity</th>
<th>Fan ($n = 49$)</th>
<th>Attachment ($n = 49$)</th>
<th>Familiarity ($n = 49$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derrick Henry</td>
<td>6.08 (1.38)</td>
<td>5.03 (1.54)</td>
<td>6.12 (1.30)</td>
</tr>
<tr>
<td>Julio Jones</td>
<td>4.84 (2.20)</td>
<td>3.89 (2.18)</td>
<td>5.73 (1.80)</td>
</tr>
<tr>
<td>Mark Ingram</td>
<td>4.65 (2.05)</td>
<td>3.68 (2.07)</td>
<td>5.41 (1.91)</td>
</tr>
<tr>
<td>Russell Wilson</td>
<td>3.59 (1.54)</td>
<td>2.68 (1.53)</td>
<td>4.47 (2.18)</td>
</tr>
<tr>
<td>Terrell Owens</td>
<td>3.43 (1.80)</td>
<td>2.61 (1.44)</td>
<td>4.35 (2.09)</td>
</tr>
<tr>
<td>Michael Vick</td>
<td>2.98 (2.06)</td>
<td>2.16 (1.46)</td>
<td>5.98 (1.39)</td>
</tr>
<tr>
<td>Ray Rice</td>
<td>2.57 (1.68)</td>
<td>1.69 (1.12)</td>
<td>6.04 (1.12)</td>
</tr>
</tbody>
</table>
According to the results of independent-samples t-tests (see Table 4), EA to Derrick Henry ($M = 5.03$) was significantly stronger than EA to Ray Rice ($M = 1.69$), $t(1, 96) = 12.290$, $p < .001$. However, there was a non-significant mean difference between familiarity with Henry ($M = 6.12$) and Rice ($M = 6.04$), $t(1, 96) = 0.333$, $p > .05$. This non-significant result indicates that levels of familiarity with Henry and Rice were roughly equal. The results satisfied the aims of the pretest and permitted an exclusive focus on attachment.

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Mean Difference in Celebrity Attachment and Familiarity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Derrick Henry</td>
</tr>
<tr>
<td>Celebrity attachment</td>
<td>5.03 (1.54)</td>
</tr>
<tr>
<td>Celebrity familiarity</td>
<td>6.12 (1.30)</td>
</tr>
</tbody>
</table>

Notes: Values outside (inside) of parentheses are means (standard deviations); ***$p < .001$

Advertisement Stimuli

Four full-page color print ads were created (see Appendix B). The product and endorser for the ad in each condition are presented in Table 5.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Four Advertising Stimuli and Four Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ads</td>
<td>Products and endorsers in the four conditions</td>
</tr>
<tr>
<td>Ad 1</td>
<td>sports drink endorsed by Derrick Henry (strongest EA) in Condition 1: SH</td>
</tr>
<tr>
<td>Ad 2</td>
<td>sports drink endorsed by Ray Rice (weakest EA) in Condition 2: WH</td>
</tr>
<tr>
<td>Ad 3</td>
<td>iced tea endorsed by Derrick Henry (strongest EA) in Condition 3: SL</td>
</tr>
<tr>
<td>Ad 4</td>
<td>iced tea endorsed by Ray Rice (weakest EA) in Condition 4: WL</td>
</tr>
</tbody>
</table>

*EA = Emotional Attachment; SH = Strong EA and High match-up; WH = Weak EA and High match-up; SL = Strong EA and Low match-up; WL = Weak EA and Low match-up

Each of the four ads was carefully constructed to be identical. Similar to Kamins (1990), all four ads had identical layouts and spacing with a personal statement made by the featured celebrities (e.g., Henry’s new preferred sports drink: AKEN) appearing at the top of the page. Each ad contained a photo of the endorser in a business suit on the left side of the page with a
short caption under the photo (e.g., Derrick Henry: football player and spokesperson for AKEN). Each ad also had a same headline (e.g., AKEN, a new type of sports drink) and brief line of copy (three attributes of each product) on the right side of the page. A picture of each product appeared under the product attributes. To minimize the effect of prior brand experience, the fictitious brand name AKEN was used for all four ads.

**Procedures in the Main Experiment**

After an introductory page including the aim of the study and a consent form, subjects were asked to answer pre-exposure items about demographic variables, football fandom, UA football team fandom, brand familiarity, and product involvement. Next, subjects were randomly exposed to one of the four ads and asked to respond to post-exposure items regarding manipulation checks (i.e., endorser-product match-up and EA), endorser credibility (i.e., likability, attractiveness, product/professional expertise, and trustworthiness), attitude toward the endorser, ad, and brand, and purchase intent. Product involvement was measured to confirm a non-significant mean difference between the two products. Product involvement has been used as a covariate in endorsement studies (e.g., Lee & Park, 2014). However, both products in the current study are considered low-involvement products. Thus, a non-significant mean difference between them would confirm that product involvement need not be used as a covariate.

**Measures**

All variables and measures used in the main experiment were presented in Appendix C and D. Three types of attachment scales have recently appeared: (a) the emotional feeling scale from Thomson et al. (2005); (b) the emotional behavior scale from Thomson (2006); and (c) the cognitive attachment scale from Park et al. (2010). The first scale was used because this study measured consumers’ emotional feelings (e.g., love) toward a celebrity endorser. Although the
first scale was developed for measuring brand attachment, it can also be used for evaluating celebrity endorser attachment because items to measure brand attachment look like the items to assess human brands (i.e., celebrities). Similarly, Aaker’s (1997) brand personality scale was also used for measuring celebrity endorser personality (Arsena et al., 2014; Dees et al., 2010).

Product involvement was measured using ten 7-point semantic differential items (Zaichkowsky, 1994): unimportant/important, boring/interesting, irrelevant/relevant, uninvolving/involving, unexciting/exciting, mean nothing/mean a lot to me, unappealing/appealing, not needed/needed, worthless/valuable, and mundane/fascinating.

**Independent Variables**

*Endorser attachment* was measured using nine items (Thomson et al., 2005) on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree). The items are “I love Derrick Henry,” “I feel affectionate toward Derrick Henry,” “I feel friendly toward Derrick Henry,” “I feel connected to Derrick Henry,” “I feel bonded to Derrick Henry,” “I feel attached to Derrick Henry,” “I feel delighted by Derrick Henry,” “I feel passionate for Derrick Henry,” and “I feel captivated by Derrick Henry.” *Endorser-product match-up* was measured by three 7-point bipolar items created: not a good fit/a good fit, not a good match/a good match, and does not go together/does go together.

**Dependent Variables**

*Endorser likability* was measured using a single item (Kamins, 1990) on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree). The item is “I think Derrick Henry is very likable.” *Endorser attractiveness* was measured on five 7-point semantic differential items: not sexy/pretty, unattractive/attractive, not class/posh, ugly/handsome, and plain/elegant (Ohanian, 1990).
Both an endorser’s *product expertise* and *professional expertise* were assessed on five 7-point bipolar items: not an expert/expert, unqualified/qualified, unskilled/skilled, unknowledgeable/knowledgeable, and inexperienced/experienced (Ohanian, 1990). *Endorser trustworthiness* was assessed on five 7-point bipolar items: unreliable/reliable, insincere/sincere, undependable/dependable, dishonest/honest, and untrustworthy/trustworthy (Ohanian, 1990). *Endorser attitude* was assessed on three 7-point bipolar items: bad/good, negative/positive, and unfavorable/favorable (Till & Shimp, 1998).

*Attitude toward the advertising* was evaluated on three 7-point bipolar items: bad/good, unfavorable/favorable, and unpleasant/pleasant (MacKenzie & Lutz, 1989). *Brand attitude* was evaluated on three 7-point bipolar items: bad/good, unfavorable/favorable, and negative/positive (Lee & Koo, 2015). *Purchase intent* was evaluated on three 7-point bipolar items: unlikely/likely, impossible/possible, and improbable/probable (Yi, 1990).

**Statistical Analyses**

This study used several statistical techniques, including independent-samples t-tests and multivariate analysis of variance (MANOVA). T-tests were used to check manipulations. T-tests, for instance, were used to examine whether there is a significant mean difference between strong and weak endorser attachment. Two-way MANOVAs were used to examine all hypotheses. For example, two-way MANOVA was employed to test significant mean differences between two grouping independent variables (strong/weak endorser attachment and high/low endorser-product match-up) and multiple continuous dependent variables (e.g., brand attitude and purchase intent).
Results of Main Experiment

212 college students participated in the experiment using a $2 \times 2$ design (two EA levels and two match-up levels). Randomly chosen from them, 53 subjects were equally assigned to each of the four cells (i.e., SH, WH, SL, and WL). For MANOVA, this sample size per group satisfied the minimum cell size of 20 observations, the recommended equal sample size per cell, and the condition that must be greater than the number of dependent variables (Hair et al., 2010).

Participants showed high levels of football fandom ($M = 5.42; SD = 1.72$) and high levels of UA football team fandom ($M = 6.23; SD = 1.31$). As expected, they showed very low levels of familiarity ($M = 1.67; SD = 1.23$) with the fictitious brand name AKEN. Moreover, an independent-samples t-test was conducted to confirm whether there is a significant difference in the level of involvement between the two products. The result (see Table 6) showed a non-significant mean difference between involvement with sports drinks ($M = 4.34$) and iced tea ($M = 4.04$), $t = 1.869$, $p > .05$. This non-significant result indicates that the levels of product involvement were equal across the drink products. Thus, product involvement was not used as a covariate in testing celebrity endorsement effects in the current study.

<table>
<thead>
<tr>
<th>Product involvement</th>
<th>Mean difference</th>
<th>Sports drink</th>
<th>Iced tea</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4.34 (1.38)</td>
<td>4.04 (1.86)</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Notes: Values outside (inside) of parentheses are means (standard deviations)
Reliability Analysis for Independent and Dependent measures

As presented in Table 7, Cronbach’s α test found values higher than .87 for independent and dependent measures. These values exceeded the acceptable level of reliability (.70) recommended by Nunnally (1978). Moreover, as displayed in Table 8, Cronbach’s α test found values higher than .91 for independent measures in each of four cells. These values were much higher than the acceptable reliability level.

