INGREDIENT AND SYMBOLIC CO-BRANDING STRATEGIES IN THE SPORTS INDUSTRY

by
HoYeol Yu

A dissertation submitted to the Health and Human Performance,
College of Liberal Arts and Social Sciences
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in Kinesiology

Chair of Committee: Don Lee, Ph.D.

Committee Member: Billy Hawkins, Ph.D.

Committee Member: Michael Cottingham, Ph.D.

Committee Member: Kitty Wang, Ph.D.

University of Houston
August 2020

ACKNOWLEDGMENTS

First of all, I would like to give special thanks to Dr. Don Lee, my committee chair, because he guided me to study sport management at the University of Houston. He has always supported my idea and answered my questions and concerns. Next, I would like to thank other committee members, Dr. Hawkins, Dr. Cottingham, and Dr. Wang, who have been encouraging and supportive.

I would also thank my friends and colleagues at the University of Houston and the Department of Health and Human Performance. I am very appreciative for their support, help, and encouragement.

Finally, and most importantly, I would like to express my sincere gratitude and endless love to my family, including my wife, my daughter, and my parents. Without their tireless support and sacrifice, my journey could not have been succeeded.

Abstract

Co-branding tactic, which two or more brands are jointly presented on a product, has become a prevalent marketing strategy across multiple industries. In co-branding, two types of co-branding approaches have recently been suggested and studied: symbolic and ingredient co-branding (Kotler & Pfoertsch, 2010). Despite the increasing research on the impact of co-branding strategy in the marketing domain, it has not been well studied to understand the effect of co-branding strategy in the sport context. Moreover, the effect of symbolic and ingredient co-branding tactics has not been examined direct comparisons of differing effects on consumer behavior. Thus, knowing the impact of diverse co-branding strategies is crucial for brand managers to remain competitive in the market in the context of sport. Taken together, the goal of this research was to advance our knowledge of the co-branding strategies in the sports context. More specifically, main objectives are in twofold: (1) to gain a comprehensive understanding about what consumer perceptions of self-image congruence (SICCB), perceived product quality (PPQCB), and co-brand image fit (CBFCB) influence consumer behavior, such as consumer attitude (ATCB) and purchase intention (PICB) and (2) to understand how individuals differently perceive co-branded sports products under the two co-branding tactics—symbolic and ingredient co-branding. Data (n = 382) were collected from a varied population through Amazon's Mechanical Turk. The results from multi-group structural equation modeling indicated that positive relationships among SICCB, PPQCB, CBFCB, ATCB and PICB were identified, while a significant group difference between a group with symbolic co-branding and a group with ingredient co-branding was identified on some relationships (i.e., SICCB → ATCB, PPQCB → ATCB, CBFCB → ATCB, and ATCB → PICB).

Additionally, ATCB fully mediated the influence of PPQCB on PICB and partially mediated the influence of SICCB on PICB. The results from the current study confirmed the impact of co-branding and its diverse strategies (symbolic and ingredient co-branding), providing brand managers with potential implications for the use of various co-branding strategy in the sport industry, as well as leading the research to offer suggestions to enhance the success rate of launching co-branded sports products.

Table of Contents

List of Tables

List of Figures

CHAPTER 1

INTRODUCTION

1.1 Background of Study

Brand management has long suggested that a brand is a crucial strategic asset for a firm because it has a significant economic value (Aaker, 1990; Park, Jaworski, & Maclnnis, 1986; Rao, Qu, & Ruekert, 1999). However, it is often difficult for a company to gain such benefits through a brand due to a competitive marketplace. The cost of introducing a new brand in a consumer marketplace can range from $50 million to more than $100 million (Aaker, 1990). Moreover, even the expense of launching a new product by an established brand has significantly increased over time. For example, the average cost of launching a new product between 1997 and 2010 was $15 million, and it is reported that the cost to a brand of introducing a new product was $71 million in 2012 (Cecere, 2013). Yet, investing in this expense of new brands or brand launching products does not even guarantee success in the market due to multiple reasons, such as a highly saturated market and increased market competition. Therefore, companies have devoted substantial attention to marketing strategies, including branding and brand management, to enhance the favorability and strength of brands, as well as the sales of company products.

However, many brands have still faced difficulties in increasing consumer's favorable perceptions of their products due to unstable environments, intense competition, and dynamic markets (Desai & Keller, 2002). Consequently, many companies have tried to adopt innovative branding strategies, including co-branding and brand extension, in an attempt to take advantage of their existing brand equity (Desai &

Keller, 2002). Notably, co-branding has emerged as an attractive brand management tactic within the past three decades (Besharat & Langan, 2014). Co-branding refers to a branding strategy such that two or more brands are simultaneously presented on the same product (Davies & Prince, 2002; Rao & Ruekert, 1994). This branding approach is often used as a means to enhance brand leverage, brand image, and increased product sales (Geylani, Inman, & Hofstede, 2008; Lee, Cottingham, Pearson, Kim, & Park, 2016; Simonin & Ruth, 1998; Washburn, Till, & Priluck, 2000). In particular, the number of co-branded products have increased by 20 percent every year since the mid-1990s (Monga & Lau-Gesk, 2007).

Co-branding has also become a prevalent marketing strategy in the sports industry, with various brands in the marketplace increasingly adopting this tactic (e.g., Apple Watch Nike+). The case of co-branding between sports brands and non-sports brands is particularly interesting not just because of the interchanging and sharing image of both parties, but also because the different kinds of brands (i.e., sports brands and non-sports brands) have traditionally had different target population and segments (Holmes & Tierney, 2002). Furthermore, sports industry is one of the valuable markets in the United States given that sales in sporting goods (e.g., athletic footwear, exercise equipment, licensed sports merchandise, or athletic apparel) reached $47 billion annually (Statista, 2018). More specifically, the leading manufacturing brand Nike generated approximately $35.29 billion in sales between 2017 and 2018 (Statista, 2018). Despite this significant amount in sports industry sales, little empirical research upon the effectiveness of co-branding has been conducted in the context of sports (Kwon, Kim, & Mondello, 2008; Lee et al., 2016; Wu & Chalip, 2013). In contrast, the actual practical use of co-branding

has been increasingly employed by professional practitioners in the current market without a comprehensive understanding of its branding strategy (e.g., Puma co-branded with Pepsi, Under Armour co-branded with JBL, Fila co-branded with Pierre Cardin).

For example, manufacturer brands in the context of sports (sports manufacturing brands) have used co-branding tactics across a wide range of product categories, such as sportswear and sports technology products. Co-branding, in particular, has more recently become a new marketing trend in the wearable sports device segment (e.g., Apple Watch Nike+ and Fitbit Ionic: Adidas edition). This is an interesting marketing trend because wearable sports device is one of the fastest-growing industry segments as is evidenced by the fact that 70 million devices were purchased in 2014 (Kreitzberg, Dailey, Vogt, Robinson, & Zhu, 2016). Moreover, this wearable sports device market has grown exponentially into a $330 million industry and the market is estimated to grow to a $51.60 billion industry by 2022 (Lunney, Cunningham, & Eastin, 2016; Shelly, 2017).

The co-branding marketing tactic has been applied to a wide range of sports products under various sports manufacturing brands (e.g., Under Armour co-branded with JBL, Apple co-branded with Nike, and Fitbit co-branded with Adidas). Nike's co-branding partnership with Apple (i.e., Nike+ iPod Sport Kit) and Adidas's co-branding partnership with Stella McCartney (i.e., sportswear line) are two of the most successful examples of co-branding in the context of sports.

Existing literature indicates that there are generally two types of co-branding approaches, such as symbolic and ingredient co-branding (Kotler & Pfoertsch, 2010; Mazodier & Merunka, 2014). Symbolic co-branding refers to a brand alliance in which a secondary brand (partner brand) will offer additional symbolic attributes to a host brand

(Kotler & Pfoertsch, 2010). More specifically, this tactic aims to improve a co-branded product's self-expression, status appeal, and symbolic associations through the secondary brand's inherent symbolism (e.g., self-image, status appeal). One example would be the co-branded Apple Watch that features Hermes, which is a high-end retailer. The Hermes brand is intended to add the symbolic association of a luxurious brand image onto the Apple Watch. The use of symbolic co-branding has increasingly grown since symbolic co-branded products tend to attract new target demographics by displaying a secondary partner's brand equity (Park, Jun, & Shocker, 1996). Furthermore, this symbolic co-branding strategy is likely to increase consumers' consumption "by providing new products that appeal to consumers' need for uniqueness" (Mazodier & Merunka, 2014, p. 1552). By contrast, ingredient co-branding is more common in the market and is described as the incorporation of the secondary brand's functional attributes into a host brand (Helmig, Huber, & Leeflang, 2008). For instance, marketing researchers primarily looked at examples of products that used ingredient co-branding, such as the brand alliance between IBM computers and Intel computer processing chips (Desai & Keller, 2002). The practical use of co-branding has been employed relatively recently in the context of sports, especially with the two types of co-branding strategies distinctively being utilized. Examples of ingredient co-branding in sport context include Under Armour and JBL's headphones as well as Babolat and Michelin's tennis shoes. The incorporation of loudspeakers into Under Armour's headphones and rubber soles made from the same materials as a well-known car tire brand embedded into Babolat's tennis shoes are examples of the secondary brand's functional features, which enhance the co-branded products' overall performance. On the other hand, examples of symbolic co-

branding include the sportswear lines by Adidas and Stella McCartney and Kanye West or PUMA and Ferrari/BMW. Brands and fashion designers such as Stella McCartney, Kanye West, Ferrari, and BMW have shared their symbolic brand image and have jointly designed these sportswear lines.

As the purpose of symbolic branding strategy is to provide a brand's symbolism that fulfills internally generated consumer needs (e.g., self-concept, self-enhancement, the expression of status, group membership, ego-identification; Han, 2006), the symbolic co-branding strategy is also purported to provide analogous perceptions and image to the consumers. In sum, there is evidence that the use of various co-branding strategies in the sports industry is detected and expected to grow.

1.2 Statement of Problem

With the growth of co-branding research and practice, various sports manufacturing brands have implemented a wide range of co-branding strategies. The increasing popularity of co-branding as a marketing trend may be because co-branding is seen "as a cost-effective alternative to developing a new in-house brand" (Oeppen & Jamal, 2014, p. 927). Accordingly, it is crucial for both sport marketing researchers and practitioners to understand consumers' perceptions of co-branded sports products, and it is even more vital for brand managers to have a thorough understanding of consumer perceptions, given that the failure rate of co-branded products is approximately 80-90% (Rao et al., 1999).

It should be noted that co-branding is not always beneficial: according to McKee, "if the consumers' experience is not positive—even if it is the other brand's fault—it may reflect negatively on other partner brands" (2009, p. 3). Therefore, when utilizing a co-

branding strategy, companies should be cautious and deliberate in order to maximize positive outcomes (e.g., the success rate of co-branding, the reduction of marketing expenses). A better understanding of co-branding would provide significant insights into how consumers perceive co-branded products, insights that are essential to practitioners when developing effective marketing strategies and avoiding failure in the market, especially in the area of sports where co-branding is a relatively new marketing practice (Lee et al., 2016).

Nevertheless, little empirical research has been conducted on the impact of co-branding in the context of sports manufacturing brands (e.g., Kwon et al., 2008; Lee, Pierce, Kim, Krill, & Felver, 2014; Wu & Chalip, 2013). It is possible that the limited empirical research could result in a lack of understanding of the use of effective marketing strategies in sports co-branding. Furthermore, existing co-branding literature across multiple disciplines—including sports—primarily focuses on partner brand selection as the most significant decision (e.g., Lee et al., 2016; Rao et al., 1999; Simonin & Ruth, 1998). It is important to note that these perspectives only consider brand-brand related aspects of co-branding, such as perceived co-brand image fit (brand-brand fit), and overlook how a consumer perceives a co-branded product itself (consumer perceptions of co-branded products' functionality or symbolism; consumer-brands/products aspects). Accordingly, there is a less clear body of knowledge on consumers' perceptions (consumer-brands/products) in regard to co-branding. To fill this gap in co-branding literature in the context of sports, consumers' perceptions of co-branded products need to be identified, established, and incorporated into the examination of co-branding's overall impact on consumer attitudes and purchase

intentions toward co-branded sports products.

To support needs of perceptions of co-branded product's functionality or symbolism, two important consumer perceptions of products have been recognized and recommended by researchers: symbolic and functional aspects of products (Bhat & Reddy, 1998; Graeff, 1997; Kwak & Kang, 2009; Sirgy, 1982). This may be due to the fact that consumer behavior is a positive function of both hedonic (e.g., symbolic aspects) and utilitarian (e.g., functional aspects) drives. However, in the context of co-branding, little research has underlined the important determinants in evaluating co-brands, such as how consumers' perceptions of co-branded product's functionality influence consumer behavior (Rao & Ruekert, 1994; Rao et al., 1999) and how symbolic co-branded products affect consumer behavior (the degree to which a congruence between a consumer's self-image and a co-branded product; Wu & Chalip, 2013). In terms of co-branded products' symbolic meaning, Mazodier and Merunka (2014) examined the effect of symbolic co-branding using consumers' perceived self-image congruence as to whether the level of self-image congruence between consumers and brands/product influenced consumer behavior. Their findings indicate that consumers were likely to match their self-image with co-branding and thus influence purchase intention. In addition, Wu and Chalip (2013) found that consumers were likely to emphasize the symbolic meaning of co-branded sports products (e.g., sportswear). When it comes to co-branded products' functionality (e.g., perceived quality), Andres (2003) and Helmig et al. (2008) argued that the quality of the co-branded product could play a positive role in affecting consumer attitude. In addition, Rao and Ruekert (1994) examined the effect of co-branded products' perceived product quality and identified that consumers were more likely to positively

perceive co-branded products' functionality than single-branded products (Rao & Ruekert, 1994). Importantly, the above findings demonstrate some knowledge of the factors that influence consumer behavior toward co-branded products. However, no single study has incorporated the factors, including self-image congruence and perceived product quality, to investigate consumer behavior toward co-branding.

Moreover, no research has examined how consumers perceive different co-branding strategies, including symbolic and ingredient co-branding, even if the impact of symbolic and ingredient co-branded products could be certainly different. It is important to note that symbolic and functional aspects of brands do not impact consumer behavior (perception and consumption) in the same way (Mazodier & Merunka, 2014). Furthermore, "symbolic experiences with brands are assumed to remain more stable over time than do perceived functional values of brands" (Ahn & Sung, 2012, p. 415), thereby indicating that consumers may be more likely to be influenced by symbolic meaning. However, to the best of my knowledge, a comparison of symbolic and functional aspects as to how these elements influence in consumer behavior has not been investigated. Therefore, it is critical that brand managers need to fully understand how consumers react to co-branded products when using either a symbolic or an ingredient co-branding strategy.

In sum, as co-branding is a relatively recent marketing practice in the sports industry (Lee et al., 2016), the co-branding literature is relatively scarce. With that in mind, investigating the impact of co-branding and comparisons of symbolic and ingredient co-branding can be justified by following reasons. First, little empirical research has been conducted on co-branding in the context of sports manufacturing

brands. Second, limited research has examined perceptions of co-branded sports products (i.e., symbolic perception of product; self-image congruence and functional perception of product; perceived product quality), along with the currently well-researched critical factors (perceived co-brand image fit). Lastly, no research has examined to understand the patterns of the consumers' behaviors toward co-branded sports products under the different co-branding strategies of symbolic and ingredient co-branding. Consequently, it is necessary to deal with these three limitations in order to advance the body of knowledge on the increasing use of various co-branding strategies in the sports industry.

1.3 Significance of Study

The current study provides meaningful and insightful information pertaining to co-branding strategy in the context of sport. Specifically, the significance of this research lies in its unique focus on identifying existing consumers' perceptions toward co-branded sports products and examining how consumers perceive dynamic co-branding strategies in the context of sports (i.e., symbolic and ingredient co-branding). At the same time, consumer's salient perception of symbolic meaning, product's quality, and perceived co-branding fit has not been the focus of empirical examination to better understand consumer behavior. To that end, this study suggests that there are three vital consumer perceptions in the co-branding context: self-image congruence, perceived product quality, and perceived co-brand image fit. Unlike previous research that primarily studied these salient aspects independently (e.g., Rao & Ruekert, 1994; Simonin & Ruth, 1998; Wu & Chalip, 2013), this dissertation incorporates these factors in order to see how these aspects influence consumer attitudes and purchase intentions of co-branded sports products.