Table 7
Reliability Analysis for Independent and Dependent Measures

<table>
<thead>
<tr>
<th>Measures</th>
<th>Number of items</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent measures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endorser attachment</td>
<td>9</td>
<td>0.990</td>
</tr>
<tr>
<td>Endorser-product match-up</td>
<td>3</td>
<td>0.958</td>
</tr>
<tr>
<td><strong>Dependent measures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endorser likability</td>
<td>1</td>
<td>NA</td>
</tr>
<tr>
<td>Endorser attractiveness</td>
<td>5</td>
<td>0.875</td>
</tr>
<tr>
<td>Product expertise of endorser</td>
<td>5</td>
<td>0.940</td>
</tr>
<tr>
<td>Professional expertise of endorser</td>
<td>5</td>
<td>0.973</td>
</tr>
<tr>
<td>Endorser trustworthiness</td>
<td>5</td>
<td>0.982</td>
</tr>
<tr>
<td>Endorser attitude</td>
<td>3</td>
<td>0.980</td>
</tr>
<tr>
<td>Advertising attitude</td>
<td>3</td>
<td>0.986</td>
</tr>
<tr>
<td>Brand attitude</td>
<td>3</td>
<td>0.987</td>
</tr>
<tr>
<td>Purchase intent</td>
<td>3</td>
<td>0.954</td>
</tr>
</tbody>
</table>

Table 8
Reliability Analysis of Independent Measures in Each of Four Cells

<table>
<thead>
<tr>
<th>Cell</th>
<th>n</th>
<th>Endorser attachment</th>
<th>α</th>
<th>Endorser-product match-up</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH</td>
<td>53</td>
<td>Attachment to Derrick Henry</td>
<td>0.980</td>
<td>Henry and Sports Drink</td>
<td>0.974</td>
</tr>
<tr>
<td>WH</td>
<td>53</td>
<td>Attachment to Ray Rice</td>
<td>0.988</td>
<td>Rice and Sports Drink</td>
<td>0.913</td>
</tr>
<tr>
<td>SL</td>
<td>53</td>
<td>Attachment to Derrick Henry</td>
<td>0.983</td>
<td>Henry and Iced Tea</td>
<td>0.953</td>
</tr>
<tr>
<td>WL</td>
<td>53</td>
<td>Attachment to Ray Rice</td>
<td>0.966</td>
<td>Rice and Iced Tea</td>
<td>0.955</td>
</tr>
</tbody>
</table>

*EA = Emotional Attachment; SH = Strong EA and High match-up; WH = Weak EA and High match-up; SL = Strong EA and Low match-up; WL = Weak EA and Low match-up

Manipulation Checks

Independent-samples t-tests were conducted to verify whether two manipulated strengths of endorser attachment differed significantly from each other and whether two manipulated endorser-product match-up levels differed significantly from each other. All manipulation results
were successful (see Table 9 and 10). The mean of strong EA to Derrick Henry was 4.37, whereas the mean of weak EA to Ray Rice was 1.68. This mean difference was statistically significant, $t(1, 210) = 14.186, p < .001$. The mean ($M = 4.85$) of high match-up (i.e., sports drink) was also significantly higher than the mean ($M = 2.72$) of low match-up (i.e., iced tea), $t(1, 210) = 8.419, p < .001$.

### Table 9

<table>
<thead>
<tr>
<th>Strong attachment (Henry)</th>
<th>Weak attachment (Rice)</th>
<th>Mean difference</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.37 (1.62), $n = 106$</td>
<td>1.68 (1.09), $n = 106$</td>
<td>2.68</td>
<td>14.186***</td>
</tr>
</tbody>
</table>

Notes: Values outside (inside) of parentheses are means (standard deviations); ***$p < .001$

### Table 10

<table>
<thead>
<tr>
<th>High match-up (sports drink)</th>
<th>Low match-up (iced tea)</th>
<th>Mean difference</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.85 (1.99), $n = 106$</td>
<td>2.72 (1.66), $n = 106$</td>
<td>2.12</td>
<td>8.419***</td>
</tr>
</tbody>
</table>

Notes: Values outside (inside) of parentheses are means (standard deviations); ***$p < .001$

### Results of Multivariate Analysis

Prior to the analysis, the following things were discussed: relatedness among dependent variables; criteria to check assumptions of MANOVA; and guidelines to minimize and control detrimental effects of assumptions’ violations on the results. These guidelines were discussed because at least one of assumptions was violated.

### Relatedness among Dependent Variables

All hypotheses were tested by conducting two separate MANOVAs that use two same grouping independent variables (i.e., endorser attachment and endorser-product match-up). The first two-way MANOVA was conducted with endorser-related dependent variables (i.e., liking, trust, attraction, attitude, and product/professional expertise). All these endorser-related dependent variables can be types of endorser attitudes (Koernig & Boyd, 2009). Furthermore, studies (Buhr et al., 1987; Ohanian, 1990) have found that perceived likability of a celebrity
endorser has a strong positive correlation to endorser credibility (i.e., attraction, trust and expertise). Correlation analysis of the current study also showed positive correlations among the dependent variables (see Table 11).

**Table 11**
Correlations among Endorser-Related Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Endorser likability</td>
<td>—</td>
<td>0.59**</td>
<td>0.38**</td>
<td>0.43**</td>
<td>0.82**</td>
<td>0.69**</td>
</tr>
<tr>
<td>2. Endorser attractiveness</td>
<td>—</td>
<td>0.38**</td>
<td>0.23**</td>
<td>0.61**</td>
<td>0.51**</td>
<td></td>
</tr>
<tr>
<td>3. Product expertise</td>
<td>—</td>
<td>0.21**</td>
<td>0.39**</td>
<td>0.52**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Professional expertise</td>
<td>—</td>
<td>0.37**</td>
<td>0.31**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Endorser trustworthiness</td>
<td>—</td>
<td></td>
<td>0.69**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Endorser attitude</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Notes: n = 212; **p < .01*

Another two-way MANOVA was conducted with the other three attitudinal dependent variables (i.e., ad attitude, brand attitude, and purchase intent). These three dependent variables can be deemed types of attitudes (Spears & Singh, 2004). Furthermore, these variables are highly correlated to each other (Lee & Koo, 2015). Correlation analysis of the current study also showed positive correlations among the dependent variables (see Table 12).

**Table 12**
Correlations among Attitudinal Dependent Variables

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Advertising attitude</td>
<td>—</td>
<td>0.85**</td>
<td></td>
</tr>
<tr>
<td>2. Brand attitude</td>
<td>—</td>
<td></td>
<td>0.72**</td>
</tr>
<tr>
<td>3. Purchase intent</td>
<td>—</td>
<td></td>
<td>0.73**</td>
</tr>
</tbody>
</table>

*Notes: n = 212; **p < .01*

The commonality between the first and second two-way MANOVAs is that both use two same grouping independent variables (strong/weak endorser attachment and high/low endorser-product match-up). The difference between the two is the first MANOVA was conducted with endorser-related dependent variables (i.e., liking, trust, attraction, product/professional expertise, and attitude), but the second one was performed with three attitudinal dependent variables (i.e., ad attitude, brand attitude, and purchase intent).
The first two-way MANOVA was used to test H1 (i.e., strong rather than weak EA would lead to higher ratings on the endorser-related dependent variables); H2 (a high rather than low endorser-product fit would lead to higher ratings on all endorser-related dependent measures); and H3 (the effects of endorser attachment on all endorser-related dependent variables would be moderated by endorser-product match-up levels). Another two-way MANOVA was used to test H1 (strong rather than weak EA would lead to higher ratings on the three attitudinal dependent variables); H2 (a high rather than low endorser-product fit would lead to higher ratings on the three attitudinal dependent variables); and H3 (the effects of endorser attachment on the attitudinal dependent variables would be moderated by endorser-product fit levels).

Criteria for Assumption Checks

As assumptions of MANOVA, there should be equality of variances (hereafter “the variance assumption”), equality of covariance/variance matrices (hereafter “the covariance assumption”), and univariate normality (Hair et al., 2010). In the current study, univariate normality was checked using critical values based on $z$ distributions (Hair et al., 2010) as well as acceptable skewness and kurtosis values recommended by Kline (2005) and West et al (1995). West et al (1995) proposed that the distribution can be deemed normal if all absolute skewness and kurtosis values, respectively, are less than 2 and 7. The distribution can also be normal if all absolute skewness and kurtosis values, respectively, are less than 3 and 10 (Kline, 2005). The most commonly used critical values are $\pm 2.58$ (.01 significance level) and $\pm 1.96$, which corresponds to a .05 error level (Hair et al., 2010). If either a skewness or kurtosis value’s $z$-score is not within the range of those critical values, the distribution is considered non-normal (Hair et al., 2010). According to Hair et al (2010), a skewness and kurtosis value’s $z$-score, respectively, can be calculated as
\[ z_{\text{skewness}} = \frac{\text{skewness}}{\sqrt{6}/N} \quad \text{and} \quad z_{\text{kurtosis}} = \frac{\text{kurtosis}}{\sqrt{24}/N} \] (\( N \) is the total sample size).

The covariance assumption is met if Box’s M test is not statistically significant (\( p > .05 \)).

This non-significant result indicates equality of covariance/variance matrices of dependent variables across treatment groups. Box’s M test might be statistically significant because it is very sensitive to departures from normality (Hair et al., 2010). The variance assumption is met if Levene’s test is not statistically significant (\( p > .05 \)). This non-significant result indicates equal variances of dependent variables across treatment groups.

Guidelines to Minimize and Control Negative Effects by Violations of Assumptions

To minimize and control detrimental effects of violations on the outcomes, the following guidelines were used in the current study: relatively large sample sizes per cell (i.e., 51 or more), equal cell sizes, Pillai’s Trace as a criterion for multivariate significance tests, and a lower alpha level (i.e., .01) in univariate significance tests. Hair et al (2010) suggested those large cell sizes.

Wilks’ lambda, one of criteria for multivariate significance tests, is used and robust under adequate and equal cell sizes and no violations of assumptions (Hair et al., 2010). Unlike Wilks’ \( \lambda \), Pillai’s Trace is flexible because it is used and robust under the condition of adequate cell sizes, equal cell sizes, and no violations of assumptions as well as the condition of small cell sizes, unequal cell sizes, or violations of assumptions (Hair et al., 2010; Tabachnick & Fidell, 2007). Statisticians (Beasley & Sheehan, 1994; Olson, 1974; Sheehan, 1994) found that the Type I error rate and power of Pillai’s Trace are not only unaffected by the covariance and variance assumptions’ violations but also robust under these two assumptions’ violations.

Although the normality, covariance, and/or variance assumptions are violated, if cell sample sizes are equal and relatively large, detrimental effects of violations on the results can be very minimal (Hair et al., 2010) and negligible (Tabachnick & Fidell, 2007). Under the variance
assumption’s violation, a lower alpha level (e.g., .025 or .01) for variables with unequal variances is also recommended for the univariate significance test (Tabachnick & Fidell, 2007).

**Multivariate Analysis of Variance on Endorser-Related Dependent Variables**

Endorser-related dependent variables were entered into multivariate under General Linear Model (GLM) with endorser attachment and endorser-product match-up as grouping independent variables. Prior to hypothesis tests, assumptions for MANOVA were checked.

**Assumption Checks**

The normality assumption was not met when using critical values based on $z$ distributions but met when using acceptable skewness and kurtosis values proposed by statisticians (Kline, 2005; West et al., 1995). Specifically, the assumption was not met because, as presented in Table 13, $z$-scores of skewness and kurtosis values for one (professional expertise) of endorser-related dependent variables were not within either the range of ±1.96 or ±2.58. However, the assumption was met. All the absolute skewness and kurtosis values, respectively, are less than 2 and 4. These values are within acceptable boundaries suggested by Kline (2005) and West et al (1995).

<table>
<thead>
<tr>
<th>Endorser-related dependent variables</th>
<th>Skewness statistic</th>
<th>Skewness $z$</th>
<th>Kurtosis statistic</th>
<th>Kurtosis $z$</th>
<th>Range of both $z$ values</th>
<th>Normality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likability</td>
<td>0.078</td>
<td>0.464</td>
<td>-0.273</td>
<td>-0.812</td>
<td>Within ±1.96</td>
<td>Normal</td>
</tr>
<tr>
<td>Attractiveness</td>
<td>0.004</td>
<td>0.023</td>
<td>-0.194</td>
<td>0.577</td>
<td>Within ±1.96</td>
<td>Normal</td>
</tr>
<tr>
<td>Product expertise</td>
<td>-0.038</td>
<td>-0.226</td>
<td>-0.521</td>
<td>-1.550</td>
<td>Within ±1.96</td>
<td>Normal</td>
</tr>
<tr>
<td>Professional expertise</td>
<td>-1.813</td>
<td>-10.791</td>
<td>3.821</td>
<td>11.372</td>
<td>No within ±2.58</td>
<td>Non-normal</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>0.180</td>
<td>1.071</td>
<td>-0.492</td>
<td>1.464</td>
<td>Within ±1.96</td>
<td>Normal</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.007</td>
<td>0.041</td>
<td>-0.453</td>
<td>-1.348</td>
<td>Within ±1.96</td>
<td>Normal</td>
</tr>
</tbody>
</table>

The covariance assumption was not met because, as shown in Table 14, Box’s $M$ test was statistically significant ($p < .05$) by including all the endorser-related dependent variables. The assumption, however, was met because another Box’s $M$ test was not significant ($p > .05$) by excluding only one (professional expertise) of all those dependent variables. The former
significant and latter non-significant results, respectively, indicated non-equality and equality of covariance/variance matrices of dependent variables across the treatment groups.

<table>
<thead>
<tr>
<th></th>
<th>Box’s M</th>
<th>F</th>
<th>p</th>
<th>Equality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Including all of endorser-related dependent variables</td>
<td>151.693</td>
<td>2.284</td>
<td>.001</td>
<td>Unequal</td>
</tr>
<tr>
<td>Excluding only one (professional expertise)</td>
<td>55.951</td>
<td>1.190</td>
<td>.179</td>
<td>Equal</td>
</tr>
</tbody>
</table>

The variance assumption (see Table 15) was not met because, although Levene’s test for product expertise was not significant \( (p > .05) \), all other Levene’s tests were significant \( (p < .05) \). The former and latter results, respectively, indicated equality and inequality of variances.

<table>
<thead>
<tr>
<th>Endorser-related dependent variables</th>
<th>F</th>
<th>p</th>
<th>Equality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorser likability</td>
<td>4.149</td>
<td>.007</td>
<td>Unequal</td>
</tr>
<tr>
<td>Endorser attractiveness</td>
<td>3.583</td>
<td>.015</td>
<td>Unequal</td>
</tr>
<tr>
<td>Product expertise</td>
<td>0.172</td>
<td>.915</td>
<td>Equal</td>
</tr>
<tr>
<td>Professional expertise</td>
<td>5.424</td>
<td>.001</td>
<td>Unequal</td>
</tr>
<tr>
<td>Endorser trustworthiness</td>
<td>7.752</td>
<td>.001</td>
<td>Unequal</td>
</tr>
<tr>
<td>Endorser attitude</td>
<td>4.409</td>
<td>.005</td>
<td>Unequal</td>
</tr>
</tbody>
</table>

Taken together, the normality assumption was met, but both the covariance and variance assumptions were violated. To minimize and control the detrimental effects of these violations on the outcomes, the aforesaid guidelines were used: equal and relatively big cell sizes, Pillai’s criterion for multivariate significance tests, and a more strict alpha level (i.e., .01) for variables with unequal variances in univariate significance tests.

**Hypothesis Testing**

All hypotheses on the main effect of endorser attachment were supported, but only one (product expertise) of all hypotheses on the main effect of endorser-product match-up was supported. All hypotheses on the interaction effect were not supported.
Hypothesis Tests: Main Effect of Endorser Attachment on Endorser-Related Variables

As presented in Table 16, the endorser-related dependent variables were significantly affected by the strength of endorser attachment (Pilla’s trace = 0.563, $F = 43.611$, $p < .001$). This significant result allowed separate use of ANOVAs for those dependent variables with the protection of Type I error rates. MANOVA is used to control these error rates increased by the use of multiple ANOVAs while still providing a means of assessing the differences on each dependent variable both collectively and individually (Hair et al., 2010). Type I error (also known as alpha) is the probability of rejecting the null hypothesis when it is actually true.

Table 16
Results of Multivariate Significance Tests

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Pillai’s Trace</th>
<th>$F$</th>
<th>$p$</th>
<th>$R^2$</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorser attachment</td>
<td>0.563</td>
<td>43.611</td>
<td>&lt; .001</td>
<td>.563</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Hypothesis 1 predicted that strong (vs. weak) EA to an endorser would lead to higher ratings on (a) endorser likability, (b) endorser attractiveness, (c) perceived product expertise of the endorser, (d) perceived professional expertise of the endorser, (e) endorser trustworthiness, and (f) attitude toward the endorser. All these six hypotheses were supported by the statistical results presented in Table 17 and 18.

Table 17
Main Effect of Endorser Attachment on Endorser-Related Variables

<table>
<thead>
<tr>
<th>Endorser-related dependent variables</th>
<th>$F$</th>
<th>$R^2$</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorser likability</td>
<td>234.473***</td>
<td>.530</td>
<td>1.000</td>
</tr>
<tr>
<td>Endorser attractiveness</td>
<td>28.241***</td>
<td>.120</td>
<td>1.000</td>
</tr>
<tr>
<td>Product expertise</td>
<td>27.890***</td>
<td>.118</td>
<td>1.000</td>
</tr>
<tr>
<td>Professional expertise</td>
<td>23.313***</td>
<td>.101</td>
<td>0.998</td>
</tr>
<tr>
<td>Endorser trustworthiness</td>
<td>55.327***</td>
<td>.428</td>
<td>1.000</td>
</tr>
<tr>
<td>Endorser attitude</td>
<td>99.627***</td>
<td>.324</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Notes: ***$p < .001$

Table 18
Mean Differences in Endorser-Related Variables for Endorser Attachment

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Strong attachment (Henry)</th>
<th>Weak attachment (Rice)</th>
<th>Mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorser likability</td>
<td>$M = 5.65, n = 106$</td>
<td>$M = 2.69, n = 106$</td>
<td>2.96</td>
</tr>
<tr>
<td>Endorser attraction</td>
<td>$M = 4.44, n = 106$</td>
<td>$M = 3.44, n = 106$</td>
<td>0.99</td>
</tr>
</tbody>
</table>
Product expertise  $M = 4.11, n = 106$  $M = 3.08, n = 106$  1.03  
Professional expertise  $M = 6.48, n = 106$  $M = 5.70, n = 106$  0.78  
Endorser trust  $M = 5.33, n = 106$  $M = 2.90, n = 106$  2.43  
Endorser attitude  $M = 5.14, n = 106$  $M = 2.97, n = 106$  2.17  

For H1a, the mean of endorser likability ($M = 5.65$) for strong EA to Derrick Henry was higher than that of endorser likability ($M = 2.69$) for weak EA to Ray Rice. This mean difference was statistically significant, $F = 234.473, p < .001, R^2 = .530, \text{Power} = 1.000$. For H1b, the mean of endorser attractiveness ($M = 4.44$) for strong EA to Henry was significantly higher than that of endorser attractiveness ($M = 3.44$) for weak EA to Rice, $F = 28.241, p < .001, R^2 = .120, \text{Power} = 1.000$.

For H1c, the mean of product expertise ($M = 4.11$) for strong EA to Henry was significantly higher than that of product expertise ($M = 3.08$) for weak EA to Rice, $F = 27.890, p < .001, R^2 = .118, \text{Power} = 1.000$. For H1d, the mean of professional expertise ($M = 6.48$) for strong EA to Henry was significantly higher than that of professional expertise ($M = 5.70$) for weak EA to Rice, $F = 23.313, p < .001, R^2 = .101, \text{Power} = .998$.

For H1e, the mean of endorser trust ($M = 5.33$) for strong EA to Henry was significantly higher than that of endorser trust ($M = 2.90$) for weak EA to Rice, $F = 55.327, p < .001, R^2 = .428, \text{Power} = 1.000$. For H1f, the mean of endorser attitude ($M = 5.14$) for strong EA to Henry was significantly higher than that of endorser attitude ($M = 2.97$) for weak EA to Rice, $F = 99.627, p < .001, R^2 = .324, \text{Power} = 1.000$.