It is important to note that this dissertation is a first attempt to integrate and empirically investigate the dimensions of self-image congruence, perceived product quality, and perceived co-brand image fit, and their influence on consumer attitudes and purchase intention. Examining consumers' perceptions of self-image congruence, perceived product quality, and perceived co-brand image fit—and subsequently learning which aspects have more or less influence consumer behavior—will help companies and manufacturers not only reach consumers more effectively but also increase their awareness and the sales of products. Furthermore, this dissertation makes a significant contribution to the sport management literature by understanding and clarifying the relationships among the proposed consumer aspects and their impact on sport consumer behavior.

The significance of the dissertation also lies in its examination of differences between symbolic and ingredient co-branding strategies. Given that symbolic and functional aspects of brands do not exert identical influences on consumer behavior (Mazodier & Merunka, 2014), understanding the differences in consumers' perceptions of symbolic and ingredient co-branding strategies would help managers and marketers develop marketing plans that take into account which aspects consumers perceive more favorably when faced with different co-branding marketing strategies. A comprehensive understanding of the nuances of various co-branding strategies can ensure a competitive advantage in the marketplace and be a significant marketing tool that allows sports manufacturing brands to maximize their profit by reducing the failure rate. Thus, this dissertation can be seen as providing an overall understanding of how the success rate of co-branded sports products can be both secured and increased.

1.4 Purpose of Study and Research Questions

The goal of this study was to advance our knowledge of the co-branding strategies in the sport context. It does so by incorporating important aspects, such as self-image congruence, perceived product quality, and perceived co-brand image fit, to better understand the changing dynamics in sport consumer behaviors. In particular, this dissertation is purported to examine consumers' perceptions of co-branded sports products and how these perceptions can influence consumer attitudes and purchase intentions based on the two aforementioned co-branding strategies: symbolic and ingredient co-branding.

Taken together, the aim of this study was twofold: (1) to gain a comprehensive understanding of the relationships among consumer perceptions (i.e., self-image congruence, perceived product quality, and perceived co-brand image fit), consumer attitudes toward co-branded sports product, and purchase intentions and (2) to understand how individuals perceive co-branded sports products under the two aforementioned co-branding tactics—symbolic and ingredient co-branding. More specifically, this study addresses the following research questions:

RQ1: What aspects of co-branded sports products do consumers perceive that influence their attitudes and purchase intentions?

RQ2: Are there any differences in consumers' aspects of co-branded products under two different branding strategies such as symbolic and ingredient co-branding?

CHAPTER 2

LITERATURE REVIEW

This review of literature on co-branding contains eight sections, respectively addressing (1) symbolic and functional aspects of brands, (2) co-branding, (3) co-branding in the context of sports, (4) self-image congruence, (5) perceived product quality, (6) perceived co-brand image fit, (7) consumer attitude and purchase intention, and (8) research on co-branding overall and the hypotheses of this dissertation. Section one describes important factors of consumers' behavior in relation to symbolic and functional aspects of brands, after which Section two introduces a definition of *co-branding* as well as theories and research in general. Next, focusing exclusively on the context of sports, Section three provides a definition of co-branding in that context, co-branding practices in the sports industry, and research on co-branding and sport consumer behavior. Section four discusses self-concept and self-image congruence, whereas Section five discusses consumers' perceptions of product quality. After that, Section six addresses consumers' perceived co-brand image fit including product fit and brand image fit, followed by Section seven, which describes the relationship between consumer attitude and purchase intention. Last, Section eight summarizes the overall review of literature and proposes hypotheses of the dissertation.

2.1 Symbolic and Functional Aspects in Consumer Behavior

2.1.1 Consumer's needs of symbolic and functional of brands and products.

In general, a consumer's needs for a brand can be categorized as either symbolic or functional (Bhat & Reddy, 1998). A consumer's *symbolic needs* refers to personal desires for a brand's symbolism that fulfill internally generated needs related to self-concept,

self-enhancement, the expression of status, group membership, ego-identification, or a combination of those aspects (Han, 2006). Researchers have proposed that it is important for consumers to purchase products, brands, or services in order to identify themselves with a product's or brand's inherent symbolism (Belk, 1998; Levy, 1959), by which consumers fulfill personal needs, including senses of achievement, power, and success (Foxall, Goldsmith, & Brown, 1998). In theory, consumers are likely to purchase a product or service to express their self-enhancement, -esteem, or -achievement. Additionally, as Han (2006) has stated, "selecting brands with images that are congruent to one's self-image may also reflect an attempt to preserve or enhance an individual's self-image" (p. 1).

On the other hand, a consumer's *functional needs* refer to desires that motivate the search for products that solve his or her consumption-related problems (Park et al., 1986). That is, consumers attempt to realize a product's utility by purchasing products or brands based on the products' performance or quality. The notion of functional needs implies that consumers are inclined to purchase brands or products to satisfy their practical needs. In that sense, Holbrook (1980) has identified that consumers may purchase products, services, or brands given the value that they place on the utilitarian and tangible properties of those products, services, or brands.

2.1.2 **Symbolic and functional brand positioning.** Park et al. (1986) proposed that all kinds of brands should have a brand concept, "which is an overall abstract meaning that identifies a brand" (Bhat & Reddy, 1998, p. 33). According to Bhat and Reddy (1998), the concept of brands themselves "can be either symbolic or functional, and thus comprises one aspect of a brand's image" (p. 32) so that brands can fulfill

consumers' needs for symbolism and functionality (Park et al., 1986). In particular, whereas functional brands fulfill the timely, practical needs of consumers, symbolic brands fulfill consumers' symbolic needs related to self-expression and prestige, for instance, and their practical usage is merely incidental (Bhat & Reddy, 1998). The automotive brand Honda, renowned for high-quality products with long life spans, tends to be a functional brand, and consumers are likely to want to buy Honda-branded cars to fulfill their functional needs instead of symbolic needs (Bhat & Reddy, 1998). By contrast, consumers who want to buy Mercedes-Benz products that are more likely to fulfill symbolic needs by appealing to the status of the Mercedes-Benz brand (see O'Cass & Frost, 2002).

Since consumers seek to fulfill different needs by purchasing different brands, products and services, researchers have long studied the importance of brand symbolism and functionality from a consumer's standpoint (e.g., Bhat & Reddy, 1998; Johar & Sirgy, 1991; Mazodier & Merunka, 2014). Importantly, some of those researchers have argued that the "symbolic attributes and functional attributes [of brands] do not influence consumer behavior in the same way" (Mazodier & Merunka, 2014, p. 1552) and that brand symbolism and functionality are distinct concepts in the minds of consumers (Bhat & Reddy, 1998). Accordingly, marketing researchers and practitioners should understand the concepts and positioning of brands depending on whether they seek to highlight their brands' symbolism or functionality.

Likewise, co-branding in recent years has tended to use both functional (ingredient) and symbolic branding strategies to appeal to consumers since practitioners understand that consumer behavior could be differed depending on different co-branding

strategies. Particularly, it is assumed that consumers are more likely to be influenced by symbolic aspects in symbolic co-branding compared to ingredient co-branding since "symbolic experiences with brands are assumed to remain more stable over time than do perceived functional values of brands" (Ahn & Sung, 2012, p. 415). Similarly, potential differences could be expected since it may be assumed that the concept of co-branding may be either symbolic or functional based on brand manager's decision. Although the differences between symbolic and functional (ingredient) co-branding strategies could be identified and applied in the context of sports manufacturing brands, no empirical research has involved examining how symbolic or functional (ingredient) co-branding influences consumer behavior or, by extension, how consumers' perceptions of such branding influence their attitudes and purchase intentions. To fill this gap, it is essential to identify how the different effects of symbolic and ingredient (functional) co-branding can explain consumer behavior. Therefore, this dissertation proposes that a consumer's perceptions and evaluation of, as well as attitudes toward, co-branded sports products tend to differ depending on whether the co-branding strategy appeals to the ingredient (functional) or symbolic aspects of those products.

2.2 Co-branding

2.2.1 **General definition.** Although co-branding has increasingly received scholarly attention, no consensus exists among researchers on what *co-branding* means. Over the years, various terms—*strategic alliance*, *composite branding* (Park, Jun, & Shocker, 1996), *ingredient branding* (Leuthesser, Kohli, & Suri, 2003; Norris, 1992), and *joint branding* (Rao & Rueker, 1994; Simonin & Ruth, 1998)—have been used interchangeably to refer to the concept of co-branding. With reference to that diversity of

terms, this dissertation defines co-branding as a branding strategy in which two or more brands are joined in a short- or long-term alliance that involves using multiple brand names for the same product (Gammoh, Voss, & Chakraborty, 2006; Park et al., 1996; Prince & Davies, 2002; Rao & Ruekert, 1994; Singh, Kalafatis, & Ledden, 2014).

2.2.2 **Research on co-branding.** In the past three decades, research on co-branding has been extensive. Early on, Norris (1992), who proposed the concept of co-branding and its potential benefits for brands and products, suggested that "the firm that may benefit the most from adoption of the branded ingredient is the one that trails the market share leader in a product category" (p. 26). Two years later, Rao and Ruekert (1994) developed a conceptual framework holding that reputable brands are more suitable for forming brand alliances.

Those conceptual foundations have provided marketing researchers with significant insights that have spurred diverse empirical research on co-branding (Levin, Davis, & Levin 1996; Park et al., 1996; Shocker, 1995; Simonin & Ruth, 1998). In particular, Park et al. (1996) observed that positively perceived features of one partnering brand are likely to be transferred to co-branded products. They further explained that a co-branded product with two favorable or complementary brands has a better-perceived attribute in consumers' minds. Levin et al. (1996) consistently indicated that consumers' evaluations of co-branded products are likely to improve when the co-branding arrangement uses a well-known partner brand. For brand managers, such findings underscore the importance of employing reputable, complementary brands when implementing co-branding tactics when they choose a secondary partner brand (Fang & Mishra, 2002; Voss & Tansuhaj, 1999).

Research on co-branding has also examined the spillover effects for constituent brands in co-branding partnership (e.g., Simonin & Ruth, 1998; Singh et al., 2014). By definition, a *spillover effect* is "a psychological mechanism that describes the influence of the activation of one node and its associated elements on other related nodes in a network, which is strengthened through pre-existing links between these nodes" (Singh et al., 2014, p. 147). Spillover effects can arise when a positive perception is transferred from an existing attitude of each partnering brand and a newly formed attitude toward the same brands via co-branding tactic (e.g., Simonin & Ruth, 1998). Further confirming a positive spillover effect via co-branding, Simonin and Ruth (1998) and Singh et al. (2014) empirically found that consumers' attitudes toward partnering brands positively influence their perceptions of those brands and their co-branded products.

In addition, Simonin and Ruth (1998) have identified important factors in consumer behavior toward co-branding, including the perceived fit between partnering brands (i.e., product fit and brand fit). The impact of perceived brand fit has also been identified as a significant element in influencing consumers' behavior toward co-branded products (Bouten, Snelders, & Hultink, 2011; Helmig, Huber, & Leeflang, 2007; Simonin & Ruth, 1998). Overall, research has suggested that co-branding practices can induce spillover effects, as well as that consumers' perceptions of high product fit and brand fit are positively associated with their attitudes toward co-branded products and their evaluations of the co-brand.

In replicated studies and emerging theory on consumers' perceptions of co-branded products, researchers have recently suggested that the co-branding strategies categorize either symbolic co-branding or ingredient co-branding (Kotler & Pfoertsch,

2010; Mazodier & Merunka, 2014). *Symbolic co-branding* refers to a brand alliance in which a secondary brand offers its symbolical attributes to a host brand (Kotler & Pfoertsch, 2010), often to improve both the self-expressive associations and symbolic meaning of the co-branded product by virtue of the secondary brand's symbolic attributes. Mazodier and Merunka (2014) examined the impact of co-branding that focused on symbolic co-branding wherein a host brand used a secondary brand for its symbolism on their co-branded product. In their research, they used symbolic co-branded concept mobile cellphone products as a stimulus and examined consumers' perceptions toward the products. As a result, they identified that the products played a pivotal role in influencing purchase intention.

On the other hand, *ingredient co-branding* refers to the incorporation of a secondary brand's functional features into a co-branded product (Helmig et al., 2008). In research on that strategy, Simonin and Ruth (1998) investigated a brand alliance between the automotive brand Ford and various information technology companies (i.e., Samsung, Sony, Motorola, Fujitsu, and Siemens). They identified that consumers' perceived brand fit, including perceived product fit and perceived brand image fit, significantly influenced their attitudes toward evaluation of ingredient co-branded products. Other researchers have examined the impact of ingredient co-branding strategy, including Coca-Cola's alliance with NutraSweet, whereas other scholars have studied products mobilizing ingredient co-branding, as in the branding partnership between IBM computers and Intel computer processing chips (Desai & Keller, 2002; Helmig et al., 2007, 2008). Such co-branded products have indicated how secondary brands' functional features can be strategically integrated into host brands to enhance the products' performance. Despite

emerging literature on symbolic and ingredient co-branding strategies, few researchers have independently investigated the use of those strategies for brands in the context of sports manufacturing brands (Wu & Chalip, 2013). Furthermore, while co-branding partnerships that sports manufacturing brands serve as both the host and partnering brands are not uncommon in the marketplace (e.g., Adidas co-branded with Stella McCartney, Nike+iPod, and Apple Watch Nike+), previous research has not examined the impact of co-branding focusing on its dynamic strategies: symbolic and ingredient co-branding.

2.3 Co-branding in the Context of Sports

2.3.1 **Definition of co-branding in the context of sports.** Since research on co-branding remains relatively new in the context of sports manufacturing brands, no clear definition or categorization of symbolic and ingredient co-branded sports products has been developed. In response, this dissertation attempts to differentiate symbolic from ingredient co-branded sports products with reference to two important theoretical and empirical observations. First, it is important to note that "consumers' needs are driven by functional or utilitarian motivations" and by symbolic or expressive motivations (Bhat & Reddy, 1998, p. 33). Hence, the functional needs fulfilled by brands respond to the practical problems of the consumption of branded products, while the symbolic needs that brands and products fulfill also relate to consumers' self-image and social identification (Bhat & Reddy, 1998).

Second, ingredient co-branding that incorporates a secondary brand's functional attributes, features, or technology into a primary brand relates to practical or functional consumption, whereas symbolic co-branding intends to incorporate the secondary brand's

symbolic attributes (e.g., self-image, status appeal, and self-concept) into the primary brand. For that reason, in the case of symbolic co-branding, this type of strategic partnerships is common associated with luxury and status-signaling brands (e.g., LG-Prada, Sharp-McLaren; Mazodier & Merunka, 2014). In the case of ingredient co-branding, collaborative arrangements are commonly seen in a variety of product categories ranging from durables (e.g., Ford's electronic systems are branded by Microsoft; Moon & Sprott, 2016) to non-durables (e.g., Breyer's ice cream contains Oreo's pieces cookies).

Based on those premises and observations, the dissertation defines *ingredient co-branded sports products* as those with a secondary brand's functional or technological attributes (e.g., enhancing products' performance) incorporated into the primary sports brands and *symbolic co-branded sports products* as those that incorporates a secondary brand's symbolic attributes (e.g., prestige, self-image, self-concept, self-esteem, or status brands) into a primary sports brand.

2.3.2 **Co-branding practices in the sports industry**. Sports manufacturing brands such as Nike and Adidas have long been associated with sport teams and athletes, both of whom generally exhibit the brands on their products. As such, sports manufacturing brands generate sports products focused on consumers who wanted to particularly project a sport image (Wu & Chalip, 2013). Given that the case of co-branding arrangement between sports brands and non-sports brands is notably intriguing not just because of the interchanging and sharing image of both partnering brands, but also because they have traditionally had different target consumers that they collectively attract (Holmes & Tierney, 2002), collaborative arrangements involving with sports

manufacturing brands is a fascinating marketing strategy to boost the products sales and be successful in the competitive market as either co-branding's host brand and partner brand. In this regard, both symbolic and ingredient co-branding strategies have recently been actively applied in various product categories (e.g., sportswear, shoes, and technology devices) in the sports industry.

In the case of symbolic co-branded sports products, Adidas, Puma, Nike, and Under Armour rank among leading sports manufacturing brands that have already employed (a symbolic) co-branding strategy. In particular, Adidas has collaborated with a luxury fashion brand Stella McCartney to manufacture various sportswear, shoes, and accessories; with Wanderlust to create a yoga-specific line; and with Kanye West (Kanye West is a fashion designer and artist) to develop unique sneakers. As another example, Puma has collaborated with sports car manufacturers Ferrari and BMW, as well as motorcycle manufacturer Ducati. Even less prominent sports manufacturing brands have begun using various symbolic co-branding arrangements, including Fila, which collaborated with fashion brand Pierre Cardin and sports car manufacturer brand Ferrari to produce lines of athletic wear and shoes (Besharat, 2010). Such co-branding practices have been designed to appeal to consumers' symbolic needs and encourage them to purchase co-branded sports products.

In the case of Apple Watch Nike+, Nike's sport image has been secondarily embedded into Apple Watch, in a marketing trend in which tech manufacturer Fitbit and Adidas have participated by launching Fitbit Ionic: Adidas Edition. Altogether, whereas various sports manufacturing brands have partnered with non-sports brands to enhance their images and boost sales (e.g., Nike+iPod Sports Kit, Puma with Ferrari), highly

reputable non-sports brands have also implemented co-branding strategies with sports manufacturing brands that have contributed to the image of those brands (e.g., Apple Watch Nike+, Samsung's smartwatch that has a co-branding partnership with Speedo, and Fitbit Ionic: Adidas Edition).

The collaboration between Nike and Apple ranks among the first and most representative co-branding partnerships in the sports industry. In an instance of ingredient co-branding, Nike and Apple co-launched the Nike+iPod Sports Kit, a product that features both brands' logos and a tech-oriented functional attribute (e.g., music player and companion smartphone app), in enabling communication between an athlete's iPod and athletic shoes, was marketed to sports consumers as a tool to improve the quality of their athletic performance. In another example of ingredient co-branded sports products, Under Armour has increasingly used a range of ingredient co-branding strategies in collaborating with audio speaker manufacturer JBL to launch sports-focused headphones whose audio quality enhances Under Armour's sport wireless headphones. In yet another example, Babolat's co-branding partnership with car tire manufacturer Michelin yielded a pair of unique athletic shoes. In that interesting co-branding practice; Michelin's reputation as leading manufacturing tire brand is expected to transfer a level of assurance that Babolat's high-quality tennis shoes can achieve the same level of performance and endurance as a Michelin tire. As shown, both symbolic and ingredient co-branding strategies have taken hold and gained attention in the sports industry.

2.3.3 **Research on co-branding and sport consumer behavior**. Despite the increase of co-branded sports products in the market, research on symbolic and ingredient co-branding in the context of sports has received limited attention. In research on

symbolic co-branding, Wu and Chalip (2013) were the only one who examined the effect of symbolic co-branded sports apparel jointly produced by a fashion designer and a sports manufacturer on consumers' perceptions. Their results indicated that consumers' perceptions towards sports brands' co-branding differs significantly depending on the consumer's gender indicating that men more than women tended to rate such co-branding favorably. Among their other results, the prices of co-brands involving sportswear and fashion designers were expected to be higher than products without such co-branding, which indicates that co-branding can help to generate more profit for the products for sports brands (Wu & Chalip, 2013).

Besides Wu and Chalip's (2013) study that focused on symbolic co-branding strategy, other sport marketing scholars have focused on co-branding in the context of sports teams. In particular, Lee, Kroncke, and Johnson (2012) sought to determine whether the perceived brand fit of respondents' favorite teams in terms of image, quality, and functionality was a significant predictor of consumers' attitudes and purchase intentions towards those teams' co-branding with sports brand Champion. Among their results, consumers' perceived brand fit and attitudes toward the co-branding were significantly associated with their purchase intentions while quality and image were the greatest sub-dimensions of overall perceived brand fit.

Most recently, Lee et al. (2016) examined consumers' perceptions of fictitious co-branding involving a product category match between sports teams and sports-related brands, as well as a product category mismatch between sports teams and non-sports-related brands. Their results indicated that consumers, especially a highly identified sport

fans, favorably perceived sports teams' co-brands when matched by product category (e.g., sports and sports; Nike & Sports Illustrated).

Although research on co-branding in the context of sports has primarily emphasized on the impact of brand-related elements (e.g., perceptions of brand fit), it is important to note that co-branded sports products could also provide the symbolic and functional aspects for consumers (e.g., Wu & Chalip, 2013). However, few studies have highlighted the symbolic and functional aspects of co-branded sports products and their impact on consumers' perceptions (e.g., Wu & Chalip, 2013). At the same time, even though two factors that refer to symbolic and functional aspects—self-image congruence and perceived product quality—have been proposed as important elements for consumptive evaluations in other non-co-branding areas (e.g., Kang, Tang, Lee, & Bosselman, 2012; Sirgy, 1982; Sirgy, Grzeskowiak, & Su, 2005; Sirgy & Su, 2000), they have not been collectively investigated in the context of symbolic and ingredient co-branding, especially in sports marketing.

The overall review of literature on co-branding stress that researchers have recently begun investigating consumers' salient aspects (e.g., self-image congruence) in symbolic co-branding strategies. However, studies to date have largely overlooked other important aspects of co-branded products, including perceived product quality (e.g., Mazodier & Merunka, 2014; Wu & Chalip, 2013). For this reason, consumers' perceptions of the impact of co-branding in response to their needs for self-image congruence and perceived product quality need to be examined collectively.

2.4 The Symbolic Meaning of Self-Image Congruence

The concept of self-image congruence highlights the degree to which a consumer's self-concept and the perceived image of a brand or product match. For this reason, it is important to understand the notion of self-concept in order to grasp how the concept of self-image congruence was created. Thus, this section first explains self-concept as a means to clarify self-image congruence.

2.4.1 **Self-concept.** Because the cognitive appraisal of the self is a significant driver of human behavior (Burn, 1979), self-concept has received considerable attention from scholars in marketing and psychology (Aaker & Joachimsthaler, 1999; Fournier, 1998; Sirgy, 1982). Although researchers have not yet reached a consensus on its definition, *self-concept* in this study is regarded as being formed by an individual's thoughts and feelings about the uniqueness of him- or herself, self-enhancement, self-esteem, and self-achievement (Grubb & Grathwohl, 1967; Solomon, 1983). Literature on self-concept supports the notion that consumers' thoughts and feelings about themselves relate to their consumptive behaviors (Sirgy, 1982; Sirgy & Su, 2000). As Grubb and Grathwohl (1967) have argued, a consumer is likely to purchase products and brands to retain or enhance his or her self-concept (cf. Sirgy, 1982). This concept is explained by symbolic interaction theory, which highlights that consumers value symbolic meanings of a brand or product and associate such meanings with their consumption behavior (Leigh & Gabel, 1992; Solomon, 1983). Importantly, symbolic interaction theory proposes three fundamental elements: "(1) a consumer's self-concept is based on perceptions of the responses of others, (2) a consumer's self-concept functions to direct behavior, and (3) a consumer's perception of the responses of others to some degree reflects those responses"

(Solomon, 1983, p. 320). Although researchers have shown how consumers apply self-concept in cognitively evaluating symbolic product cues, or "stereotypic images of types of users of a product" (Sirgy et al., 2005, p. 331), an appropriate instrument for directly assessing the symbolic meaning that products and brands hold for consumers was not developed until Sirgy (1982) proposed the concept of self-image congruence.

2.4.2 **Self-image congruence.** Dolich (1969) stated, "products and brands have images that are perceived by individuals as having various symbolic meanings" (p. 80). Among the numerous researchers who have studied how symbolic meaning of brands or products affects consumers' behavior (e.g., Mazodier & Merunka, 2014; Sirgy, Grewal, & Mangleburg, 2000), Sirgy (1982) has argued that individuals prefer certain brands over others because they would like to be perceived themselves as being similar to others who use the same brands or products (e.g., social consistency, social-approval). For example, if the typical user of Nike sportswear may want to be perceived to be sporty, active, inspirational, or innovation, then individuals who see themselves as sporty, active, or innovative in their self-concept are likely to be attracted to Nike's products. As a specific case, Birdwell (1968) identified that an individual's perception of his or her car is likely to be congruent with his or her self-concept. Likewise, marketing scholars have indeed revealed that the degree to which a consumer's self-concept matches with the image of a given brand or product is likely to influence his or her attitudes toward the brand or product (Sirgy, 1982, Sirgy et al., 2000). In short, the symbolic meaning that a product or brand holds for a consumer is crucial, and Graeff (1997) has claimed that a product's symbolic image can be more important for consumers than its physical attributes.

In order to measure the symbolic meanings of products and brands for consumers, Sirgy (1982) proposed the concept of *self-image congruence*, the theory of which holds that products and brands are more likely to influence a consumer if he or she believes that the images of those products and brands match with his or her self-concept. Self-image congruence has been identified as a significant predictor of consumers' attitudes toward brands, brand preferences, purchase intention, and loyalty (Jamal & Al-Marri, 2007; Liu, Li, Mizerski, & Soh, 2012; Mazodier & Merunka, 2014; Usakli & Baloglu, 2011). Graeff's (1997) study on how consumers' self-image congruence affects their evaluation of brands, for instance, indicated that higher congruence between brand image and self-image favorably influenced consumers' attitudes toward the brand. Later, Jamal and Goode (2001), in the context of jewelry market, found that self-image congruence was a significant predictor of consumers' brand preferences and satisfaction, while Kang et al. (2012), in the context of hospitality management, observed and self-image congruence with brands was likely to prompt favorable attitudes toward the brand. As shown, self-image congruence significantly influences consumers' behavior toward brand attitudes and likelihood to purchase.

In research on consumer behavior in the context of sports, however, only few studies have been conducted on the concept of self-image congruence (e.g., Han, 2006; Kwak & Kang, 2009; Sirgy, Lee, Johar, & Tidwell, 2007; Wu & Chalip, 2013) despite its clear importance in consumer behavior and its in-depth coverage in various other fields of marketing. Among those few studies, Kwak and Kang's (2009) research on how self-image congruence affects purchase intentions revealed that consumers buy and use sports products with symbolic meaning that matches their self-concept. Han (2006) also

identified that consumer's perceived symbolic meaning of sportswear played a significant role in influencing consumer behavior (e.g., brand preference) toward sportswear products. In another study, Sirgy et al. (2007) sought to identify whether a consumer's self-image congruence with sponsored sports events positively influenced their brand loyalty. The findings suggested a positive relationship between self-image congruence with sponsors and, in turn, brand loyalty to them. In sum, it is possible that self-image congruence is associated with consumer's attitudes toward brands and their purchase intentions in the context of sports.

In the context of co-branding, consumers value co-branded sports products to fulfill their symbolic meaning (Wu & Chalip, 2013), which they consume in order to gain status (Collins & Su, 2017). Current co-branding literature lacks a study that examines a consumers' perceptions of self-image congruence in the case of co-branding used to increase the consumers' symbolic meaning of products or brands, except for one study conducted by Wu and Chalip's (2013). Although Wu and Chalip's (2013) research on the effect of co-branding in the sport manufacturing context identified that the symbolic meaning of co-branded sports products positively influenced sport consumer behavior, their study did not account for some critical factors in co-branding (e.g., perceived brand fit between partnering brands). Also, the researchers did not include the functional aspects of brands and products to examine how the factors affect sport consumer behavior. As research on co-branding in the context of sports to date has indicated that self-image congruence might play a vital role in influencing consumer behavior (Wu & Chalip, 2013), such as purchase intentions toward co-branded sports products, it is expected that consumers perceiving higher levels of self-image congruence on co-

branded sports products will be likely to have a favorable attitude towards and purchase intentions of the co-branded products. Collectively, this dissertation examines whether co-branding strategies can enhance sport consumer's self-image congruence, and thus influencing their consumer attitudes towards and purchase intentions of co-branded sports products.

2.5 Perceived Product Quality of Co-branding

Perceived quality has long been considered as a global evaluation of a product or brand (Holbrook & Corfman, 1985). Zeithaml (1988) has defined the *perceived quality of a product* as "the consumer's judgement about a product's overall excellence or superiority" (p. 3). In addition, as Homburg, Schwemmle, and Kuehnl (2015) have stated, a product's functional attributes reflect "the consumer's perceptions of a product's ability to fulfill its purpose" (p. 44). In this study, the functional attributes can be captured using multiple facets involving financial costs, physical product quality, and utilitarian benefits as well as esthetics facet of product (Homburg et al., 2015; Sirgy & Samli, 1985).

A consumer's perception of product quality also has a positive association with his or her product preference, customer satisfaction, and brand loyalty (Aaker & Jacobson, 1994; Zeithaml, 1988). Scholars have empirically investigated the effect of perceived product quality on consumers' purchase intentions (Carman, 1990; Monroe & Krishnan, 1985). They found that there is a positive relationship between perceived product quality and consumer's purchase intentions.

Perceived product quality involves a subjective evaluation that does not take objective or experiential quality of a product into account. In fact, some researchers have argued that consumers evaluate the functionality of certain products by only visualization

(Radford & Bloch, 2011; Hoegg & Alba, 2011). For example, consumers may judge a new product's functional features based on an advertisement for the product, which in turn influences their overall perceptions of the product's functionality. Because perceived product quality influences consumers' attitudes and purchase intentions regarding products (e.g., Aaker & Jacobson, 1994), its evaluation by only visualization could be important in measuring the perceived quality of a product or brand.

In the context of co-branding, the concept of perceived product quality has received a little attention by researchers (e.g., Rao & Ruekert, 1994). More specifically, Rao and Ruekert (1994) examined and compared the perceived quality of single-branded and co-branded products, for results indicating that perceived product quality is likely to increase when two brands are allied. In their research, they have not considered the impact of perceived product quality on consumers' attitudes and purchase intentions. However, it is important to note that Helmig et al. (2008) recognized the importance of the quality of the co-branded product and indicated a further investigation. In addition, Andres (2003) and Helmig et al. (2008) consistently suggested that the higher quality of the co-branded product may be pivotal to the success of co-branded products.

Moreover, based on the review of literature in the sport manufacturing brands context, researchers have not yet examined the influence of the perceived product quality of co-branded sports products and investigated the relationships between the quality of co-branded sports products and consumer behavior (e.g., attitude and consumptive behavior). Given the importance of the perceived quality of co-branded products in the purchasing process (Andres, 2003; Helmig et al., 2008), research in the context of sports should evaluate how consumers' perceptions of product quality might influence their

attitudes and purchase intentions regarding co-branded sports product. In addition, as there is a lack of research in co-branding literature in the context of sports, more research is needed to explore the effect of co-branding that involves sports manufacturing brand and consumer's perception of perceived product quality pertaining to sports co-branding.

2.6 Perceived Co-brand Image Fit

A consumer's perception of co-brand image fit between partnering brands can influence his or her evaluation of a co-branded product (Park et al., 1996; Riley, Charlton, & Wason, 2015; Simonin & Ruth, 1998). In co-branding, *perceived co-brand image fit* describes "how the participating products or brands are perceived to be a suitable combination to each other, and is often used interchangeably with terms like congruence, similarity, or match up" (Riley et al., 2015, p. 271). Research has suggested that perceived brand fit for constituent brands is a critical factor in consumers' attitudes toward co-branded products (Graeff, 1997; Simonin & Ruth, 1998) in which high perceived fit positively affect increased sales (Dickinson & Heath, 2006; Uggla, 2004).

Scholars have commonly suggested that product image fit, and brand image fit are the most important constituent concepts of perceived co-brand image fit in the context of co-branding (e.g., Riley et al., 2015; Simonin & Ruth, 1998). In particular, Simonin and Ruth (1998) identified that product image fit, and brand image fit played a vital role in enhancing consumers' attitudes toward co-branded products. More recently, Bouten et al. (2011) suggested that the brand image fit between partnering brands and co-branded products are important aspects since consumers can perceive the intended joint concept (i.e., the fit between co-brands and the product). The following subsections review the notions of product image fit and brand image fit as presented in literature on co-branding.

***2.6.1* Product image fit.** The notion of product image fit originally emerged in research on brand extension (e.g., Aaker & Keller, 1990), in which product image fit has tended to relate to the similarity of product categories linked by a parent brand and its brand extension (Park, Milberg, & Lawson, 1991). In a similar vein, *product image fit* in the co-branding context refers to "the perception of relatedness of the product categories implied by the co-brand" (Singh et al., 2014, p. 150), as perhaps most readily exemplified by co-brands shared by firms in similar tech industries (e.g., computers and cameras). However, many of today's co-branding arrangements represent collaborations between brands in completely dissimilar product categories. The co-branded Apple Watch Nike+, for instance, is a co-branding partnership between a tech brand (i.e., Apple) and a sports brand (i.e., Nike). Fitbit Ionic: Adidas Edition, Puma with Ferrari, and Adidas with Stella McCartney are other examples in which the original conceptualization of product image fit may need to be modified to accommodate current trends in co-branded products. In support of that argument, Singh et al. (2014), who found no significant relationship between product fit and consumers' attitudes toward co-branded products, have argued that product image fit might not be a significant factor of the success of co-branding.