**Hypothesis Tests: Main Effect of Endorser-Product Fit on Endorser-Related Variables**

As presented in Table 19, the endorser-related dependent variables were significantly affected by the level of endorser-product match-up (Pillai’s Trace = 0.215, $F = 9.290, p < .001$). This significant result allowed separate use of ANOVAs for the dependent variables with the protection of the Type I error rate.
Table 19
Results of Multivariate Significance Tests

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Pillai’s Trace</th>
<th>$F$</th>
<th>$p$</th>
<th>$R^2$</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorser-product match-up</td>
<td>0.215</td>
<td>9.290</td>
<td>&lt; .001</td>
<td>.215</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Only H2b of all the following hypotheses was supported according to the results shown in Table 20 and 21. Hypothesis 2 predicted that high (vs. low) endorser-product match-up would lead to higher ratings on (a) endorser likability, (b) perceived product expertise of the endorser, (c) perceived professional expertise of the endorser, (d) endorser trust, and (e) endorser attitude. Note that we did not predict a larger direct effect of high (vs. low) match-up on endorser attraction but explored these relationships. The mean of endorser attraction ($M = 4.02$) for high fit was not significantly higher than that of endorser attraction ($M = 3.86$) for low fit, $p > .01$.

Table 20
Main Effect of Endorser-Product Fit on Endorser-Related Variables

<table>
<thead>
<tr>
<th>Endorser-related dependent variables</th>
<th>$F$</th>
<th>$p$</th>
<th>$R^2$</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorser likability</td>
<td>0.038</td>
<td>.846</td>
<td>.001</td>
<td>0.054</td>
</tr>
<tr>
<td>Endorser attractiveness</td>
<td>0.764</td>
<td>.383</td>
<td>.004</td>
<td>0.140</td>
</tr>
<tr>
<td>Product expertise</td>
<td>40.974</td>
<td>&lt; .001</td>
<td>.165</td>
<td>1.000</td>
</tr>
<tr>
<td>Professional expertise</td>
<td>0.147</td>
<td>.701</td>
<td>.001</td>
<td>0.067</td>
</tr>
<tr>
<td>Endorser trustworthiness</td>
<td>1.178</td>
<td>.279</td>
<td>.006</td>
<td>0.191</td>
</tr>
<tr>
<td>Endorser attitude</td>
<td>3.385</td>
<td>.067</td>
<td>.016</td>
<td>0.449</td>
</tr>
</tbody>
</table>

Table 21
Mean Differences in Endorser-Related Variables for Endorser-Product Fit

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>High match-up</th>
<th>Low match-up</th>
<th>Mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorser likability</td>
<td>$M = 4.15$, $n = 106$</td>
<td>$M = 4.19$, $n = 106$</td>
<td>-0.38</td>
</tr>
<tr>
<td>Endorser attraction</td>
<td>$M = 4.02$, $n = 106$</td>
<td>$M = 3.86$, $n = 106$</td>
<td>0.16</td>
</tr>
<tr>
<td>Product expertise</td>
<td>$M = 4.22$, $n = 106$</td>
<td>$M = 2.97$, $n = 106$</td>
<td>1.25</td>
</tr>
<tr>
<td>Professional expertise</td>
<td>$M = 6.06$, $n = 106$</td>
<td>$M = 6.12$, $n = 106$</td>
<td>-0.62</td>
</tr>
<tr>
<td>Endorser trust</td>
<td>$M = 4.01$, $n = 106$</td>
<td>$M = 4.22$, $n = 106$</td>
<td>-0.21</td>
</tr>
<tr>
<td>Endorser attitude</td>
<td>$M = 4.25$, $n = 106$</td>
<td>$M = 3.85$, $n = 106$</td>
<td>0.39</td>
</tr>
</tbody>
</table>

For H2a, the mean of endorser likability ($M = 4.15$) for high endorser-product match-up (i.e., sports drink) was not higher than that of endorser likability ($M = 4.19$) for low match-up (iced tea). This mean difference was not statistically significant, $F = 0.038$, $p > .01$. For H2b, the mean of product expertise ($M = 4.22$) for high match-up was significantly higher than that of
product expertise \((M = 2.97)\) for low match-up, \(F = 40.974, p < .001, R^2 = .165,\) Power = 1.000.

For H2e, the mean of professional expertise \((M = 6.06)\) for high match-up was not significantly higher than that of professional expertise \((M = 6.12)\) for low match-up, \(F = 0.147, p > .01.\)

For H2d, the mean of endorser trust \((M = 4.01)\) for high match-up was not significantly higher than that of endorser trust \((M = 4.22)\) for low match-up, \(F = 1.178, p > .01.\) For H2e, the mean of endorser attitude \((M = 4.25)\) for high match-up was not significantly higher than that of endorser attitude \((M = 3.85)\) for low match-up, \(F = 3.385, p > .01.\)

**Hypothesis Tests: Interaction Effect on Endorser-Related Variables**

As presented in Table 22, the endorser-related dependent variables were not significantly affected by the interaction between endorser attachment and endorser-product match-up (Pillai’s Trace = 0.015, \(F = 0.524, p > .05)\).

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Pillai’s Trace</th>
<th>(F)</th>
<th>(p)</th>
<th>(R^2)</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment (\times) Match-up</td>
<td>0.015</td>
<td>0.524</td>
<td>.790</td>
<td>.015</td>
<td>0.209</td>
</tr>
</tbody>
</table>

Hypothesis 3 predicted that EA and match-up would interact such that high EA and high match-up would lead to more positive effects on (a) endorser likability, (b) endorser attractiveness, (c) perceived product expertise of the endorser, (d) perceived professional expertise of the endorser, (e) endorser trustworthiness, and (f) endorser attitude than low EA and low match-up. All these six hypotheses were not supported by the results displayed in Table 23 and 24. The results reported a non-significant degree of endorser attachment by endorser-product fit interaction for endorser liking \((F = 0.086, p > .01)\), endorser attraction \((F = 0.598, p > .01)\), product expertise \((F = 0.642, p > .05)\), professional expertise \((F = 0.030, p > .01)\), endorser trust \((F = 0.830, p > .01)\), and endorser attitude \((F = 0.153, p > .01)\). These non-significant results
indicated that the mean differences between groups of endorser attachment on each of the endorser-related dependent variables were not affected by endorser-product match-up levels.

<table>
<thead>
<tr>
<th>Table 23</th>
<th>Interaction Effect on Endorser-Related Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorser-related dependent variables</td>
<td>$F$</td>
</tr>
<tr>
<td>Endorser likability</td>
<td>0.086</td>
</tr>
<tr>
<td>Endorser attractiveness</td>
<td>0.598</td>
</tr>
<tr>
<td>Product expertise</td>
<td>0.642</td>
</tr>
<tr>
<td>Professional expertise</td>
<td>0.030</td>
</tr>
<tr>
<td>Endorser trustworthiness</td>
<td>0.830</td>
</tr>
<tr>
<td>Endorser attitude</td>
<td>0.153</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 24</th>
<th>Mean Differences in Endorser-Related Variables for Attachment and Match-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likability</td>
<td></td>
</tr>
<tr>
<td>Strong attachment</td>
<td>$M = 5.60, n = 53$</td>
</tr>
<tr>
<td>Weak attachment</td>
<td>$M = 2.69, n = 53$</td>
</tr>
<tr>
<td>Attractiveness</td>
<td></td>
</tr>
<tr>
<td>Strong attachment</td>
<td>$M = 4.45, n = 53$</td>
</tr>
<tr>
<td>Weak attachment</td>
<td>$M = 3.59, n = 53$</td>
</tr>
<tr>
<td>Prod. expertise</td>
<td></td>
</tr>
<tr>
<td>Strong attachment</td>
<td>$M = 4.66, n = 53$</td>
</tr>
<tr>
<td>Weak attachment</td>
<td>$M = 3.79, n = 53$</td>
</tr>
<tr>
<td>Prof. expertise</td>
<td></td>
</tr>
<tr>
<td>Strong attachment</td>
<td>$M = 6.44, n = 53$</td>
</tr>
<tr>
<td>Weak attachment</td>
<td>$M = 5.68, n = 53$</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td></td>
</tr>
<tr>
<td>Strong attachment</td>
<td>$M = 5.13, n = 53$</td>
</tr>
<tr>
<td>Weak attachment</td>
<td>$M = 2.88, n = 53$</td>
</tr>
<tr>
<td>Attitude</td>
<td></td>
</tr>
<tr>
<td>Strong attachment</td>
<td>$M = 5.38, n = 53$</td>
</tr>
<tr>
<td>Weak attachment</td>
<td>$M = 3.13, n = 53$</td>
</tr>
</tbody>
</table>

Notes: Prod. = Product; Prof. = Professional

Multivariate Analysis of Variance on Attitudinal Dependent Variables

Attitudinal dependent variables (i.e., ad attitude, brand attitude, and purchase intent) were entered into multivariate under GLM with endorser attachment and endorser-product match-up as independent variables. Prior to hypothesis tests, assumptions for MANOVA were checked.

Assumption Checks

As shown in Table 25, the normality assumption was satisfied not only because $z$-values of all skewness and kurtosis values were within either the range of ±1.96 or ±2.58 but also
because all skewness and kurtosis values were within the range of ±1.0 that is within acceptable boundaries proposed by statisticians (Kline, 2005; West et al., 1995).

<table>
<thead>
<tr>
<th>Attitudinal dependent variables</th>
<th>Skewness Statistic</th>
<th>Skewness z</th>
<th>Kurtosis Statistic</th>
<th>Kurtosis z</th>
<th>Range of both z values</th>
<th>Normality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising attitude</td>
<td>0.126</td>
<td>-0.828</td>
<td>-2.464</td>
<td>Within ±2.58</td>
<td>Normal</td>
<td></td>
</tr>
<tr>
<td>Brand attitude</td>
<td>0.044</td>
<td>-0.331</td>
<td>-0.985</td>
<td>Within ±1.96</td>
<td>Normal</td>
<td></td>
</tr>
<tr>
<td>Product intent</td>
<td>0.100</td>
<td>-0.292</td>
<td>-0.869</td>
<td>Within ±1.96</td>
<td>Normal</td>
<td></td>
</tr>
</tbody>
</table>

The covariance assumption was satisfied because Box’s M test (see Table 26) was not statistically significant (p > .05), indicating no presence of heteroscedasticity. However, the variance assumption was not met. In the Levene’s tests for equality of error variances (see Table 27), two attitudinal outcomes (i.e., ad attitude and purchase intent) showed non-significant results and confirmed homoscedasticity. In the case of brand attitude, the significance level was .003, indicating the possible existence of heteroscedasticity for this variable.

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>F</th>
<th>p</th>
<th>Equality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising attitude</td>
<td>1.715</td>
<td>.165</td>
<td>Equal</td>
</tr>
<tr>
<td>Brand attitude</td>
<td>4.746</td>
<td>.003</td>
<td>Unequal</td>
</tr>
<tr>
<td>Purchase intent</td>
<td>0.866</td>
<td>.459</td>
<td>Equal</td>
</tr>
</tbody>
</table>

Taken together, the normality and covariance assumptions were met, but the variance assumption was violated. To overcome this violation, the aforesaid guidelines were used: equal and relatively big cell sizes, Pillai’s criterion for multivariate significance tests, and a more strict alpha level (i.e., .01) for brand attitude with unequal variances in the univariate significance test.
Hypothesis Tests: Main Effect of Endorser Attachment on Attitudinal Variables

As displayed in Table 28, the attitudinal dependent variables were significantly affected by the strength of endorser attachment (Pillai’s trace = 0.321, $F = 32.507, p < .001$). This significant result allowed separate use of ANOVAs for the dependent variables with the protection of Type I error rates.

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Pillai’s Trace</th>
<th>$F$</th>
<th>$p$</th>
<th>$R^2$</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorser attachment</td>
<td>0.321</td>
<td>32.507</td>
<td>$&lt; .001$</td>
<td>0.321</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Hypothesis 1 predicted that strong (vs. weak) EA to an endorser would lead to higher ratings on (g) ad attitude, (h) brand attitude, and (i) purchase intent. All these three hypotheses were supported by the statistical results presented in Table 29 and 30.

<table>
<thead>
<tr>
<th>Attitudinal dependent variables</th>
<th>$F$</th>
<th>$R^2$</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising attitude</td>
<td>86.018***</td>
<td>.293</td>
<td>1.000</td>
</tr>
<tr>
<td>Brand attitude</td>
<td>78.831***</td>
<td>.275</td>
<td>1.000</td>
</tr>
<tr>
<td>Purchase intent</td>
<td>67.855***</td>
<td>.246</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Notes: ***$p < .001$

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Strong attachment (Henry)</th>
<th>Weak attachment (Rice)</th>
<th>Mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising attitude</td>
<td>$M = 5.02, n = 106$</td>
<td>$M = 3.04, n = 106$</td>
<td>1.98</td>
</tr>
<tr>
<td>Brand attitude</td>
<td>$M = 4.83, n = 106$</td>
<td>$M = 2.98, n = 106$</td>
<td>1.85</td>
</tr>
<tr>
<td>Purchase intent</td>
<td>$M = 4.59, n = 106$</td>
<td>$M = 2.71, n = 106$</td>
<td>1.87</td>
</tr>
</tbody>
</table>

For H1g, the mean of ad attitude ($M = 5.02$) for strong EA to Derrick Henry was higher than that of ad attitude ($M = 3.04$) for weak EA to Ray Rice. This mean difference was statistically significant, $F = 86.018, p < .001, R^2 = .293, Power = 1.000$. For H1h, the mean of brand attitude ($M = 4.83$) for strong EA to Henry was significantly higher than that of brand attitude ($M = 2.98$) for weak EA to Rice, $F = 78.831, p < .001, R^2 = .275, Power = 1.000$. For H1i, the mean of purchase intent ($M = 4.59$) for strong EA to Henry was significantly higher than
that of purchase intent \((M = 2.71)\) for weak EA to Rice, \(F = 67.855, p < .001, R^2 = .246,\) Power = 1.000.

**Hypothesis Tests: Main Effect of Endorser-Product Fit on Attitudinal Variables**

As shown in Table 31, the multivariate significance test was not statistically significant (Pillai’s trace = 0.026, \(F = 1.851, p > .05\)).

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Pillai’s Trace</th>
<th>(F)</th>
<th>(p)</th>
<th>(R^2)</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorser-product fit</td>
<td>0.026</td>
<td>1.851</td>
<td>.139</td>
<td>.026</td>
<td>.476</td>
</tr>
</tbody>
</table>

Hypothesis 2 predicted that high (vs. low) endorser-product match-up would lead to higher ratings on (g) ad attitude, (h) brand attitude, and (i) purchase intent. All these three hypotheses were not supported by the statistical results presented in Table 32 and 33.

<table>
<thead>
<tr>
<th>Attitudinal dependent variables</th>
<th>(F)</th>
<th>(p)</th>
<th>(R^2)</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising attitude</td>
<td>1.962</td>
<td>.163</td>
<td>.009</td>
<td>.286</td>
</tr>
<tr>
<td>Brand attitude</td>
<td>0.001</td>
<td>.988</td>
<td>.001</td>
<td>.050</td>
</tr>
<tr>
<td>Purchase intent</td>
<td>0.034</td>
<td>.912</td>
<td>.001</td>
<td>.051</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean Differences in Attitudinal Variables for Endorser-Product Fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudinal variables</td>
</tr>
<tr>
<td>High match-up</td>
</tr>
<tr>
<td>Advertising attitude</td>
</tr>
<tr>
<td>Brand attitude</td>
</tr>
<tr>
<td>Purchase intent</td>
</tr>
</tbody>
</table>

For H2g, the mean of ad attitude \((M = 4.18)\) for high match-up (i.e., sports drink) was higher than that of ad attitude \((M = 3.88)\) for low match-up (i.e., iced tea). However, this mean difference was not statistically significant, \(F = 1.962, p > .05\). For H2h, the mean of brand attitude \((M = 3.92)\) for high match-up was not significantly higher than that of brand attitude \((M = 3.91)\) for low match-up, \(F = 0.001, p > .01\). For H2i, the mean of purchase intent \((M = 3.64)\) for
high match-up was not significantly higher than that of purchase intent \((M = 3.66)\) for low match-up, \(F = 0.034, p > .05\).

**Hypothesis Tests: Interaction Effect on Attitudinal Variables**

As presented in Table 34, the attitudinal dependent variables were significantly affected by the interaction between endorser attachment and endorser-product match-up (Pilla’s trace = 0.042, \(F = 3.025, p < .05\)). This significant result allowed separate use of ANOVAs for the dependent variables with the protection of Type I error rates.

<table>
<thead>
<tr>
<th>Table 34 Results of Multivariate Significance Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent variable</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td>Attachment (\times) Match-up</td>
</tr>
</tbody>
</table>

Hypothesis 3 predicted that EA and match-up would interact such that high EA and high match-up would lead to more positive (g) ad attitude, (h) brand attitude, and (i) purchase intent than low EA and low match-up. All these three hypotheses were not supported by the results presented in Table 35 and 36. The results showed a non-significant level of endorser attachment by endorser-product match-up interaction for ad attitude \((F = 0.063, p > .05)\), brand attitude \((F = 0.423, p > .01)\), and purchase intent \((F = 3.130, p > .05)\). These non-significant results indicated that the mean differences between groups of endorser attachment on each of the attitudinal dependent variables were not affected by endorser-product match-up levels. In brief, there were no interaction effects between the two independent variables on the dependent variables.

<table>
<thead>
<tr>
<th>Table 35 Interaction Effect on Attitudinal Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudinal dependent variables</td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td>Advertising attitude</td>
</tr>
<tr>
<td>Brand attitude</td>
</tr>
<tr>
<td>Purchase intent</td>
</tr>
</tbody>
</table>
Table 36
Mean Differences in Attitudinal Variables for Attachment and Match-up

<table>
<thead>
<tr>
<th>Variable</th>
<th>Strong attachment</th>
<th>Weak attachment</th>
<th>Low match-up</th>
<th>Mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ad attitude</td>
<td>High match-up</td>
<td>M = 5.15, n = 53</td>
<td>M = 4.89, n = 53</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>Low match-up</td>
<td>M = 3.22, n = 53</td>
<td>M = 2.87, n = 53</td>
<td>0.35</td>
</tr>
<tr>
<td>Brand attitude</td>
<td>Strong attachment</td>
<td>M = 4.89, n = 53</td>
<td>M = 4.76, n = 53</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>Weak attachment</td>
<td>M = 2.92, n = 53</td>
<td>M = 3.05, n = 53</td>
<td>-0.13</td>
</tr>
<tr>
<td>Purchase intent</td>
<td>Strong attachment</td>
<td>M = 4.37, n = 53</td>
<td>M = 4.79, n = 53</td>
<td>-0.43</td>
</tr>
<tr>
<td></td>
<td>Weak attachment</td>
<td>M = 2.89, n = 53</td>
<td>M = 2.52, n = 53</td>
<td>0.38</td>
</tr>
</tbody>
</table>

Further Analysis: Mediation Effect of Brand Attitude

As an additional analysis, we examined whether brand attitude can mediate the relationship between ad attitude and purchase intent. To test the mediation effect of brand attitude between ad attitude and purchase intent, we went through three steps based on Baron and Kenny’s (1986) guideline. The first simple regression tested the significance of the relationship between the independent variable (i.e., ad attitude) and the dependent variable (i.e., purchase intent). This regression result was statistically significant, \( R^2 = .512, \beta = .716, p < .001 \). Thus, the first step of mediation was supported. The second simple regression tested the significance of the relationship between the independent variable (i.e., ad attitude) and the mediator (i.e., brand attitude). This regression result was significant, \( R^2 = .715, \beta = .845, p < .001 \). Therefore, the second step of mediation was supported. Lastly, the stepwise multiple regression analysis tested the significance of the relationship between the mediator (i.e., brand attitude) and the dependent variable (i.e., purchase intent) after controlling for the independent variable (i.e., ad attitude). This regression result was significant, \( R^2 = .538, \beta = .733, p < .001 \). Therefore, the third step of mediation was supported.

Moreover, we explored whether brand attitude can mediate the relationship between athlete attitude and purchase intent by going through Baron and Kenny’s (1986) guideline. The first simple regression tested the significance of the relationship between the independent
variable (i.e., endorser attitude) and the dependent variable (i.e., purchase intent). This regression result was statistically significant, $R^2 = .431, \beta = .656, p < .001$. Therefore, the first step of mediation was supported. The second simple regression tested the significance of the relationship between the independent variable (i.e., endorser attitude) and the mediator (i.e., brand attitude). This regression result was significant, $R^2 = .629, \beta = .793, p < .001$. Thus, the second step of mediation was supported. Lastly, the stepwise multiple regression analysis tested the significance of the relationship between the mediator (i.e., brand attitude) and the dependent variable (i.e., purchase intent) after controlling for the independent variable (i.e., endorser attitude). This regression result was significant, $R^2 = .538, \beta = .733, p < .001$. Therefore, the third step of mediation was supported.