Bouten et al. (2011) have proposed a concept of product image fit that is more adequate for the context of co-branding. Examining the product image fit between the image of co-brands and a new product, they argued that "the fit of a new product with an existing brand may also be determined through other processes than comparing features of existing products with those of the new product" (p. 7). Following in the footsteps of that study, this dissertation attempts to reconceptualize product image fit to capture the

suitability of a consumer's perceptions of the combined images of co-brands and co-branded products.

2.6.2 **Brand image fit.** Co-branding is evaluated based on the images of two or more partnering brands (Varadarajan, 1986; Simonin & Ruth, 1998). Briefly, *brand image* refers to a consumer's perceptions of a brand that "reflect consumer associations of the brand in memory" (Simonin & Ruth, 1998, p. 33). When a product presents two or more brands, consumers are likely to evaluate both partnering brands in addition to existing individual's brand-specific associations in consumer's mind (Broniarczyk & Alba, 1994). For example, when co-branded sports product of Nike iPod + was released (co-branding between Nike and Apple), people are also likely to evaluate the co-branded sports product based on the shared image of co-branding. Consumers' evaluation of the co-branded product are not just based on their positive image of each Nike and Apple brand. For that reason, the images of both brands need to be somewhat consistent in order to trigger desirable beliefs and positive evaluations that allow the success of co-branded products (Keller & Aaker, 1992, Simonin & Ruth, 1998); in contrast, a poor brand image fit is likely to raise concerns about the paring of two brands (Simonin & Ruth, 1998). Therefore, in co-branding, *brand image fit* is defined as the complementary nature and consistency of images between partnering brands (Bouten et al., 2011; Simonin & Ruth, 1998). Researchers interested in co-branding have observed that consumers rate products more positively when images of the two brands are complementary and consistent, which in turn leads to greater brand image fit. Altogether, because greater brand image fit prompts more stronger evaluations of co-branded products (Aaker & Keller, 1990; Simonin & Ruth, 1998), perceived brand image fit may also be a significant factor of the

success of co-branded sports products. Based on previous findings, this dissertation proposes that perceived co-brand image fit, including both product image fit and brand image fit, between brands positively influences consumers' attitudes toward co-branded products and their purchase intention. Figure 2.1 presents the proposed concept of brand fit in this dissertation.

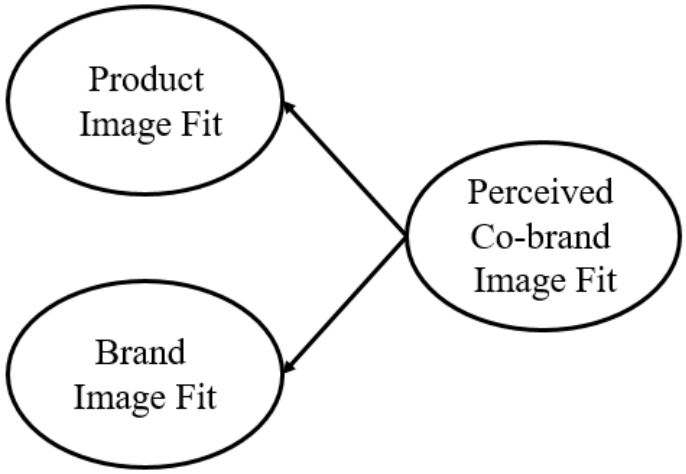


Figure 2.1 Proposed concept of perceived co-brand image fit in co-branding.

2.7 Consumer Attitude and Purchase Intention

Attitude is "a learned predisposition to respond in a consistently favorable [or unfavorable] manner with respect to a given object" (Fishbein & Ajzen, 1975, p. 6). The concept of attitude relates to consumers' feeling about and evaluation of the pleasantness of products (Dabholkar & Bagozzi, 2002), and indeed, attitudes have been identified as directly influencing consumer intentions, including purchase intentions and word-of-mouth intentions (Ajzen & Fishbein, 1980). The relationship between attitudes and purchase intentions is grounded in the theory of reasoned action (Ajzen & Fishbein,

1970), which implies that consumers' attitudes toward brands will likely influence their purchase intentions. The theory also suggests that an individual's behavioral intention is dependent on his or her attitude about that behavior, which indicates that consumers' purchase intentions are a consequence of their attitudes toward brands (Pradhan, Duraipandian, & Sethi, 2016). A crucial premise of the framework between attitude and behavior is that a favorable attitude towards a product leads to increased consumptive behavior (Zaharia, Biscaia, Gray, & Stotlar, 2016).

According to the hierarchy of effects model (Lavidge & Steiner, 1961), a consumer's attitudes or feelings are created based on cognitive information processing, and subsequently stimulates desires in consumers (i.e., cognition–affection–behavior hierarchy). In line with that reasoning, a positive relationship is possible between consumers' attitudes and purchase intentions within the context of co-branding, especially after consumers are exposed to co-branded products. Researchers have shown that multiple cognition factors, including self-image congruence, perceived product quality, and perceived co-brand image fit, significantly influence one's attitudes toward co-branded products (Rao & Ruekert, 1994; Riley et al., 2015; Wu & Chalip, 2013). Based on the theory of reasoned action (Ajzen & Fishbein, 1970) and the hierarchy of effects model (Lavidge & Steiner, 1961), it is expected that there is a positive relationship among the cognition elements, attitude, and purchase intentions within the context of co-branding.

Despite the significance of the relationship between consumers' attitudes and purchase intentions, research on co-branding has scarcely examined that relationship between attitude toward the co-branded product and purchase intentions. Even in research

on the impact of co-branding on consumers' attitudes toward co-branded products, most studies have not accounted for the relationship between consumers' attitudes toward co-branded products and their purchase intentions (e.g., Simonin & Ruth, 1998; Singh et al., 2014). The lack of understanding the relationship may result from previous co-branding research that has primarily focused on the partner selection (e.g., fit between partnering brands).

In conclusion, investigating the relationship between consumers' attitudes toward co-branded products and purchase intentions is vital to better understanding whether attitude relates to behavioral intent in the context of co-branding. Based on these points and theories, this dissertation proposes that high perceptions of multiple factors (e.g., self-image congruence, perceived product quality, and perceived co-brand image fit) positively influence consumers' attitudes towards co-branded sports products, and thus, a consumer's favorable attitude towards the co-branded sports product is likely to increase their purchase intentions.

2.8 Summary and Research Hypotheses

This literature review has identified a few gaps in research on co-branding that warrant further study. First, research remains scarce on consumers' perceptions, including self-image congruence, perceived product quality, and perceived co-brand image fit, in relation to their impact on consumer attitudes and purchase intentions (i.e., product fit and brand image fit). Second, as little research has examined the relationship between consumers' attitudes toward co-branded sports products and their purchase intentions. Finally, two types of co-branding—symbolic and ingredient –have not been sufficiently examined within the context of sports manufacturer brands, and in particular,

no research has examined comparisons of different co-branding strategies: symbolic and ingredient co-branding. Based on these premises, the following hypotheses were formulated:

Hypothesis 1a: Under the context of symbolic co-branding, high self-image congruence will positively influence consumer attitude toward a co-branded sports product.

Hypothesis 2a: Under the context of symbolic co-branding, high self-image congruence will positively influence consumer purchase intention toward a co-branded sports product.

Hypothesis 3a: Under the context of symbolic co-branding, perceived product quality will positively influence consumer attitude toward a co-branded sports product.

Hypothesis 4a: Under the context of symbolic co-branding, perceived product quality will positively influence consumer purchase intention toward a co-branded sports product.

Hypothesis 5a: Under the context of symbolic co-branding, perceived co-brand image fit will positively influence consumer attitude toward a co-branded sports product.

Hypothesis 6a: Under the context of symbolic co-branding, perceived co-brand image fit will significantly increase consumer purchase intention toward a co-branded sports product.

Hypothesis 7a: Under the context of symbolic co-branding, there is a significant positive relationship between consumer attitude toward a co-branded sports product and purchase intention.

Hypothesis 1b: Under the context of ingredient co-branding, high self-image congruence will positively influence consumer attitude toward a co-branded sports product.

Hypothesis 2b: Under the context of ingredient co-branding, high self-image congruence will positively influence consumer purchase intention toward a co-branded sports product.

Hypothesis 3b: Under the context of ingredient co-branding, perceived product quality will positively influence consumer attitude toward a co-branded sports product.

Hypothesis 4b: Under the context of ingredient co-branding, perceived product quality will positively influence consumer purchase intention toward a co-branded sports product.

Hypothesis 5b: Under the context of ingredient co-branding, perceived co-brand image fit will positively influence consumer attitude toward a co-branded sports product.

Hypothesis 6b: Under the context of ingredient co-branding, perceived co-brand image fit will significantly increase consumer purchase intention toward a co-branded sports product.

Hypothesis 7b: Under the context of ingredient co-branding, there is a significant positive relationship between consumer attitude toward a co-branded sports product and purchase intention.

Hypothesis 8: Patterns of consumer perceptions will be significantly different depending on consumers who perceives co-branded sports products as either symbolic or ingredient co-branding.

*Hypothesis 8a***:** Consumers under the symbolic co-branding context will have a higher levels of self-image congruence than consumers under the ingredient co-branding context.

*Hypothesis 8b***:** Consumers under the ingredient co-branding context will have a higher levels of perceived product quality than consumers under the symbolic co-branding context.

To test hypotheses, this study developed a conceptual framework of co-branding strategies (Figure 2.2). The proposed framework can explain consumers' behavior in response to those different co-branding strategies. The framework describes the primary factors of consumers' perceptions of co-branded sports products, the relationship between their perceptions and attitudes toward co-branded sports products, and the relationship

between those attitudes and their purchase intentions of co-branded sports products.

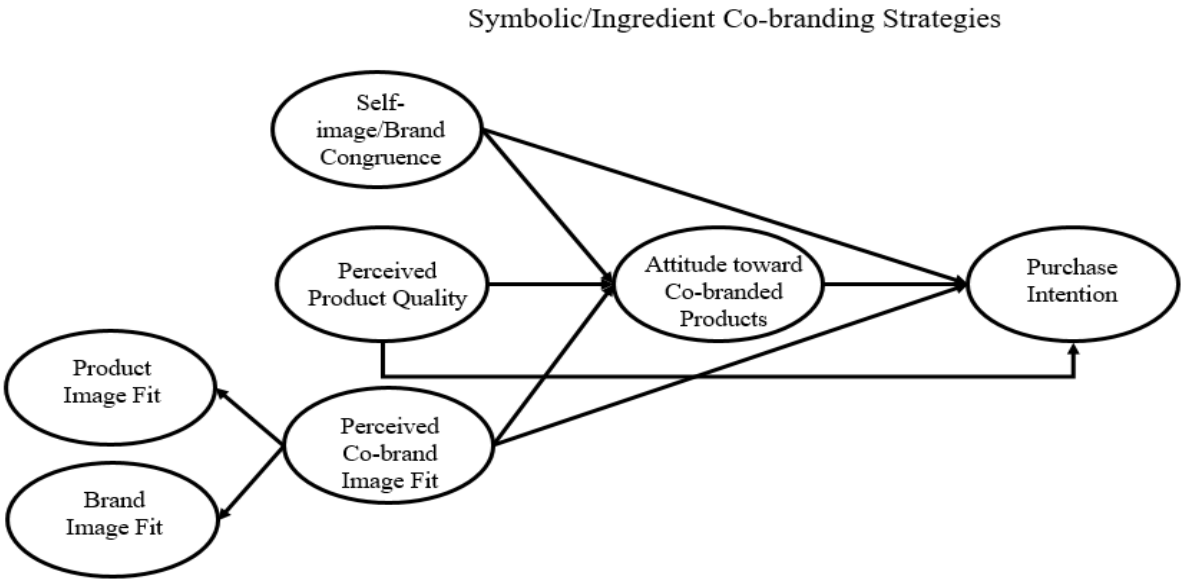


Figure 2.2 Proposed research model of the dissertation.

CHAPTER 3

METHOD

This study employed a scenario-based explanatory research design via a survey method. Participants were recruited to respond to a questionnaire based on two advertisements of a sports brand's fitness tracker: a single-branded fitness tracker and a co-branded fitness tracker. In the advertisements, an actual fitness tracker that's been sold in the current market was presented to participants. In order to obtain empirical data on co-branding conditions, co-branding pairs (a host brand and a partner brand) were determined based on a series of pretests (two separate pretests were conducted). Afterwards, self-administered survey method was conducted in two phases for main data collection. Phase 1 consisted of a distracter task, which was included in a main data analysis (the first advertisement for a single-branded fitness tracker). Including the distracter task is important in that it can control for possible imagery-evoking effects of the brand-dominated perceptions. In addition, this approach reduced ambiguity for participants who are not familiar with co-branding. Phase 2 consisted of the study manipulations from pretests 1 and 2 (the second advertisement for a co-branded fitness tracker), as well as responses to the independent and dependent measures. After data were collected, data analysis was performed utilizing various statistical techniques, including confirmatory factor analysis (CFA), multi-group invariance analysis, mediation, and moderated-mediation analysis.

Overall, this chapter presents the methodology employed in this study in the following order: (1) overall procedure of empirical survey research, (2) selection of a product type for the overall analyses, (3) pretest 1 of the selection of testing stimuli, (4)

pretest 2 of the selection of testing stimuli, (5) research participants, (6) manipulation of symbolic and ingredient co-branding strategies, (8) instruments and preliminary study, and (9) data analysis. Figure 3.1 illustrates a detailed research procedure proposed in the dissertation.

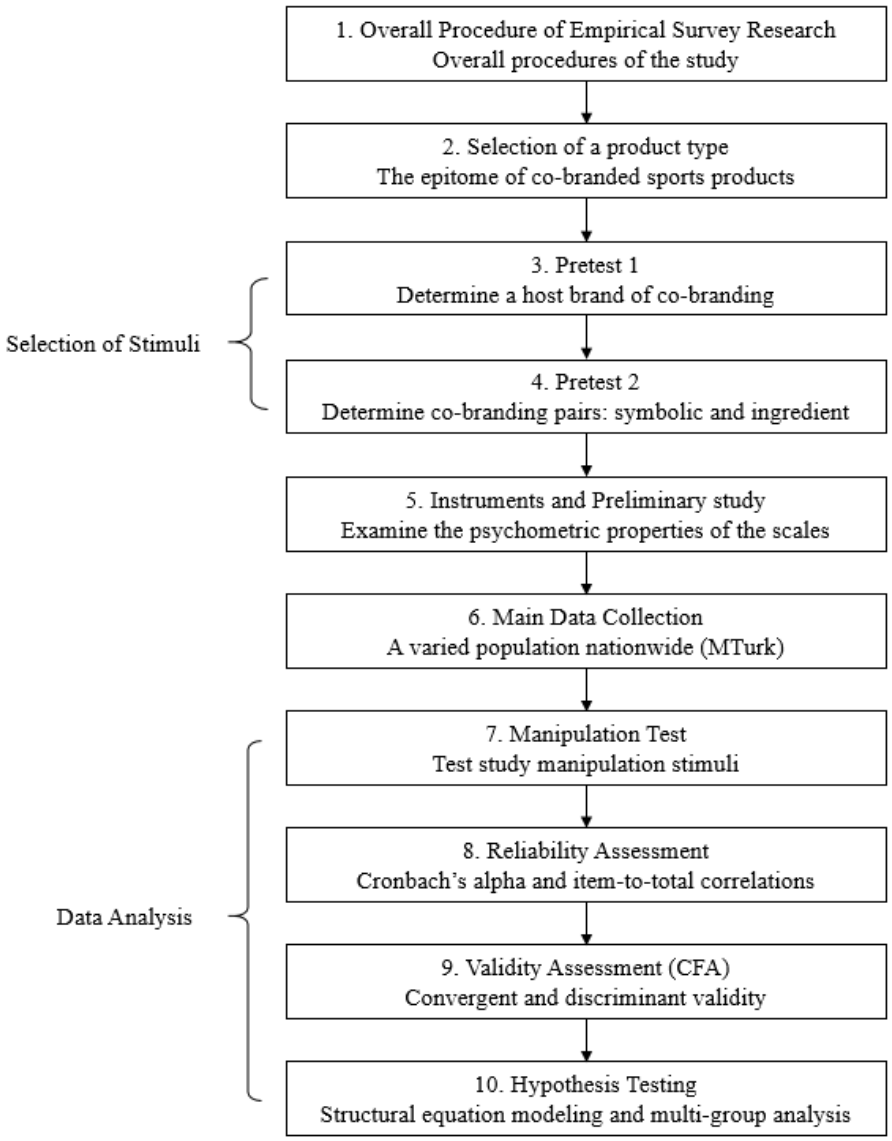


Figure 3.1 Research procedures for conducting the dissertation.