Taken together, we identified two findings on the mediating effects of brand attitude. One was that brand attitude significantly mediated the relationship between ad attitude and purchase intent. Such a relationship was also significant between endorser attitude and purchase intent. The combination of these two findings was expressed in Figure 2.

**Figure 2**
**Relationships among Constructs**

![Diagram showing relationships among constructs](image-url)
CHAPTER 5
DISCUSSION

This study explored (a) the main effect of EA, (b) the main effect of endorser-product match-up, and (c) the interaction effect between EA and endorser-product match-up on several advertising outcomes: (a) endorser credibility (i.e., likability, attractiveness, product and professional expertise, and trustworthiness), (b) attitude toward the endorser, ad, and brand, and (c) purchase intent. Finally, additional analyses examined the mediation effect of brand attitude on the relationship between ad attitude and purchase intent and between endorser attitude and purchase intent.

General Discussion

The fact that advertisers have hired (i.e., Derrick Henry) or made an attempt to hire (i.e., Ray Rice) the celebrity endorsers tested in the present study sheds light on the current endorsement strategies that firms use. Advertisers have hired Derrick Henry as an endorser. For example, both Nissan (Automotive News, 2016; Autoweek, 2016) and Nike (Bloomberg News, 2016; CBS Sports, 2017) have made endorsement deals with Henry. Although Henry was an NFL rookie at the time of this study, he was hired as an endorser because his potential to succeed in the NFL was high and his career achievements, such as winning the Heisman Trophy, had generated a positive public image. To be sure, Nike has made endorsement deals with many NFL rookies who had big potential to succeed in the NFL due to their achievements as a college player (Bloomberg News, 2016; CBS Sports, 2017). Studies have also found that sports celebrities (e.g., LeBron James) who have positive public images due to excellent athletic
performance can enhance attitude toward the endorsed brand and purchase intent (Koo et al., 2012; Lee & Koo, 2015; Lee & Thorson, 2008). Moreover, many marketers have made endorsement deals with celebrity athletes who have positive public images. For example, positive image transfer from Michael Jordan to Nike sneakers has enhanced brand attitude and product sales (Fortune, 1998). Yao Ming has also helped increase product sales by endorsing Reebok sneakers and McDonald’s in China (Bloomberg Businessweek, 2004).

Despite his negative public image, advertisers might hire Ray Rice as an endorser. Interestingly, he received a $1 million endorsement offer from an online fantasy sports gaming company (IBTimes, 2015; The Baltimore Sun, 2017) after losing his endorsement contracts with Nike due to his scandal (Fortune, 2014b). One reason that infamous athletes (e.g., Michael Vick and Ray Rice) might be used as endorsers is the humility and regret they show by admitting their mistakes. For example, the chief executive officer of the fantasy sports firm that offered Rice a deal said that Rice had shown deep remorse for his scandal (i.e., domestic abuse) and deserved a second chance to clean up his image (IBTimes, 2015; TMZ, 2015). Nike, which made an endorsement deal with Michael Vick, said that Vick had admitted his past mistakes (Fortune, 2014b). Moreover, Carrillat et al. (2013) found that the use of a male sports celebrity who had admitted rather than denied his misdeeds (i.e., doping) was more effective in enhancing perceived trustworthiness of the endorser, attitude toward the endorsed brand, and purchase intent.

Another reason that sports advertisers might maintain endorsement deals with infamous athletes is the value of athlete-product congruence, which might be irrelevant to a non-sport advertiser (Carrillat et al., 2013; Miller & Laczinak, 2011; Fortune, 2014b). For example, Kellogg, a low-congruence partner, cancelled an endorsement deal with Michael Phelps due to
his scandal (i.e., smoking marijuana), whereas Speedo, a high-congruence partner, maintained its endorsement contracts with Phelps. Likewise, Gillette, a low-congruence partner, cancelled its endorsement deals with Tiger Woods due to his sex scandal, but Nike, a high-congruence partner, has maintained endorsement contracts with him.

When a big brand cancels an endorsement deal with a sports celebrity due to a scandal, a start-up, local, or competitive brand could obtain a bigger portion of the market and increase brand awareness by making a relatively less expensive endorsement deal with that celebrity (Carrillat et al., 2013; IBTimes, 2015). Moreover, several firms have used celebrity athletes with negative reputations as endorsers to enhance brand awareness and appeal to a particular target demographic (Burton et al., 2001; IBTimes, 2015; Miller & Laczinak, 2011; NBC News, 2009).

**Main effects of endorser attachment.** The findings of the current study show that strong (vs. weak) EA led to significantly higher ratings for each of the advertising outcomes: credibility, attitude, and purchase intent. Compared to other EA studies (Illicic & Webster, 2011), the most unique findings of the current study are that strong (vs. weak) EA led to more favorable attitude toward the endorser and higher perceived credibility. Findings that strong (vs. weak) EA led to more favorable attitude toward the ad and brand and higher purchase intent are consistent with Illicic and Webster (2011). However, these findings are also unique given the context of the current study: sport celebrity endorsers using the emotional feeling scale (e.g., feeling love toward a celebrity) from Thomson et al. (2005). Illicic and Webster (2011) examined EA in the context of non-sport celebrity endorsers using the emotional behavior scale (e.g., experiencing celebrity separation distress) from Thomson (2006). In addition, Illicic and Webster (2011) did not clearly explain how and why strong (vs. weak) EA led to more favorable attitude and higher purchase intent. However, the current study suggested an explanation based on affect transfer
theory. That is, the transfer of favorable affect (i.e., strong EA) from a celebrity endorser to the endorsed brand led to more favorable attitude and purchase intent than the transfer of unfavorable affect (i.e., weak EA). This phenomenon can be attributed to the idea that consumers have preconceived positive or negative images of the celebrity endorser when they are exposed to the ad.

**Main effects of endorser-product match-up.** The current study found that high (vs. low) endorser-product match-up led to higher perceived product expertise of the endorser. However, no other ad outcomes were significant. The findings for product expertise are consistent with previous expertise match-up effect studies (Boyd & Shank, 2004; Siemens et al., 2008; Till & Busler, 2000). The findings of the current study indicate that when sport celebrities endorsed a sport-related product (i.e., sports drink) rather than a non-sport-related product (i.e., iced tea), they were perceived as having higher product expertise. Product expertise in the present study was measured on items such as “I think Derrick Henry is experienced with or knowledgeable about the sports drink product, supporting the arguments he made in the ad in favor of this product.” Athletes are perceived as having more expertise in an endorsed sport-related (vs. non-sport-related) product because they appear to have more experience with and knowledge about sport-related products.

The current study also found that high (vs. low) endorser-product match-up did not impact perceived attractiveness of the endorser. The findings of this study are consistent with other expertise match-up effect studies (Siemens et al., 2008; Till & Busler, 2000). Athlete-product congruence might not affect perceived attractiveness of the endorser because endorser attractiveness might be preconceived (Siemens et al., 2008).
In addition, the findings indicate that high (vs. low) endorser-product match-up did not positively impact perceived credibility (i.e., likability, product/professional expertise, and trustworthiness of the endorser), attitude (toward the endorser, ad, and brand), and purchase intent. These findings are not consistent with previous expertise match-up effect studies (Boyd & Shank, 2004; Koernig & Boyd, 2009; Siemens et al., 2008; Till & Busler, 1998) and contradict predictions based on schema congruity theory. Congruent ads were expected to lead to higher ratings than incongruent ads on all ad outcomes because affect based on existing celebrity schemas was expected to transfer to the endorsed product.

Despite the non-significant findings for match-up effects, dismissing the role that expertise plays in the match-up hypothesis would be premature. Difficulties in finding significant match-up effects based on expertise might derive from insufficient review of schema congruity theory and methodologies used in match-up effect studies. In this way, the current study might not have been adequately designed to substantiate the premise that expertise is a crucial match-up factor.

Lynch and Schuler (1994) might provide an explanation for why this study detected no significant match-up effect in the ad outcomes. They claimed that match-up effects might not work for ad outcome measures when endorsers offer information that is otherwise already presented in the ad or known to participants. Kamins (1990), for example, reported non-significant match-up effects for endorser believability, advertiser believability, brand attitude, and purchase intent. Lynch and Schuler claimed that these match-up effects were non-significant because the endorsers used in Kamins (1990) (i.e., Tom Selleck and Telly Savalas) shared many features. Both were celebrity actors, both played TV detectives, both portrayed rough but sensitive characters, and both are very masculine. In the current study, the two athlete endorsers
(i.e., Derrick Henry and Ray Rice) also share many features. Both were NFL players, both were running backs, and both were very masculine. In addition, both endorsers were used in both a high match-up condition and a low match-up condition. That is, the features of each endorser were identical in both conditions. If two very different endorser types (e.g., athlete vs. comedian) had been used in this study, significant match-up effects might have been found.

At the same time, this explanation is problematic because it disregards product feature differences. Lynch and Schuler (1994) primarily suggest that the more the celebrity endorsers have in common, the smaller the match-up effect on the ad outcomes will be. However, this relationship seems unclear because it does not account for different product attributes, only similar endorser attributes. Even when celebrity endorsers do share features, match-up effect might be bigger for some products than for others.

Schema congruity theory claims that similarities (i.e., high match-up) between endorser and product schemas produce more positive ad responses than dissimilarities (i.e., low match-up). This pattern implies that match-up effects might not work when the attributes of an endorser and product used for the low match-up condition are similar to the attributes of an endorser and product used for the high match-up condition, for the differences between the attributes in each condition would be small. In the current study, Derrick Henry and Ray Rice were both used in both conditions. Thus, the endorser schemas for both conditions were the same. Furthermore, despite a significant difference between the high and low match-up conditions, iced tea actually has many of the attributes that sports drinks have (e.g., water, vitamins, and energy). In this way, both products might seem helpful for sport activities. If two very different endorser types (e.g., athlete vs. comedian) and two very different product categories (e.g., sports drink vs. vacuum) had been used for the experiment, significant match-up effects might have emerged.
The non-significant match-up effects found in the current study might also be attributable to less accurate manipulation measures. Previous match-up effect studies have done manipulation checks by measuring endorser-product congruence and appropriateness (Lee & Thorson, 2008; Misra & Beatty, 1990; Till & Busler, 2000). For example, Till and Busler (2000) checked levels of endorser-product congruence on a multi-item scale and levels of endorser-product appropriateness on a two-item scale (inappropriate/appropriate; ineffective/effective) separately. The current study did not check for appropriateness, only congruence. If the current study had checked for both during the pretest and/or main study, significant match-up effects might have been detected.