3.1 Overall Procedure of Empirical Survey Research

Self-administered web-based survey was conducted. Specifically, an online version of the questionnaire was designed with two advertisements of a sports brand's fitness tracker using Survey Monkey (i.e., a single-branded fitness tracker and a co-branded fitness tracker), and data collection was processed via MTurk and draw from a large national consumer database. Prior to participating in the online survey, the respondents were automatically screened in MTurk before taking the survey. Target respondents should be over 18 years old and currently live in the United States. Those who do not meet these criteria were excluded from taking the survey. The qualified potential respondents were asked whether they have ever owned an item in the selected category (i.e., fitness trackers). If they have ever purchased the product, they were asked to give the name and the price of the product at the time of actual purchasing. Participants who have never purchased the product were asked to rate whether they have some level of interest toward wearable sports devices (e.g., fitness trackers, wireless headphones, etc.). Those who rated lower than a midpoint of a 7-point Likert-type scale in interest toward wearable sports devices were excluded from the survey.

Then, for each of the presenting advertisements, respondents were shown a picture of the fitness tracker under the Under Armour brand (selected from pretest 1), accompanying text in which the expected price and features of the product were presented (Figure 3.2). To stimulate real market situation, Under Armour's fitness tracker, the Under Armour UA Band, was used, since this fitness tracker has not been involved in a co-branding partnership compared to other fitness trackers (e.g., Apple

Watch Nike+ and Fitbit Ionic: Adidas edition). This device was released in 2016. The same product was shown along with selected co-branding pairs based on a series of pretests (fictitious co-branding partnership). In the first advertisement, respondents were asked to rate their perceptions of the Under Armour's fitness tracker (self-image congruence, perceived product quality, and attitude toward the product). After respondents have completed the questions regarding the single-branded fitness tracker, they continued to the next step.

Figure 3.2 First advertisement in the questionnaire.

In a subsequent section, respondents were presented with a scenario that explains that Under Armour is planning to establish a co-branding partnership. Respondents were asked to choose one best partner brand out of six potential co-branding partners from pretest 2 (see Figure 3.3). After that, the survey automatically lead them to show the definitions of ingredient and symbolic co-branding strategies, and the participants responded to a semantic differential scale based on their selected co-branding pairs, with the endpoints of 1 being perceived as symbolic and 7 being perceived as functional co-branding pair.

Figure 3.3 Partner brand selection approach.

Respondents were then given the second advertisement (see Figure 3.4) with a statement explaining that the host sport brand and their chosen partner brand is planning to manufacture a fitness tracker as a form of co-branding strategy. In the advertisement, the expected price and features of the product were also described. In the rest of the questionnaire, respondents were asked to rate their perceptions of the co-branded fitness tracker (i.e., self-image congruence, perceived product quality, and perceived brand fit) as well as their attitudes and purchase intentions toward the product (see Appendix 1).

Figure 3.4 Second advertisement in the questionnaire.

3.2 Selection of a Product Type for the Overall Analyses

This study used wearable sports device (i.e., wristwatch type of fitness trackers) as the product type under the explanatory study design. This type of wristwatch was also used in the previous co-branding research (e.g., Riley et al., 2015). In addition, a wearable sports device (i.e., fitness tracker) is realistic in order to ensure valid response because sports manufacturing brands in the wearable sports device market has teamed up with other brands (e.g., Apple Watch Nike+ and Fitbit Ionic: Adidas Edition). It is expected that wearable sports devices could allow for high variance (e.g., homogenous sample) among research variables in this study (e.g., self-image congruence, perceptions of quality, attitude) since wearable sports devices, such as fitness trackers, are popular among both men and women of various age groups. More specifically, if this study used sport equipment as a product type (e.g., soccer shoes, protective gear, and sports balls), it may be likely that data would be skewed to younger population with male. Thus, it may indicate that this product type (i.e., fitness tracker) could induce a homogenous sample, which could prevent the possible issue of heteroscedasticity. For this reason, it could provide a useful and interesting context for testing proposed hypotheses. Considering these premises, wearable sports devices (e.g., fitness tracker) are an appropriate and representative product category and was considered the stimulus product category for this dissertation.

3.3 The Selection of Stimuli

Two important factors are considered in the selection of testing brands in this study: relevance and awareness. First, the brands chosen have to be relevant for study participants to avoid the problem of low brand awareness (Aaker & Keller, 1990).

Second, low quality brands would not be realistic (James, 2006). It is possible that potential research participants cannot recognize brands due to low brand awareness. Considering these factors, pretest 1 was conducted to select the most recognizable and familiar host sports brand. In pretest 2, appropriate symbolic and ingredient co-branding pairs were identified based on individual's selection which pairs are the most symbolic fit or functional fit (between a host sport brand and a partner brand). Based on the following series of pretests, co-branding stimuli were determined.

3.3.1 **Pretest 1.** A pretest 1 was conducted to elicit the most recognizable and familiar sport brand. To that end, ten sports manufacturing brands were initially selected based on a report listing the top sport brands among U.S. consumers as follow: Nike, Adidas, Under Armour, New Balance, Skechers, Reebok, The North Face, Champion, Converse, and Puma (Statista, 2014). A convenience sample of college students (n = 146) from a large southeastern university was recruited and asked to rate how recognizable each brand is and how familiar they are with these brands using Aaker's (1996) brand awareness items.

Average age of the pretest 1 respondents was 23.12 years old, and 66% of the respondents were male. The reliability of brand familiarity and brand awareness was examined and was found to meet the minimum Cronbach's alpha values of .70 suggested by Nunnally and Berstein (1994). Table 3.1 presents the sports brands with the highest scores in familiarity and awareness scale. As a result, the highest scores on the brand awareness were as follow: Nike (M = 6.08), Adidas (M = 6.00), Under Armour (M = 5.60), New Balance (M = 5.22), Reebok (M = 5.27), Champion (M = 5.40), Puma (M = 5.37), Converse (M = 5.46), The North Face (M = 5.59), and Skechers (M = 5.20).

However, it is important to note that co-branded wearable sports devices (Nike and Adidas) have been in the current market. Apple Watch Nike Plus was released in 2016 and Fitbit Ionic: Adidas edition was launched in 2018. These two products have been widely exposed by consumers in which consumers' perceptions of co-branding strategies towards wearable sports devices by Nike and Adidas may be biased. To avoid any potential bias in perceptions, Under Armour sports brand was chosen for the host brand of co-branding strategy in this dissertation.

Table 3.1 Perceived brand awareness and brand familiarity from pretest 1

Sports Brands	Pretest 1 (n = 146) (Consumer's brand awareness with sports brands; α = .91)	
Nike	M = 6.08	SD = 1.33
Adidas	M = 6.00	SD = 1.41
Under Armour	M = 5.60	SD = 1.60
The North Face	M = 5.59	SD = 1.59
Converse	M = 5.46	SD = 1.66
Champion	M = 5.40	SD = 1.65
Puma	M = 5.37	SD = 1.69
New Balance	M = 5.28	SD = 1.74
Reebok	M = 5.27	SD = 1.72
Skechers	M = 5.20	SD = 1.75

***3.3.2* Pretest 2.** To select partner brands to present ingredient co-branding and symbolic co-branding, a different convenience sample (n = 181) was recruited through Amazon Mechanical Turk. The average age of the respondents were 33.65 years old and

68% of the respondents were female. Respondents were asked to read the definitions and examples of ingredient and symbolic co-branded products and be shown 20 brands from the Forbes list of "The World's Most Valuable Brands" in 2018 (i.e., Apple, Google, Microsoft, Facebook, Amazon, Coca-Cola, Samsung, Disney, Toyota, AT&T, McDonald's, GE, Mercedes-Benz, Intel, Louis Vuitton, Cisco, IBM, NIKE, Verizon, and BMW). Then, they estimated which brands they would expect to see associated with the selected sports brand from the pretest 1 (i.e., Under Armour), and be asked to rate whether each co-branding pair is symbolic or functional (ingredient) by responding to one semantic differential item (i.e., 1 as symbolic and 7 as functional). Table 3.2 shows the results of the pretest 2.

Unlike the pretest 1, because co-branding pairs for symbolic and ingredient co-branding strategy are hypothetical co-branding examples, and people may not be familiar with the study's concepts. In addition, it is important that various people's perceptions to select the co-branding pairs are necessary to exhibit generalizability. To that end, participants in the pretest 2 were recruited via Amazon Mechanical Turk because the MTurk online service accurately represents the U.S. population that researchers can access to obtain (Ipeirotis, 2013; Obal, 2014).

Table 3.2 Consumer's perceptions of symbolic and functional co-branding image

Host Brand	Partner Brands	Perceptions of Symbolic and Functional
Under Armour	Amazon	5.01
	Google	4.91
	Microsoft	4.80
	Nike	4.64

Table 3.2 Consumer's perceptions of symbolic and functional co-branding image (Cont.)

Host Brand	Partner Brands	Perceptions of Symbolic and Functional
	Intel	4.61
	IBM	4.49
	Samsung	4.47
	Cisco	4.40
	AT&T	4.40
	Apple	4.33
	General Electronic	4.33
	Facebook	4.30
	Verizon	4.26
	Toyota	4.08
	Mercedes-Benz	3.91
	BMW	3.87
	McDonald	3.83
	Coca-Cola	3.65
	Disney	3.32
	Louis Vuitton	3.02

Based on the results of the pretest 2 (e.g., highest score on symbolic and ingredient co-brands), the top three highest scores on the semantic differential item were Amazon (M = 5.01), Google (M = 4.91), and Microsoft (M = 4.80), indicating that these co-branding pairs are perceived as the most ingredient co-branding pairs. On the other

hand, the three more symbolic scores were Louis Vuitton (M = 3.02), Disney (M = 3.32), and Coca-Cola (M = 3.65), indicating that these co-branding pairs are perceived as the most symbolic co-branding pairs. Each three co-branding pairs of the most symbolic partnership and ingredient partnership were determined to display for the main study. It is expected that there is more likely to exhibit generalizability when participants are given various co-branding pair options. Subsequently, this dissertation used these six co-branding pairs as partner brands of the host brand (Under Armour) for the main study. It is expected that there is more likely to exhibit internal validity and generalizability when participants are given various co-branding pair options.

3.4 Participants

The sample size is determined based on the item-to-response ratio in which the range of item-to-response is from 1:4 to 1:10, which indicates that at least four participants per item should be used to perform structural equation modeling analysis (Hinkin, 1995). In this dissertation, there were 54 total items in the questionnaire, including the items for self-image congruence, perceived product quality, perceived brand fit, consumer attitude, and purchase intention. Consequently, 216 participants (54 x 4) were the minimum sample size.

After obtaining approval from the institutional review board, a preliminary study was first be conducted to examine the psychometric properties of the scales before collecting a main data. In the main study, the target population for this study should be over 18 years old and currently live in the United States. The qualified potential respondents were asked whether they have ever owned wearable devices such as fitness trackers. In addition, participants who have never purchased the product were asked to

rate whether they have some level of interest in fitness trackers. Those who rated higher than a midpoint of a 7-point Likert-type scale was qualified.

Amazon's Mechanical Turk (MTurk) was used in order to collect a varied population nationwide. MTurk is known as a crowd-sourcing web service that enables researchers to recruit potential survey participants. More importantly, it is reported that more than 500,000 participants across 90 countries are registered as potential users of Amazon MTurk. Since the MTurk online service accurately represents the U.S. population that researchers can access to obtain (Ipeirotis, 2013; Obal, 2014), data collection using MTurk would be a convenient option to gather a greater number of survey participants who are representative of the U.S. population. Due to its various advantages, studies in management, psychology, and sport management have utilized this means of data collection (Larkin & Fink, 2019; Paolacci, Chandler, & Ipeirotis, 2010). This has been recognized as a reliable method for recruiting a high-quality sample and data collection (Buhrmester, Kwang, Gosling, 2011; Larkin & Fink, 2019). However, there are two general concerns about the use of online data collection related to sample integrity and data quality. To avoid potential concerns and increase data quality, two attention questions that have a fixed answer were included in the middle of questionnaire (i.e., please answer 'Strongly Agree', if you live in the U.S., select 'Strongly Agree'). Smith, Roster, Golden, and Albaum (2016) argued that including these questions can identify whether or not research participants pay attention on the survey. Thus, those who do not select the correct answer for these questions were excluded.

3.5 Instruments

This study examined consumer responses to co-branding strategies (symbolic versus ingredient) in the context of sport. Structural relationships were tested among the constructs including self-image congruence, perceived product quality, perceived co-brand image fit, consumer attitude, and purchase intention. All constructs and items were derived from prior research and were modified for the purpose of this study.

3.5.1 **Self-image congruence.** Respondents were given a statement to evoke their perceptions of their self-image congruence (between self and brand/product). The statement was adapted from Sirgy and Su's (2000) study and modified for the context of a co-branded fitness tracker. The scenario statement is as follows:

"Take a moment to think about the co-branded fitness tracker. Think about the people who would use the co-branded fitness tracker. Imagine those consumers in your mind and then describe them using one or more adjectives such as, modern, classy, athletic, stylish, sexy, high status or whatever personal adjectives you would use to describe the user of the co-branded fitness tracker. Once you have done this, indicate your agreement or disagreement with the level of congruence or non-congruence between the co-branded sports product and your self-image."

After reading this scenario, participants were asked to rate the extent of their agreement with self-image congruence items. Table 3.3 presents a list of the items to measure self-image congruence in the context of co-branding. The validity of this measurement has been widely supported by previous research as Cronbach's alpha values were greater than .70 (see Kang et al., 2012; Sirgy et al., 1997). Items were anchored by a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree).

Table 3.3 Scale modifications of self-image congruence

Sirgy and Su (2000)	Revised
1. This destination x is consistent with how I see myself.	1. Using the co-branded fitness tracker is consistent with how I see myself.
2. This destination x is consistent with how I like to see myself.	2. This co-branded fitness tracker is consistent with how I would like to see myself.
3. This destination x is consistent with how I believe others see me.	3. This co-branded fitness tracker is consistent with how I believe others see me.
4. This destination x is consistent with how I would like others to see me.	4. This co-branded fitness tracker is consistent with how I would like others see me.

***3.5.2* Perceived product quality.** Previous research on co-branding has examined whether the perceived product quality of co-branded products is higher than that of a single-branded product (e.g., Rao et al., 1998). The researchers have primarily considered aspects of the functional quality of products such as workmanship quality, durability, service, and overall quality (e.g., Rao et al., 1998; Besharat, 2010). It is important to note that consumers are likely to perceive both the functional and the aesthetic qualities of products. Therefore, some modifications of existing measures were made to develop the instruments most appropriate for this dissertation. Prior research on the consumer's

perceived product quality has largely focused on the product's extrinsic cues (e.g., price and brand; Dodds & Monroe, 1985). However, the proposed measures for perceived product quality in this study includes the product's intrinsic and extrinsic cue (e.g., intrinsic cues include physical product quality and extrinsic cues include price). Specific items were selected from both Sweeney and Soutar's (2001) and Homburg et al.'s (2015) studies. These factors evidenced good internal consistency and validity as Cronbach's alpha values were greater than .80 and factor loadings ranged from .70 to .91 (see Homburg et al., 2015; Sweeney & Soutar, 2001). Additionally, items regarding aspects of price were added. Specifically, nine items used to measure perceived product quality were created. These items were modified to reflect the co-branding context. Table 3.4 presents a list of the items to measure perceived product quality for this dissertation. All items were anchored by a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree).

Table 3.4 Scale modifications of perceived product quality

Sweeney and Soutar (2001)	Revised
Quality measures	
1. has consistent quality.	1. The co-branded fitness tracker should have consistent quality.
2. is well made.	2. The co-branded fitness tracker should be well made.
3. has an acceptable standard of quality.	3. The co-branded fitness tracker should have an acceptable standard of quality.
4. would perform consistently.	4. The co-branded fitness tracker would perform consistently.

Table 3.4 Scale modifications of perceived product quality (Cont.)

Homburg et al. (2015)	Revised
Aesthetics measures	
1. The product is visually striking.	1. The co-branded fitness tracker is visually striking.
2. The product is good looking.	2. The co-branded fitness tracker is good looking.
3. The product looks appealing.	3. The co-branded fitness tracker looks appealing.
Sweeney and Soutar (2001)	Revised
Price measures	
1. is reasonably priced.	1. The co-branded fitness tracker is reasonably priced.
2. is a good product for the price.	2. The co-branded fitness tracker is a good product for the price.

3.5.3 **Perceived co-brand image fit.** This study used two sub-dimensions of perceived co-brand image fit including product image fit and brand image fit to measure overall perceived co-brand image fit (e.g., Bouten et al., 2011; Lee et al., 2016; Simonin & Ruth, 1998). Three items adapted from Bouten et al. (2011) were used to measure brand image fit. In addition, product image fit was measured using three items developed by Bouten et al. (2011). However, one item was omitted due to the fact that the item is somewhat ambiguous. The measures of product image fit and brand image fit have been

validated by previous researchers as Cronbach's alpha values were greater than .70 (see Bouten et al., 2011; Simonin & Ruth, 1998). Table 3.5 presents a list of the items to measure perceived co-brand image fit in the context of co-branding. Items were anchored by a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree).

Table 3.5 Scale modifications of perceived brand fit

Bouten et al. (2011)	Revised
Product fit	
1. I think the brand and the new product complement each other.	1. I think the co-brands of brand A and brand B and the new product complement each other.
2. I think the brand fits the brand.	2. I think the co-brands of brand A and brand B fit with the product.
3. I think the new product adds to the brand	3. Deleted
4. I think this is a very appropriate product for this brand.	4. I think this is a very appropriate product for participating co-brands of brand A and brand B.
Brand image fit	
1. I think these brands are consistent.	1. I think brand A and brand B have consistent image.
2. I think these brands are complementary.	2. I think brand A and brand B are complementary in their images.
3. I think the brands fit each other.	3. I think brand A and brand B images fit each other.

***3.5.4* Consumer attitude towards co-branded sport product.** Participants were asked to rate their overall attitude toward co-branded wearable sports devices as well as their intent to purchase. Regarding the measurement of attitude toward co-branded wearable sports devices, the study used 7-point bipolar semantic differential scales to measure consumer attitude (i.e., unappealing/appealing, bad/good, unpleasant/pleasant, unfavorable/favorable, and unlikable/likable; Spears & Singh, 2004). The reliability of the scale has been established by previous researchers as Cronbach's alpha values were greater than .70 (e.g., Spears & Singh, 2004).

***3.5.5* Purchase intention.** To measure the purchase intention of co-branded wearable sports devices (i.e., fitness tracker), items developed by Gwinner and Bennett (2008) and Speed and Thompson (2000) were adapted and modified. More specifically, two items were adapted from Gwinner and Bennett's (2008) study with two additional items derived from Speed and Thompson (2000) to increase construct reliability. The measures of Gwinner and Bennett (2008) have been validated by previous research as Cronbach's alpha values and factor loadings were greater than .90 and .70, respectively (see Biscaia, Correia, Rosado, Ross, & Maroco, 2013). Also, the items for Speed and Thompson (2000) have been validated with factor loadings ranging from .90 to .93. Table 3.6 presents a list of the items to measure purchase intention in the context of co-branding. Items were anchored by a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree).

Table 3.6 Scale modifications of purchase intention

Speed and Thompson (2000)	Revised
Purchase intention	
1. This sponsorship would make me more likely to use the sponsor's product.	1. This co-branding would make me more likely to use the fitness tracker.
2. This sponsorship would make me more likely to consider this company's products the next time I buy.	2. Deleted
3. I would be more likely to buy from the sponsor as a result of this sponsorship.	3. I would be more likely to buy the co-branded fitness tracker as a result of this co-branding partnership.
Gwinner and Bennett (2008)	**Revised**
Purchase intention	
1. I would buy Panasonic products.	1. I would buy the co-branded (Brand A and Brand B) fitness tracker.
2. The next time I need to buy a product of this type, I would consider buying Panasonic.	2. The next time I need to buy a fitness tracker, I would consider buying the co-branded (Brand A and Brand B) fitness tracker.

3.6 Data Analysis

3.6.1 **Assumption tests.** Pertaining to the SEM, the assumption tests were conducted including normality, linearity, and homoscedasticity using SPSS version 22. Specifically, the assumption of normality was assessed based on the absolute skewness

and kurtosis values. Kline (2010) suggested that variables within these ranges are considered to have normal distribution: absolute value of Skewness within 3.0 and absolute value of Kurtosis within 10.0. The assumptions of linearity and homoscedasticity were assessed via the visual inspection of residual scatterplots and standardized residual plots. Multi-collinearity was assessed by evaluating the Tolerance and Variance Inflation Factor (VIF) values based on Kline's (2010) and Hair, Black, Babin, Anderson, and Tatham (2006) criterion that VIF values higher than 10.0 and tolerance value less than .10 indicate a problem of extreme multivariate collinearity.

3.6.2 **Reliability and validity tests.** The purpose of assessing reliability is to examine the consistency of a set of scores for the proposed scales. To examine the reliability of the scales, Cronbach's alpha and composite reliability (CR) were assessed based on the following criteria: Cronbach's alpha and CR are greater than 0.70 (Fornell & Larcker, 1981; Nunnally & Bernstein, 1994).

Convergent validity refers to the extent to which each instrument correctly measures the construct that they are supposed to measure (e.g., four items for measuring self-image congruence; Peter, 1981). Fornell and Larcker (1981) suggest that if the average variance extracted (AVE) score is greater than the .50 cutoff point, the variance captured by the construct is larger than the measurement error, indicating the measures can produce evidence of convergent validity. In addition, convergent validity was tested with an assessment of factor loadings which should be greater than .50 (Fornell & Larcker, 1981).

Discriminant validity generally refers to the degree to which a given construct is different from other constructs (e.g., the differences between self-image congruence,

perceived product quality, perceived brand fit) (Fornell & Larcker, 1981). Discriminant validity is determined if AVE values are greater than the square of correlations between pairs of all constructs (Fornell & Larcker, 1981).

3.6.3 **Hypothesis testing.** In order to investigate the proposed relationships and hypotheses, SEM was employed. It is widely applied and acknowledged that Anderson and Gerbing's (1988) two-step process is the most rigorous and systematic method to SEM across various fields, including marketing (Garbarino & Johnson, 1999). In the first step, the system of paths from the latent construct to the observed variables is viewed as the measurement model. The measurement model is equivalent to a CFA model. A CFA should play an important role in the validation process. Such an analysis was used for assessing convergent and discriminant validity in the seventh stage of this dissertation.

3.6.4 **Assessment of measurement model**. Using Mplus Version 8, data analysis was conducted in two phases: CFA and SEM. Both phases were based on the following goodness of fit criteria: comparative fit index (CFI) and tucker lewis index (TLI) are close to or greater than 0.95, the root-mean-square error of approximation (RMSEA) is close to or less than 0.08 (Hu & Bentler, 1999), standard root mean squared residual (SRMR) is close to or less than .08 and the ratio of chi-square statistic to the degree of freedom ($\chi 2/df$) is close to or less than 3.0 (Kline, 2010). These fit indices including CFI, TLI, RMSEA, and SRMR are the most commonly and widely used when reporting the fit of structural equation models (Kline, 2010).

3.6.5 **Structural model.** Prior to conducting analysis, two groups were created based on the level of participants' symbolic or ingredient perceptions towards respondent's selected co-branding pair. Then, to test hypotheses 1a-b, 2a-b, 3a-b, 4a-b,

5a-b, 6a-b, and 7a-b, multi-group structural equation modeling analysis (multi-group structural invariance analysis) was employed to examine the pattern of co-branding across two groups (i.e., symbolic group that participants perceive the given co-branding pair as symbolic co-branding versus ingredient group that participants perceive the given co-branding pair as ingredient co-branding) (i.e., self-image congruence, perceived product quality, perceived brand fit, attitude, and purchase intention).

To examine hypothesis 8 and its comparisons of respondents' perceived differences between symbolic and ingredient co-branding group, multi-group structural invariance analysis' Wald-test was further performed to see if there is a significant difference between the two groups. Additionally, multi-group structural invariance test is intended to compare structural relationships across groups. More specifically, multi-group structural invariance test was performed to examine whether relationships in the structural model were different between the two groups. To perform multi-group invariance analysis, two models (i.e., unconstrained and constrained models) were created that unconstrained structure weights to be freely estimated between groups and constrained structure weights to be equal between groups. If the results of the chi-square statistic between the unconstrained model and the constrained to be equal model showed significant statistical difference, there would be significant differences in the participants' perception between symbolic and ingredient co-branding pairs between groups.

CHAPTER 4

RESULTS

Overall, the purpose of this dissertation was to examine the proposed relationship among self-image congruence, perceived product quality, perceived co-brand image fit, attitude towards and purchase intentions of co-branded sports product (Research question #1). Further, examining differences in consumers' perceptions between symbolic co-branding and ingredient co-branding strategies was another purpose of the study (Research question #2). According to the methods in Chapter 3, the pilot study was conducted to test the psychometric properties of the scale. Following the pilot study, the main study was performed to test the measurement model and the proposed hypotheses through confirmatory factor analysis and multi-group structural invariance.

4.1 Pilot Study

A pilot study that includes two phases (single-branding and co-branding questionnaires) was conducted to test the psychometric properties of the scale, including self-image congruence, perceived product quality, co-brand image fit, attitude towards and purchase intention of the co-branded sports products. Plus, since the selected co-branding pairs including symbolic and ingredient co-branding strategies are hypothetical co-branding stimuli determined through a series of pretests, it is necessary to understand whether participants properly followed the study's purpose and stimuli. In addition, to have more diverse perceptions regarding the hypothetical co-branding pairs, consumers' perceptions with various age groups is important. In the questionnaire, several screening questions were first included to identify participants' eligibility. For example, participants were asked whether they possessed relevant product type (e.g., fitness tracker).

Additionally, participants who were not interested in the fitness tracker product were not qualified.

Data ($N = 168$) were collected via MTurk, which represents a national consumer population. In terms of race, the majority of the participants were Caucasian (72.5%), followed by Asian (11.4%), African-American (9.6%), Hispanic (5.4%), and other (1.2%). In addition, 57.7% were female and average age of the respondents were 31.3 years old. Participants received a small incentive ($0.15) for participation. Using Mplus version 8, confirmatory factor analysis (CFA) was performed to analyze pilot data.

Specifically, the values of factor loadings and AVE were greater than the cut-off point of .50, indicating a good convergent validity. Cronbach's alpha and composite reliability values were exceeded the recommended cutoff point of .70 (Hair et al., 2010), providing evidence of internal consistency of the scale. Overall findings of the measurement model test indicated adequate reliability and validity. Further, the measurement model indicated a good fit to the data (i.e., $\chi^2/df = 639.611/345 = 1.85$, RMSEA = 0.071, CFI = 0.924, TLI = 0.917, and SRMR = 0.067; Hu & Bentler, 1999). Since the internal consistency and validity of the scale were established, the main data collection was proceeded without any modifications. Table 4.1 presents the measurement model analysis of the pilot study.

Table 4.1 Measurement model of pilot study ($N = 168$)

Factor and Items	λ	α	C.R.	AVE
Self-image congruence with co-branding		0.88	0.86	0.61
1. Using the co-branded fitness tracker is consistent with how I see myself	0.765			
2. This co-branded fitness tracker is consistent with how I would like to see myself	0.814			
3. This co-branded fitness tracker is consistent with how I believe others see me	0.805			

Table 4.1 Measurement model of pilot study (N = 168) (Cont.)

4. This co-branded fitness tracker is consistent with how I would like others see me	0.744			
Co-branding's perceived product quality		0.93	0.93	0.60
1. The co-branded fitness tracker should have consistent quality	0.774			
2. The co-branded fitness tracker should be well made	0.794			
3. The co-branded fitness tracker should have an acceptable standard of quality	0.830			
4. The co-branded fitness tracker would perform consistently	0.793			
5. The co-branded fitness tracker is visually striking	0.783			
6. The co-branded fitness tracker looks appealing	0.776			
7. The co-branded fitness tracker is good looking	0.843			
8. The co-branded fitness tracker is a good product for the price	0.689			
9. The co-branded fitness tracker is reasonably priced	0.711			
Co-branding's co-brand image fit		0.88	0.89	0.57
1. I think the co-brands of brand A and brand B and the new product complement each other	0.734			
2. I think the co-brands of brand A and brand B fit with the product	0.768			
3. I think this is a very appropriate product for participating co-brands of brand A and brand B	0.770			
4. I think brand A and brand B have consistent image	0.743			
5. I think brand A and brand B are complementary in their images	0.778			
6. I think brand A and brand B images fit each other	0.766			
Co-branding's attitude		0.94	0.94	0.79
1. unappealing/appealing	0.860			
2. bad/good	0.910			
3. unpleasant/pleasant	0.886			
4. unfavorable/favorable	0.895			
5. unlikable/likable	0.893			
Co-branding's purchase intention		0.90	0.88	0.65
1. This co-branding would make me more likely to use the fitness tracker	0.727			
2. I would be more likely to buy the co-branded fitness tracker as a result of this co-branding partnership	0.861			
3. I would buy the co-branded fitness tracker	0.855			

Table 4.1 Measurement model of pilot study (N = 168) (Cont.)

4.	The next time I need to buy a fitness tracker, I would consider buying the co-branded fitness tracker	0.789

4.2 Main Study

The purpose of the main study was in two-fold: First, this study examined the proposed research model that includes consumers perceptions of self-image congruence, perceived product quality, co-brand image fit, attitude towards co-branded sports products, and purchase intention. Second, differences in the relationships between symbolic and ingredient co-branding strategies were investigated. Based on the pilot study for the psychometric properties, the main study was conducted to test hypotheses proposed in the research model.

4.2.1 **Main data collection and data screening**. Before examining the measurement, data screening and assumption tests were conducted. Data screening and assumption tests are important in order to increase the quality of the data. For this reason, multiple screening approaches were performed. First, a lack of variability in responses was eliminated. Second, participants who failed to respond a right answer for the attention questions were eliminated. Last, since the current study used the fictitious/hypothetical co-branding stimuli with a fitness tracker product, participants who were not interested in the fitness tracker product were not qualified in this study.

In the main data collection, a total of 651 participants were recruited to complete a self-administered survey with either symbolic or ingredient co-branding advertisement. More specifically, participants were recruited from MTurk service and asked to complete the survey, which included two sections: single-branding advertisement and co-branding

advertisement containing scales of the constructs (i.e., self-image congruence, perceived product quality, co-brand image fit, attitude towards co-branded sports products, and purchase intention). Participants received an incentive ($0.25) for their participation in the survey.

Of the 651 questionnaires collected, 105 questionnaires were eliminated due to incompletion and the lack of variability. Additionally, 85 questionnaires were eliminated based on results of the responses toward attention questions. Furthermore, 79 questionnaires revealed that participants were not interested in this study's product category so they were disqualified and eliminated from the study. The number of questionnaires after data screening was 382 with a response rate of 58.6%. Based on Hinkin's (1995) recommended item-to-response ratios of 1:4 (lower bound: 216 = 54 items x 4), the data collection successfully met the required sample size for this study.

Demographic characteristics of participants are depicted in Table 4.2. The collected sample included 52.5% female and 47.5% male. Age of all respondents ranged from 18 to 78 years (M = 34.42), and the majority of participants were Caucasian (67.3%), followed by Asian (12.6%), African-American (9.2%), and Hispanic (8.7%). The average income reported by respondents was $67,201.66 (Table 4.3). Additionally, the demographic characteristics of each co-branding conditions (participants who selected symbolic co-branding pairs and participants who selected ingredient co-branding pairs) were presented in Table 4.3.