Lastly, the ad outcomes might not have been significantly different because the distance between the high match-up condition (i.e., athlete and sports drink) and the low match-up condition (i.e., athlete and iced tea) might not have been great enough. The athletes and non-sport-related drink (i.e., iced tea) used in this study might have formed only a moderately low match-up condition. Using a nine-point scale (e.g., 1 = very low match-up; 9 = very high match-up), Lee and Thorson (2008) found that athletes were extremely congruent with sports drinks ($M = 7.5$), moderately incongruent with soft drinks and cell phones ($M = 3.8$ and $M = 3.1$, respectively), and extremely incongruent with vacuums ($M = 1.8$). Despite a significant difference between the extremely congruent condition (i.e., athletes and sports drinks) and the moderately incongruent condition (i.e., athletes and cell phones), Lee and Thorson (2008) found non-significant differences between attitude toward the ad, brand attitude, and purchase intent across those two conditions.

**Interaction effects between EA and endorser-product match-up.** The current study found that endorser-product match-up (high vs. low) did not moderate the effects of EA on the
ad outcomes, indicating no interaction effect between EA and match-up. That is, strong EA and high match-up did not have a more positive impact than weak EA and low match-up, contrary to predictions based on the integration of affect transfer theory and schema congruity theory.

Despite these findings, dismissing the moderating role of endorser-product match-up in the effects of EA on the ad outcomes might be premature. Most of difficulties in finding significant interaction effects seem attributable to the same theoretical, methodological, and empirical explanations for the non-significant match-up effects. Again, the current study might not have been adequately designed to substantiate the premise that the effects of EA on the ad outcomes would be moderated by level of endorser-product match-up.

**Mediation effects of brand attitude.** Further analyses of the study results show that brand attitude mediated the relationship between ad attitude and purchase intent and between endorser attitude and purchase intent. These findings indicate that willingness to buy a product is significantly affected by either ad or endorser attitude via brand attitude.

Findings for the mediation effect of brand attitude between ad attitude and purchase intent are consistent with previous celebrity endorsement studies (Goldsmith et al., 2000; Lee & Koo; 2015). However, the findings are unique because previous studies did not consider the role of EA. Moreover, although these studies examined the mediation effects of brand attitude, neither investigated the mediation effect of brand attitude between endorser attitude and purchase intent.

**Theoretical and Practical Implications**

Despite the importance of EA, few studies have examined expertise match-up effects, EA effects on endorser-related dependent variables, or mediation effects of brand attitude. Moreover, few studies have tested the effects of EA on attitude toward the ad and brand and on purchase
intent using the emotional feeling scale from Thomson et al. (2005). Using a 2 (EA strength: strong vs. weak) × 2 (Endorser-product match-up: high vs. low) between-subjects design, the current study examined the main effects of EA, the main effects of endorser-product match-up, and the interaction effects of the two independent variables. Dependent measures included (a) endorser credibility (i.e., likability, attractiveness, product/professional expertise, and trustworthiness), (b) attitude toward the endorser, ad, and brand, and (c) purchase intent. The findings have theoretical and managerial implications for celebrity endorsement scholars and practitioners.

**Implications for attachment theory.** The current study contributes to attachment theory by exploring new applications and by supporting its theoretical claims in the context of celebrity endorsement. That is, the more strongly consumers are emotionally attached to a celebrity endorser, the more likely they are (a) to perceive endorser credibility, (b) to have favorable attitude toward the endorser, ad, and brand, and (c) to have higher purchase intent. Theoretical claims supported by this study include (a) that strong EA implied attitudinal attributes such as love and affection and (b) that these attributes reflect and form attitude toward the endorser (Bowlby, 1979). The first theoretical claim regards the relationship between EA and likability. The second argument regards the relationship between EA and attitude.

A crucial theoretical implication emerges from the use of the emotional feeling scale from Thomson et al. (2005). Findings that strong EA led to higher purchase intent suggest that strong EA might increase brand loyalty. Thomson et al. (2005) found that strong EA to a brand positively impacted brand loyalty. In addition, according to attachment theory (Bowlby, 1979), strong EA is more likely to maintain consumer loyalty, leading to further invest in the attachment object. Another important theoretical implication is the possible interaction effects of celebrity
and brand attachment on ad outcomes (e.g., brand attitude and purchase intent). Fans who are strongly attached to a celebrity are more likely to enjoy an ad featuring that celebrity and are more likely, in turn, to purchase the endorsed brand (Hung et al., 2011). Furthermore, attachment theory (Bowlby, 1979) argues that perceptions of a strong relationship with an object (e.g., celebrity or brand) encourage interaction with the attachment object.

**Implications for affect transfer theory.** The current study contributes to affect transfer theory by examining new applications and by supporting its theoretical claims in the context of EA. Namely, strong (vs. weak) EA leads to more favorable endorser perception (i.e., perceived credibility), more favorable attitude toward the endorser, ad and brand, and higher purchase intent than weak EA because affect (positive or negative) is transferred to the endorsed brand.

One crucial theoretical implication of the current study’s findings is that feelings toward a celebrity endorser might be transferred to other ad measures related to the endorser. These untested measures include advertiser credibility and perceived trustworthiness of the arguments an endorser makes in support of a product.

**Implications for schema congruity theory.** Although the current study found non-significant match-up effects for the ad outcomes (e.g., purchase intent) due to methodological issues, the findings offer falsifiable evidence of schema congruity theory. This theory argues that schema congruity (vs. incongruity) between the attributes of an endorser and the attributes of a product is more favorably evaluated (Fiske, 1982). However, this theory is falsifiable because, as found by the current study, schema congruity is not always more favorably evaluated. The current study found a significant difference between the high and low match-up conditions but no significant differences in the ad measures (i.e., attitude toward the ad, brand attitude, and purchase intent) between those conditions, as did Lee and Thorson (2008).
**Practical implications.** A significant implication of the findings for marketers and ad practitioners is the importance of EA. The current study found direct significant effects of EA on each of the ad measures. That is, strong EA increased perceived credibility of the endorser, made attitude toward the endorser, ad, and brand more favorable, and increased purchase intent. These findings suggest that marketers need not worry about individual ad outcomes as long as the target market has strong EA. As claimed by ad agencies and scholars, crucial factors in celebrity endorsement include celebrities’ image (i.e., attitude toward the endorser), credibility, likability, attractiveness, expertise, and trustworthiness (Amos et al., 2008; Erdogan et al., 2001). A company that uses a celebrity endorser to whom consumers are strongly attached can expect greater returns than a company that uses a celebrity endorser to whom consumers are weakly attached.

Moreover, the current study suggests that the success of celebrity endorsement rests on choosing a celebrity who can lend positive affect or image to consumers and brands. When consumers had strong EA, this preconceived, positive affect was transferred to the endorsed brand, thereby producing positive ad effects. Other findings showed that when consumers had weak EA, this preconceived, negative affect was transferred to the endorsed brand, thereby producing negative ad effects.

Lastly, the current study showed how crucial positive consumer-celebrity relationships are. The current study found that consumers positively evaluated the ad outcomes when they had formed strong emotional bonds with a celebrity, whereas consumers negatively evaluated those ad outcomes when they had formed weak emotional bonds with a celebrity. Therefore, brand managers must develop and monitor consumer-celebrity relationships. Advertisers have also experienced the positive ad effects of favorable consumer-celebrity relationships. Fans who had
formed strong emotional bonds with Yao Ming, for example, purchased the products he endorsed: Apple computers, Reebok sneakers, Gatorade sports drinks, Pepsi-cola, Visa cards, and McDonald’s fast food (Ad Age, 2004; Bloomberg Businessweek, 2004; Hung et al., 2011). This example suggests that when consumers have a strong positive relationship with a celebrity endorser, they are more likely to purchase the brands and products endorsed.

In addition, the mediating roles of brand attitude found by the current study can be used by marketers to develop strategies that maximize purchasing behavior. Eliciting a positive attitude toward the ad and/or endorser can increase attitude toward the brand, thus enhancing consumer willingness to buy the endorsed product.

Limitations and Future Research

Although this study makes a strong contribution to the field, there are many limitations. First, the college student samples used in the study might limit the generalizability of the findings. Thus, future research might consider using a more inclusive population to enhance external validity. Second, the findings can be confined to the specific celebrities and products tested. Future research should use different types of celebrities and products to enhance external validity and permit comparison of present and future findings. Third, this study found non-significant match-up and interaction effects. Future studies should use distinct types of celebrities (e.g., athlete or comedian) and products (e.g., sports drink or perfume) and do manipulation checks for endorser-product congruence and appropriateness. Fourth, although a fictitious brand was used to minimize the possible confounding effect of prior brand experience (e.g., likability and familiarity), this choice might have limited ecological validity. Therefore, future studies might consider using actual brands. Fifth, some variables, such as brand loyalty, were not measured. The current study found that EA affected purchase intent, implying that the
former might also influence brand loyalty. Thus, future studies might include such variables. Lastly, readers should cautiously interpret the findings of this study because at least one of assumptions for MANOVA was violated.
REFERENCES


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APPENDIX A

Questionnaire for the Pretest

1. I consider myself a fan of football.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree

2. How familiar are you with Derrick Henry?
   Extremely unfamiliar 1 2 3 4 5 6 7  Extremely familiar

3. I consider myself a fan of Derrick Henry.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree

Please answer questions about how strongly you feel attached to Derrick Henry.

1. I love Derrick Henry.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree

2. I feel affectionate toward Derrick Henry.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree

3. I feel friendly toward Derrick Henry.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree

4. I feel connected to Derrick Henry.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree

5. I feel bonded to Derrick Henry.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree

6. I feel attached to Derrick Henry.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree

7. I feel delighted by Derrick Henry.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree

8. I feel passionate for Derrick Henry.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree

9. I feel captivated by Derrick Henry.
   Strongly disagree 1 2 3 4 5 6 7  Strongly agree
APPENDIX B

Examples of Four Product Advertisements

**Henry’s new preferred sports drink: AKEN.**

*AKEN, A New Type of Sports Drink*

The new AKEN sports drink is rich in vitamins and taste, and it gives you plenty of energy!

Derrick Henry:
Football player and Spokesperson for AKEN

**Rice’s new preferred sports drink: AKEN.**

*AKEN, A New Type of Sports Drink*

The new AKEN sports drink is rich in vitamins and taste, and it gives you plenty of energy!