Table 4.2 Demographic characteristics of the sample (N = 382)

Variable	Categories	N	%
Combined co-branding pairs (n = 382; Average age = 34.42)			
	Female	199	52.5%
	Male	180	47.5%
	Total	379 (3 missing value)	
	Caucasian	257	67.3%
	Asian	48	12.6%
	African-American	35	9.2%
	Hispanic	33	8.6%
	Other	5	1.3%
	Total	378 (4 missing value)	

Table 4.3 Sample characteristics by symbolic and ingredient co-branding pairs

Variable	Categories	N	%
Symbolic co-branding pairs (n = 126; Average age = 32.48)			
	Female	72	55.8%
	Male	56	43.4%
	Total	128 (1 missing value)	
	Caucasian	81	62.8%
	Asian	20	15.5%
	African-American	13	10.1%

Table 4.3 Sample characteristics by symbolic and ingredient co-branding pairs (Cont.)

Variable	Categories	*N*	%
	Hispanic	12	9.3%
	Other	1	0.8%
	Total	127 (2 missing values)	
Ingredient co-branding pairs (n = 249; Average age = 34.00)			
	Female	127	50.2%
	Male	124	49.0%
	Total	251 (2 missing values)	
	Caucasian	176	69.6%
	Asian	28	11.1%
	African-American	22	8.7%
	Hispanic	21	8.3%
	Other	4	1.6%
	Total	251 (2 missing values)	

4.2.2 **Assumption tests**. Assumption testing such as normality and collinearity in statistical analysis is the most important step because results are biased and not reliable when a violation of the assumptions occurs (Osborne & Waters, 2002). In this study, two assumptions were evaluated: normality of the data and multi-collinearity. To test normality of the data, each variable's histogram was first reviewed by visual inspection and the assessment of skewness and kurtosis were evaluated using SPSS 22. The histogram of each variable showed a normal distribution. In addition, values of all

skewness and kurtosis were within the suggested criteria (absolute value of 3; Kline, 2011), indicating the normality assumption was not violated. Table 4.4 presents the values of skewness, kurtosis, mean, and standard deviation for each item and each construct.

Table 4.4 The values of skewness, kurtosis, mean, and standard deviation by each item

Variable	Item	Skewness	Kurtosis	Mean	SD
Self-image congruence					
	1.	-.699	.235	5.11	1.45
	2.	-.783	.325	5.24	1.42
	3.	-.623	.096	5.06	1.48
	4.	-.645	.046	5.19	1.42
Perceived product quality					
	1.	-.974	.933	5.67	1.22
	2.	-1.012	.742	5.72	1.28
	3.	-.939	.569	5.70	1.24
	4.	-.825	.341	5.63	1.22
	5.	-.800	.354	5.40	1.37
	6.	-.747	.190	5.48	1.35
	7.	-.751	.262	5.50	1.28
	8.	-.686	.198	5.46	1.24
	9.	-.714	.085	5.49	1.25
Co-brand image fit (Brand image fit)					
	1.	-.755	.449	5.47	1.25

Table 4.4 The values of skewness, kurtosis, mean, and standard deviation by each item (Cont.)

Variable	Item	Skewness	Kurtosis	Mean	SD
	2.	-.735	.235	5.51	1.25
	3.	-.815	.580	5.54	1.25
Co-brand image fit (Product image fit)					
	4.	-.839	.580	5.52	1.21
	5.	-.679	.462	5.50	1.21
	6.	-.970	.899	5.54	1.31
Attitude towards co-branded sports products					
	1.	-1.127	1.502	5.67	1.18
	2.	-1.076	1.693	5.65	1.18
	3.	-1.145	1.725	5.67	1.22
	4.	-1.139	1.475	5.69	1.22
	5.	-1.367	2.488	5.82	1.17
Purchase intention					
	1.	-.865	.333	5.21	1.52
	2.	-.763	.231	5.28	1.47
	3.	-.659	-.081	5.28	1.44
	4.	-.888	.624	5.47	1.38

Multi-collinearity of each independent variable was examined through Tolerance and VIF. According to Hair et al. (2010), VIF values higher than 10.0 and tolerance value less than .10 indicate a problem of extreme multivariate collinearity. The results revealed

that all values were within the suggested criterion, thereby indicating no multi-collinearity was detected (see Table 4.5).

Table 4.5 Test of multi-collinearity with Tolerance and VIF

Variable	Tolerance	VIF
Self-image congruence	.648	1.54
Perceived product quality	.364	2.74
Co-brand image fit	.373	2.03
Attitude towards co-branded sports products	.373	2.67

4.2.3 **Descriptive statistics**. Descriptive statistics for the measured variables are presented in Tables 4.6-8. The means of the measured variables across two conditions (a single-branding advertisement and a co-branding advertisement) were assessed. Specifically, in terms of single-brand advertisement, the means of self-image congruence was 4.91 (*SD* = 1.20). The means of perceived product quality and attitude towards single-branded product were 5.45 (*SD* = .93) and 5.57 (*SD* = 1.00), respectively. Values of correlations were all less than .85, thereby indicating that all variables were not highly correlated to each other (Kline, 2010).

Pertaining to the means of the co-branding advertisement across symbolic and ingredient co-branding stimuli (all co-branding pairs), co-brand image fit had the highest mean of 6.61 (*SD* = 1.19). Self-image congruence (*M* = 5.15, *SD* = 1.23) in the combined co-branding pairs was the lowest mean among the three independent variables. For symbolic co-branding pairs, co-brand image fit had the highest mean of 6.64 (*SD* = 1.05). Self-image congruence (*M* = 5.10, *SD* = 1.33) was the lowest mean among the three

independent variables. For ingredient co-branding pairs, co-brand image fit had the highest mean of 6.72 (*SD* = 0.95). Self-image congruence (*M* = 5.18, *SD* = 1.18) was the lowest mean among the three independent variables. All correlation values were less than .85, indicating that the measured all variables were somewhat related to each other, but different one and another.

In terms of the means of each co-branding pair in a set of symbolic co-branding pairs, co-branding between Under Armour + Louis Vuitton had the highest mean of co-brand image fit (*M* = 6.55) whereas co-branding between Under Armour + Coca-Cola had the lowest mean of self-image congruence (*M* = 4.84). For the means of each co-branding pair in a set of ingredient co-branding pairs, co-branding between Under Armour + Google had the highest mean of co-brand image fit (*M* = 6.77) whereas co-branding between Under Armour + Microsoft had the lowest mean of purchase intention (*M* = 4.90).

Table 4.6 Descriptive statistics and correlations of single-branded sport products

Single-branding (*n* = 382)	*M*	SD	SIC	PPQ	ATS
Self-image congruence (SIC)	4.91	1.20	1		
Perceived product quality (PPQ)	5.45	0.93	.561**	1	
Attitude towards single-branded product (ATS)	5.57	1.00	.482**	.695**	1

Table 4.7 Descriptive statistics and correlations

Variable	*M*	SD	SICCB	PPQCB	CBFCB	ATCB	PICB
Combined co-branding pairs (*N* = 382)							
SICCB	5.15	1.23	1				
PPQCB	5.56	0.93	.525**	1			
CBFCB	6.61	1.19	.543**	.760**	1		
ATCB	5.70	1.07	.516**	.664**	.642**	1	
PICB	5.31	1.26	.671**	.611**	.610**	.624**	1
Symbolic co-branding pairs *(N = 129)*							
SICCB	5.10	1.33	1				
PPQCB	5.49	1.03	.456**	1			
CBFCB	6.64	1.05	.631**	.745**	1		
ATCB	5.64	1.11	.555**	.598**	.611**	1	
PICB	5.34	1.25	.671**	.567**	.675**	.630**	1
Ingredient co-branding pairs *(N = 253)*							
SICCB	5.18	1.18	1				
PPQCB	5.60	0.93	.567**	1			
CBFCB	6.72	0.95	.490**	.756**	1		
ATCB	5.73	1.05	.492**	.702**	.662**	1	
PICB	5.29	1.26	.675**	.628**	.587**	.624**	1

Note: Self-image congruence of co-branding = SICCB, Perceived product quality of co-branding = PPQCB, Co-brand image fit = CBFCB, Attitude towards co-branded sport product = ATCB, and Purchase intention = PICB. ** $p < .01$.

Table 4.8 Means of co-branding pairs

Co-branding pairs	*N*	SICCB	PPQCB	CBFCB	ATCB	PICB
Symbolic co-branding (N = 129)						
Under Armour + Walt Disney	54	5.49	5.51	6.48	5.94	5.56
Under Armour + Louis Vuitton	36	4.93	5.64	6.55	5.70	5.43
Under Armour + Coca-Cola	39	4.84	5.32	6.17	5.19	4.98
Ingredient co-branding (N = 253)						
Under Armour + Google	89	5.01	5.62	6.77	5.76	5.15
Under Armour + Microsoft	33	5.04	5.39	6.47	5.42	4.90
Under Armour + Amazon	130	5.32	5.64	6.76	5.79	5.49

Note: Self-image congruence of co-branding = SICCB, Perceived product quality of co-branding = PPQCB, Co-brand image fit = CBFCB, Attitude towards co-branded sport product = ATCB, and Purchase intention = PICB.

***4.2.4* Dividing the sample and assessment of the manipulation.** In this study, sample was classified into two groups based on the level of perceived symbolic versus ingredient co-branding. To that end, this study tried to divide the sample into two groups based on their cognitive perceptions as to how they perceive the co-branding stimuli for subsequent analysis (e.g., symbolic and ingredient co-branding). This procedure was selected since it is possible that there may be differences between the manipulation of symbolic and ingredient co-branding (study's stimuli) and consumer perceptions towards symbolic and ingredient co-branding (respondent's view; see Figure 4.1). To do this, the sample was divided into two groups using the same semantic differential item via the median split method (median of 7-point Likert scale is 4). Accordingly, participants who

rated the item below 4 points for the semantic differential item were coded as 1 (symbolic co-branding group). Also, participants who rated the item above 4 points were coded as 2 (ingredient co-branding group).

Furthermore, an independent-samples *t*-test was performed to determine significant difference between the two separate groups: symbolic co-branding group versus ingredient co-branding group, after dividing the sample based on the median split. The result revealed that there was a significant difference between the two groups (see Table 4.9). The mean of the semantic differential item (symbolic and ingredient co-branding perception) clearly indicated that there was a certain difference between the symbolic co-branding group (n = 103; M = 2.81) and the ingredient co-branding group (n = 279; M = 5.91). Thus, no modification was made.

Table 4.9 Independent-sample *t*-test of two groups based on the mean split

Group	*Mean*	*t*-value	*p*-value
Symbolic Group (n = 103)	2.81	-31.29	.000
Ingredient Group (n = 279)	5.91	-25.37	

Note: Semantic differential item: Symbolic vs Ingredient

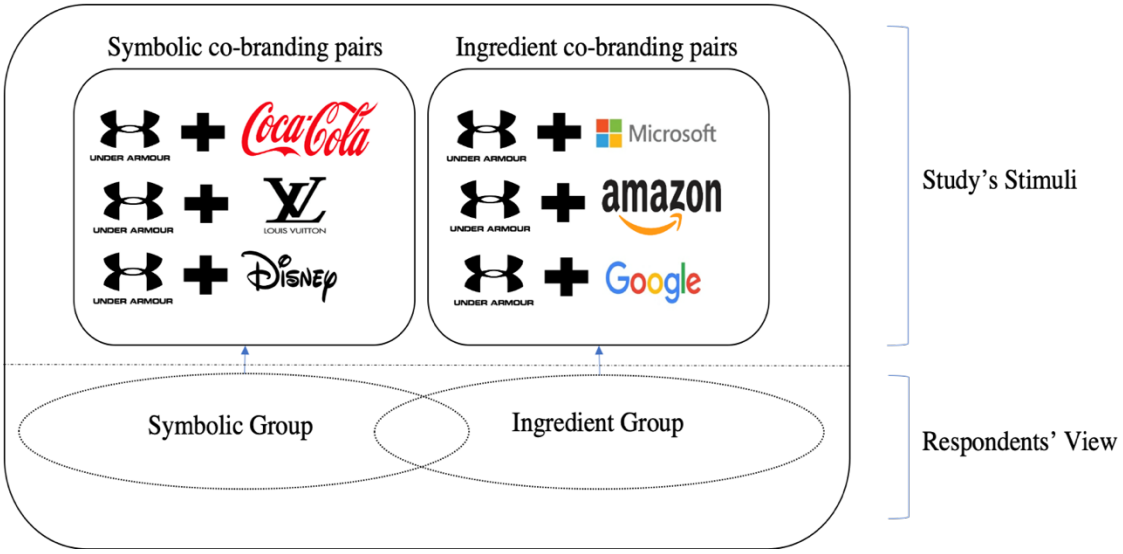


Figure 4.1 Group categorization between study's manipulation and respondents' view.

After the median split procedure, means of self-image congruence, perceived product quality, perceived co-brand image fit, attitude towards co-branded sports products, and purchase intentions by the symbolic group and ingredient group are presented in Table 4.10. Notably, the ingredient group, in which respondents more likely perceived their selected pair as ingredient co-branding pairs, was likely to have higher means of all the measured variables.

Table 4.10 Means of symbolic and ingredient groups

Group	*N (382)*	SICCB	PPQCB	CBFCB	ATCB	PICB
Symbolic Group (*n* = 103)	103	4.65	5.40	6.27	5.43	4.99
Ingredient Group (*n* = 279)	279	5.33	5.62	6.74	5.80	5.43

Note: Self-image congruence of co-branding = SICCB, Perceived product quality of co-branding = PPQCB, Co-brand image fit = CBFCB, Attitude towards co-branded sport product = ATCB, and Purchase intention = PICB.

***4.2.5* Measurement model analysis for all co-branding pairs.** The psychometric properties of the combined co-branding pairs' scale were examined through CFA. Table 4.11 displays the factor loading, Cronbach's alpha, and AVE values. For internal consistency, Cronbach's alpha values ranged from .74 to .91, and the composite reliability values ranged from .85 to .94. These results provide evidence that the internal consistency of the proposed constructs was established. The AVE values for constructs, including the solo-branding and the co-branding ranged from 0.53 to 0.74, thereby indicating convergent validity was established. Factor loading values were greater than the suggested cut-off point of .50. It means that factors were significantly loaded on its construct. Based on the results of AVE and factor loadings, the evidence of convergent validity was established.

For the evaluation of the discriminant validity, if AVE values of each factor are greater than a squared correlation of between pairs of constructs, discriminant validity is established. All AVE values of constructs exceeded the squared correlation between the construct and other constructs, except for co-brand image fit and perceived product quality (see Table 4.12). Specifically, the squared correlation between co-brand image fit and perceived product quality was greater than the AVE score of both constructs (.57 and .54 respectively). Therefore, these two constructs were reviewed carefully with a thorough investigation, including correlation analysis between items and between constructs. After reviewing values of correlations, correlation values of two constructs was .76, and no correlation values of constructs were higher than .85. Hair et al. (2010) mentioned that if the correlation is less than .85, it is considered that the two factors are distinct. Following Hair's et al. (2010) suggestion that constructs are distinct when the

values of correlation are less than .85, no modification was made at this point. The results of the measurement model for the combined model showed a good fit to the data: χ^2/df = (846.707/345*)* = 2.45, CFI = .934, TLI = .927, RMSEA = .069, SRMR = .059. Figure 4.2 presents variances and covariance of the model.