Ray Rice:
Football player and Spokesperson for AKEN

**Henry’s new preferred iced tea: AKEN.**

*AKEN, A New Type of Iced Tea*

The new AKEN iced tea uses real tea leaves and cane sugars, and it tastes really good!

Derrick Henry:
Football player and Spokesperson for AKEN

**Rice’s new preferred iced tea: AKEN.**

*AKEN, A New Type of Iced Tea*

The new AKEN iced tea uses real tea leaves and cane sugars, and it tastes really good!

Ray Rice:
Football player and Spokesperson for AKEN
APPENDIX C

Questionnaire for the Main Experiment

1. What is your gender?
   O Male
   O Female

2. How old are you? Please write your current age below. For example, if you are 18 years old, please write 18. ____________.

3. What is your race?
   1 (Caucasian) 2 (African-American) 3 (Hispanic) 4 (Asian) 5 (Mixed) 6 (Others)

4. I consider myself a fan of football.
   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

5. I consider myself a fan of Crimson Tide football team at UA (University of Alabama)
   Strongly disagree 1 2 3 4 5 6 7 Strongly agree

6. How familiar are you with the brand name AKEN?
   Extremely unfamiliar 1 2 3 4 5 6 7 Extremely familiar

7. **Please choose one that best indicates your personal involvement with sports drinks.**
   To me, sports drinks are ______.
   
   Unimportant 1 2 3 4 5 6 7 Important
   Boring 1 2 3 4 5 6 7 Interesting
   Irrelevant 1 2 3 4 5 6 7 Relevant
   Unexciting 1 2 3 4 5 6 7 Exciting
   Mean nothing 1 2 3 4 5 6 7 Mean a lot to me
   Unappealing 1 2 3 4 5 6 7 Appealing
   Mundane 1 2 3 4 5 6 7 Fascinating
   Worthless 1 2 3 4 5 6 7 Valuable
   Uninvolving 1 2 3 4 5 6 7 Involving
   Not needed 1 2 3 4 5 6 7 Needed
8. Please choose one that best indicates your personal involvement with iced tea.

To me, iced tea is ________.

- Unimportant 1  2  3  4  5  6  7  Important
- Boring 1  2  3  4  5  6  7  Interesting
- Irrelevant 1  2  3  4  5  6  7  Relevant
- Unexciting 1  2  3  4  5  6  7  Exciting
- Mean nothing 1  2  3  4  5  6  7  Mean a lot to me
- Unappealing 1  2  3  4  5  6  7  Appealing
- Mundane 1  2  3  4  5  6  7  Fascinating
- Worthless 1  2  3  4  5  6  7  Valuable
- Uninvolving 1  2  3  4  5  6  7  Involving
- Not needed 1  2  3  4  5  6  7  Needed

9. The combination of the football player (Derrick Henry) and the sport product (sports drinks) featured in this advertisement is _________.

- Not a good match 1  2  3  4  5  6  7  A good match
- Not a good fit 1  2  3  4  5  6  7  A good fit
- Does not go together 1  2  3  4  5  6  7  Does go together

Please answer questions about how strongly you feel attached to Derrick Henry.

10. I love Derrick Henry.

- Strongly disagree 1  2  3  4  5  6  7  Strongly agree

11. I feel affectionate toward Derrick Henry.

- Strongly disagree 1  2  3  4  5  6  7  Strongly agree

12. I feel friendly toward Derrick Henry.

- Strongly disagree 1  2  3  4  5  6  7  Strongly agree

13. I feel connected to Derrick Henry.

- Strongly disagree 1  2  3  4  5  6  7  Strongly agree


- Strongly disagree 1  2  3  4  5  6  7  Strongly agree

15. I feel attached to Derrick Henry.

- Strongly disagree 1  2  3  4  5  6  7  Strongly agree

16. I feel delighted by Derrick Henry.

- Strongly disagree 1  2  3  4  5  6  7  Strongly agree

17. I feel passionate for Derrick Henry.

- Strongly disagree 1  2  3  4  5  6  7  Strongly agree

18. I feel captivated by Derrick Henry.

- Strongly disagree 1  2  3  4  5  6  7  Strongly agree
19. I think Derrick Henry is very likable.
Strongly disagree 1 2 3 4 5 6 7 Strongly agree

20. I consider Derrick Henry to be ______.
Unattractive 1 2 3 4 5 6 7 Attractive
Not classy 1 2 3 4 5 6 7 Classy
Ugly 1 2 3 4 5 6 7 Handsome
Plain 1 2 3 4 5 6 7 Elegant
Not sexy 1 2 3 4 5 6 7 Sexy

21. In supporting Henry’s claims related to the product made in the advertisement, I think Derrick Henry is ______ in the sports drink product.
Not an expert 1 2 3 4 5 6 7 An expert
Inexperienced 1 2 3 4 5 6 7 Experienced
Unknowledgeable 1 2 3 4 5 6 7 Knowledgeable
Unqualified 1 2 3 4 5 6 7 Qualified
Unskilled 1 2 3 4 5 6 7 Skilled

22. I think Derrick Henry is _____ in his sport (football).
Not an expert 1 2 3 4 5 6 7 An expert
Inexperienced 1 2 3 4 5 6 7 Experienced
Unknowledgeable 1 2 3 4 5 6 7 Knowledgeable
Unqualified 1 2 3 4 5 6 7 Qualified
Unskilled 1 2 3 4 5 6 7 Skilled

23. I consider Derrick Henry to be _____.
Undependable 1 2 3 4 5 6 7 Dependable
Dishonest 1 2 3 4 5 6 7 Honest
Unreliable 1 2 3 4 5 6 7 Reliable
Insincere 1 2 3 4 5 6 7 Sincere
Untrustworthy 1 2 3 4 5 6 7 Trustworthy

24. My attitude toward Derrick Henry featured in this ad is ________.
Bad 1 2 3 4 5 6 7 Good
Unfavorable 1 2 3 4 5 6 7 Favorable
Negative 1 2 3 4 5 6 7 Positive

25. My attitude toward the advertisement is ________.
Bad 1 2 3 4 5 6 7 Good
Unfavorable 1 2 3 4 5 6 7 Favorable
Unpleasant 1 2 3 4 5 6 7 Pleasant

26. My attitude toward the brand AKEN endorsed by Derrick Henry is ________.
Bad 1 2 3 4 5 6 7 Good
Unfavorable 1 2 3 4 5 6 7 Favorable
27. If I was considering buying a sports drink, I would consider buying the AKEN sports drink.

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APPENDIX D

Variables and Measures

Measure of Football Fandom
1. I consider myself a fan of football.

Measure of Crimson Tide UA Football Team Fandom
1. I consider myself a fan of Crimson Tide football team at UA.

Measure of Celebrity Fandom
1. I consider myself a fan of football.

Celebrity Familiarity Measure (Kamins, 1990)
1. Extremely unfamiliar/Extremely familiar

Brand Familiarity Measure (Kamins, 1990)
1. Extremely unfamiliar/Extremely familiar

Product Involvement Measure (Zaichkowsky, 1994)
1. Unimportant/Important
2. Boring/Interesting
3. Irrelevant/Relevant
4. Unexciting/Exciting
5. Mean nothing/Mean a lot to me
6. Unappealing/Appealing
7. Mundane/Fascinating
8. Worthless/Valuable
9. Uninvolving/Involving
10. Not needed/Needed

Measure of Endorser-Product Match-up (New scale)
1. Not a good fit/A good fit
2. Not a good match/A good match
3. Does not go together/Does go together

Endorser Attachment Measure (Thomson et al., 2005)
1. I love Derrick Henry.
2. I feel affectionate toward Derrick Henry.
3. I feel friendly toward Derrick Henry.
4. I feel connected to Derrick Henry.
5. I feel bonded to Derrick Henry.
6. I feel attached to Derrick Henry.
7. I feel delighted by Derrick Henry.
8. I feel passionate for Derrick Henry.
9. I feel captivated by Derrick Henry.

**Endorser Likability Measure (Kamins, 1990)**
1. I think Derrick Henry is very likable.

**Endorser Attractiveness Measure (Ohanian, 1990)**
1. Unattractive/Attractive
2. Not classy/Classy
3. Ugly/Handsome
4. Plain/Elegant
5. Not sexy/Sexy

**Product Expertise Measure of Endorser (Ohanian, 1990)**
1. Not an expert/Expert
2. Inexperienced/Experienced
3. Unskilled/Skilled
4. Unqualified/Qualified
5. Unknowledgeable/Knowledgeable

**Professional Expertise Measure of Endorser (Ohanian, 1990)**
1. Not an expert/Expert
2. Inexperienced/Experienced
3. Unskilled/Skilled
4. Unqualified/Qualified
5. Unknowledgeable/Knowledgeable

**Endorser Trustworthiness Measure (Ohanian, 1990)**
1. Undependable/Dependable
2. Dishonest/Honest
3. Unreliable/Reliable
4. Insincere/Sincere
5. Untrustworthy/Trustworthy

**Endorser Attitude Measure (Till & Shimp, 1998)**
1. Bad/Good
2. Unfavorable/Favorable
3. Negative/Positive

**Advertising Attitude Measure (Lee & Koo, 2015; MacKenzie & Lutz, 1989)**
1. Bad/Good
2. Unfavorable/Favorable
3. Unpleasant/Pleasant
Brand Attitude Measure (Lee & Koo, 2015; Till & Shimp, 1998)
1. Bad/Good
2. Unfavorable/Favorable
3. Negative/Positive

Purchase Intent Measure (Yi, 1990)
1. Unlikely/Likely
2. Impossible/Possible
3. Improbable/Probable
APPENDIX E

IRB Approval

November 7, 2016

Joong Suk Lee
College of Communication & Information Sciences
The University of Alabama
Box 870172

Re: IRB # 16-OR-380, “The impact of celebrity endorser attachment and endorser-product match on endorser credibility, endorser attitude, consumer attitudes, and purchase intent”

Dear Joong Suk:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. You have also been granted the requested waiver of written documentation of informed consent. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your application will expire on November 3, 2017. If your research will continue beyond this date, please complete the relevant portions of the IRB Renewal Application. If you wish to modify the application, please complete the Modification of an Approved Protocol form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, please complete the Request for Study Closure form.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

[Signature]

Carpentaro T. Myles, MSM; CIM, CIP
Director of Research Compliance Office
Office for Research Compliance
The University of Alabama