Table 4.11 The factor loading, Cronbach's alpha, and AVE values

Factor and Items	λ	α	C.R.	AVE
Self-image congruence with co-branding		0.85	0.85	0.59
1. Using the co-branded fitness tracker is consistent with how I see myself	0.747			
2. This co-branded fitness tracker is consistent with how I would like to see myself	0.795			
3. This co-branded fitness tracker is consistent with how I believe others see me	0.779			
4. This co-branded fitness tracker is consistent with how I would like others see me	0.762			
Co-branding's perceived product quality		0.74	0.91	0.54
1. The co-branded fitness tracker should have consistent quality	0.767			
2. The co-branded fitness tracker should be well made	0.759			
3. The co-branded fitness tracker should have an acceptable standard of quality	0.754			
4. The co-branded fitness tracker would perform consistently	0.766			
5. The co-branded fitness tracker is visually striking	0.725			
6. The co-branded fitness tracker looks appealing	0.749			
7. The co-branded fitness tracker is good looking	0.798			
8. The co-branded fitness tracker is a good product for the price	0.645			
9. The co-branded fitness tracker is reasonably priced	0.698			
Co-branding's co-brand image fit		0.86	0.89	0.57
1. I think the co-brands of brand A and brand B and the new product complement each other	0.766			
2. I think the co-brands of brand A and brand B fit with the product	0.781			
3. I think this is a very appropriate product for participating co-brands of brand A and brand B	0.747			
4. I think brand A and brand B have consistent image	0.755			
5. I think brand A and brand B are complementary in their images	0.775			
6. I think brand A and brand B images fit each other	0.730			

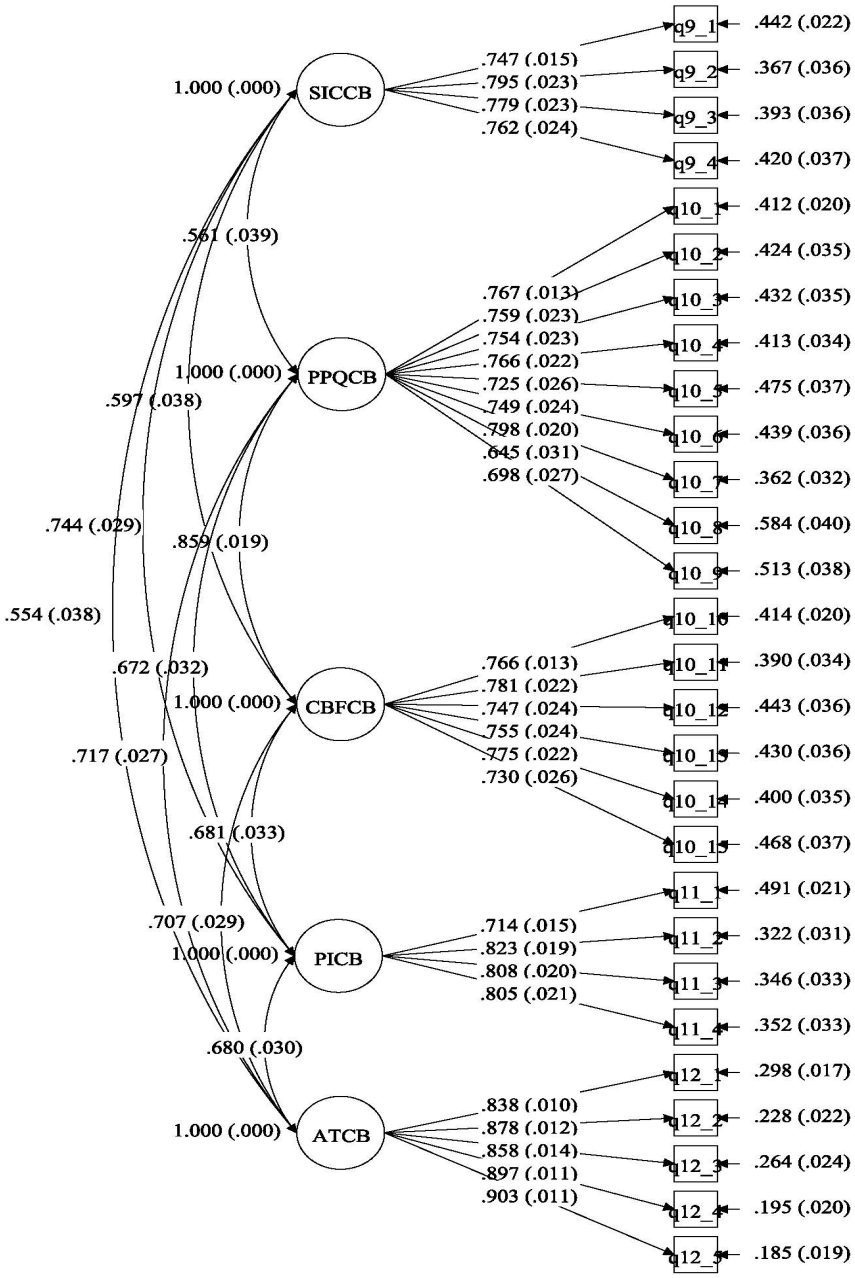
Table 4.11 The factor loading, Cronbach's alpha, and AVE values (Cont.)

Co-branding's attitude		0.91	0.94	0.76
1. unappealing/appealing	0.838			
2. bad/good	0.978			
3. unpleasant/pleasant	0.858			
4. unfavorable/favorable	0.897			
5. unlikable/likable	0.903			
Co-branding's purchase intention		0.82	0.86	0.62
1. This co-branding would make me more likely to use the fitness tracker	0.714			
2. I would be more likely to buy the co-branded fitness tracker as a result of this co-branding partnership	0.823			
3. I would buy the co-branded fitness tracker	0.808			
4. The next time I need to buy a fitness tracker, I would consider buying the co-branded fitness tracker	0.805			

Table 4.12 AVE and squared correlations for discriminant validity

Construct	AVE and Squared Correlations					
	1	2	3	4	5	AVE
1. SICCB	1					.59
2. PPQCB	.314***	1				.54
3. CBFCB	.356***	.737***	1			.57
4. ATCB	.306***	.514***	.499***	1		.76
5. PICB	.553***	.451***	.463***	.462***	1	.62

Note: Self-image congruence of co-branding = SICCB, Perceived product quality of co-branding = PPQCB, Co-brand image fit = CBFCB, Attitude towards co-branded sport product = ATCB, and Purchase intention = PICB. *** $p < .001$.



Note: Self-image congruence of co-branding = SICCB, Perceived product quality of co-branding = PPQCB, Co-brand image fit = CBFCB, Attitude towards co-branded sport product = ATCB, and Purchase intention = PICB.

Figure 4.2 Variances and covariance of the model.

***4.2.6* Measurement model analysis for each group.** In addition, separate CFAs for the symbolic group and the ingredient group were performed. Specifically, the symbolic group of the measurement model showed an acceptable fit to the data: χ^2/df = (663.427/345*)* = 1.92, CFI = .913, TLI = .905, RMSEA = .070, SRMR = .058. The ingredient group of the measurement model showed a reasonable fit to the data: χ^2/df = (778.297/345*)* = 2.25, CFI = .888, TLI = .877, RMSEA = .080, SRMR = .089 (see Table 4.13). Thus, structural equation analysis was proceeded.

Table 4.13 The result of goodness of fit indices measurement model

Index	χ^2	*df*	χ^2/df	SRMR	CFI	TLI	RMSEA
Model: Symbolic (*n* = 103)	663.42	345	1.92	.058	.913	.905	.070
Model: Ingredient (*n* = 279)	778.29	345	2.25	.089	.888	.877	.080

4.3 Hypothesis Testing

In this stage of the current study, the focus was on examining the proposed framework explaining the impact of co-branding strategies on consumer perceptions. In particular, the relationships among constructs including self-image congruence, perceived product quality, perceived co-brand image fit, consumer attitude towards, and purchase intentions of co-branded sport products, were examined based on the hypotheses (i.e., 1a-b, 2a-b, 3a-b, 4a-b, 5a-b, 6a-b, 7a-b, and 8a-b). In order to test the hypotheses, multi-group structural analysis was performed. Prior to this section, the measurement model was accepted based on the global fit. Thus, further analysis proceeded.

***4.3.1* Measurement invariance test.** Before examining multi-group SEM between symbolic and ingredient groups and latent mean comparison, assumption tests of

measurement invariance test were performed to ensure that participants in the symbolic and ingredient groups answered each research construct's item in an equivalent manner (Hair et al., 2009). For this analysis, two models were created in order to compare one and another. The first model, that factor structures were the same but separate parameters (i.e., configural invariance; unconstrained measurement model) was created. The second model tested that constrained all factor loadings were invariant between the symbolic and ingredient group (i.e., metric invariance; constrained measurement model). Then, chi-square comparison analysis between the two models was performed based on each chi-square statistic value and degree of freedom (configural invariance: χ^2 (680) = 1421.30; χ^2/df = 2.09; RMSEA= 0.070; SRMR = 0.051; CFI = .916; TLI = .907) and metric invariance: χ^2 (703) = 1453.39; χ^2/df = 2.06; RMSEA= 0.069; SRMR = 0.059; CFI = .915; TLI = .909). As a result, it revealed that no statistical differences in the chi-square statistic was identified between the symbolic and ingredient groups ($\Delta\chi^2$ (23) = 32.09, p > .05; see Table 4.14). Thus, participants across the two groups measured the scale in a similar way.

Table 4.14 Measurement invariance test

Model	χ^2	df	χ^2/df	p	SRMR	CFI	TLI	RMSEA
Configural invariance	1421.30	680	2.09	.000	.051	.916	.907	.070
Metric invariance	1453.39	703	2.06	.000	.059	.915	.909	.069
Chi-square statistic	$\Delta\chi^2$ (23) = 32.09, p > .05							

***4.3.2* Structural invariance test.** After measurement invariance was established, a similar procedure was performed to test overall structural invariance test. First, the

unconstrained structural model (Model 1), that freely estimates parameters in each group (symbolic and ingredient groups), was created. Then, the constrained structural model (Model 2), that path coefficients are constrained across the two groups, was created. Then, a comparison between two models with a chi-square analysis was tested whether there was a group difference or not.

The measurement model of unconstrained structural model (Model 3) showed a reasonable fit to the data: χ^2 (708) = 1341.08; χ^2/df = 1.89; RMSEA= 0.068; SRMR = 0.058; CFI = .915; TLI = .909. In addition, the measurement model of the constrained structural model (Model 4) showed an acceptable model fit to the data: χ^2 (710) = 1347.55; χ^2/df = 1.89; RMSEA= 0.069; SRMR = 0.072; CFI = .914; TLI = .909 (see Table 4.15). The chi-square statistic between the unconstrained structural model and the constrained structural model showed a statistically significant difference ($\Delta\chi^2$ (2) = 6.47, $p < .05$), thereby indicating there was structural variance. Thus, H8 was supported.

Table 4.15 Overall structural invariance test

Model	χ^2	*df*	χ^2/df	*p*	SRMR	CFI	TLI	RMSEA
Model 3	1341.08	708	1.89	.000	.058	.915	.909	.068
Model 4	1347.55	710	1.89	.000	.072	.914	.909	.069

4.3.3 **Testing of hypotheses towards symbolic co-branding group.** After multi-group SEM showed that there was a significant difference among the relationships, the results of multi-group SEM were examined to test the study's hypotheses. Results of the hypotheses testing are presented in Table 4.16. Regarding the relationships under the symbolic group, self-image congruence was found to have positive effects on attitude

towards co-branded sports products (b = .27, p = .001) and purchase intention (b = .26, p = .003). Thus, H1a and H2a were supported. Perceived product quality had a significant effect on attitude towards co-branded sports products (b = .43, p = .000), but not purchase intention (b = -.01, p = .877). These findings supported H3a, while H4a was not supported. In a similar vein, co-brand image fit had a significant effect on attitude towards co-branded sports products (b = .25, p = .044) but had no significant effect on purchase intention (b = .16, p = .205). Thus, H5a was supported, but H6a was not supported. Lastly, a positive and significant relationship was found between attitude towards co-branded sports products and purchase intention (b = .55, p = .000), indicating that H7a was supported.

In addition, self-image congruence, perceived product quality, and perceived co-brand image fit explained 67.6%% of the variance in attitude towards co-branded sports products. Lastly, self-image congruence, perceived product quality, perceived co-brand image fit, and attitude towards co-branded sports products explained 78.5% of the variance in purchase intentions.

Table 4.16 Path analysis for symbolic group and hypotheses testing

				Hypothesis testing	
Path coefficient	Est.	S.E.	p-value		
SICCB → ATCB	.27	.11	.001	*H1a*	**Supported**
SICCB → PICB	.26	.09	.003	*H2a*	**Supported**
PPQCB → ATCB	.43	.11	.000	*H3a*	**Supported**
PPQCB → PICB	-.01	.20	.877	*H4a*	Not supported
CBFCB → ATCB	.25	.14	.044	*H5a*	**Supported**

Table 4.16 Path analysis for symbolic group and hypotheses testing

CBFCB → PICB	.16	.22	.205	*H6a*	Not supported
ATCB → PICB	.55	.10	.000	*H7a*	**Supported**

Note: Self-image congruence of co-branding = SICCB, Perceived product quality of co-branding = PPQCB, Co-brand image fit = CBFCB, Attitude towards co-branded sport product = ATCB, and Purchase intention = PICB.

4.3.4 **Testing of hypotheses towards ingredient co-branding group.** The results of the hypotheses testing for ingredient co-branding group are presented in Table 4.17. Regarding the relationships under the ingredient group, self-image congruence was not found to have significant effects on attitude towards co-branded sports products (b = .13, p = .056), but there was a significant and positive relationship between self-image congruence and purchase intention (b = .58, p = .000). Thus, H1b was not supported, while H2b was supported. Perceived product quality had a significant effect on attitude towards co-branded sports products (b = .38, p = .016). However, perceived product quality had no significant effect on purchase intention (b = .14, p = .561). Consequently, H3b was supported, but H4b was not supported. Co-brand image fit had no significant effects on attitude towards co-branded sports products (b = .23, p = .135) and purchase intention (b = .07, p = .600). Thus, H5a and H6a were not supported. Lastly, a significant relationship was found between attitude towards co-branded sports products and purchase intention (b = .14, p = .033).

Self-image congruence, perceived product quality, and perceived co-brand image fit collectively explained 43.5% of the variance in attitude towards co-branded sports products. Self-image congruence, perceived product quality, perceived co-brand image

fit, and attitude towards co-branded sports products collectively explained 65.8% of the variance in purchase intentions.

Table 4.17 Path analysis for ingredient group and hypotheses testing

				Hypothesis testing	
Path coefficient	Est.	S.E.	*p*-value		
SICCB → ATCB	.13	.10	.056	*H1b*	Not supported
SICCB → PICB	.58	.11	.000	*H2b*	**Supported**
PPQCB → ATCB	.38	.09	.016	*H3b*	**Supported**
PPQCB → PICB	.14	.11	.561	*H4b*	Not supported
CBFCB → ATCB	.23	.13	.135	*H5b*	Not supported
CBFCB → PICB	.07	.21	.600	*H6b*	Not supported
ATCB → PICB	.14	.10	.033	*H7b*	**Supported**

Note: Self-image congruence of co-branding = SICCB, Perceived product quality of co-branding = PPQCB, Co-brand image fit = CBFCB, Attitude towards co-branded sport product = ATCB, and Purchase intention = PICB.

***4.3.5* Structural invariance test for each path between groups.** Structural invariance between two groups (symbolic and ingredient co-branding groups) was identified through multi-group invariance SEM, but it does not tell what specific path coefficients between groups were statistically different. To test significant difference in the path coefficients between symbolic and ingredient co-branding groups, Wald-test was performed. To do so, additional models that constrained all path coefficients without one specific path coefficient were created and tested for testing comparison. To that end, seven additional models were created (Model 5-11; see Table 18). Table 4.19 shows the results of the Wald-tests as follow. First, a statistically significant difference between the

two groups was found on the relationship between self-image congruence and attitude towards co-branded sports products (Wald-test: $\Delta\chi^2$ [1] = 7.250, p = .007). There was no significant group difference on the relationship between self-image congruence and purchase intention (Wald-test: $\Delta\chi^2$ [1] = 0.985, p = .321). A significant group difference was found on the relationship between perceived product quality and attitude towards co-branded sports products (Wald-test: $\Delta\chi^2$ [1] = 10.537, p = .001). Two groups were not significantly different on the relationship between perceived product quality and purchase intention between two groups (Wald-test: $\Delta\chi^2$ [1] = 2.811, p = .093). A significant group difference was found on the relationship between co-brand image fit and attitude towards co-branded sports products (Wald-test: $\Delta\chi^2$ [1] = 9.435, p = .000). There was a significant group difference on the relationship between co-brand image fit and purchase intention (Wald-test: $\Delta\chi^2$ [1] = 11.504, p = .000). A significant group difference was not found on the relationship between attitude towards co-branded sports products and purchase intention (Wald-test: $\Delta\chi^2$ [1] = 8.567, p = .004). Figure 4.3 displays the overall results of the Wald Test.

Table 4.18 Structural path coefficients for comparison across two groups

Constrained path	Model test for Wald Test
5. SICCB → ATCB	Null: 0 = Symbolic group (A) – Ingredient group (B)
6. SICCB → PICB	0 = A – B
7. PPQCB → ATCB	0 = A – B
8. PPQCB → PICB	0 = A – B
9. CBFCB → ATCB	0 = A – B
10. CBFCB → PICB	0 = A – B

Table 4.18 Structural path coefficients for comparison across two groups (Cont.)

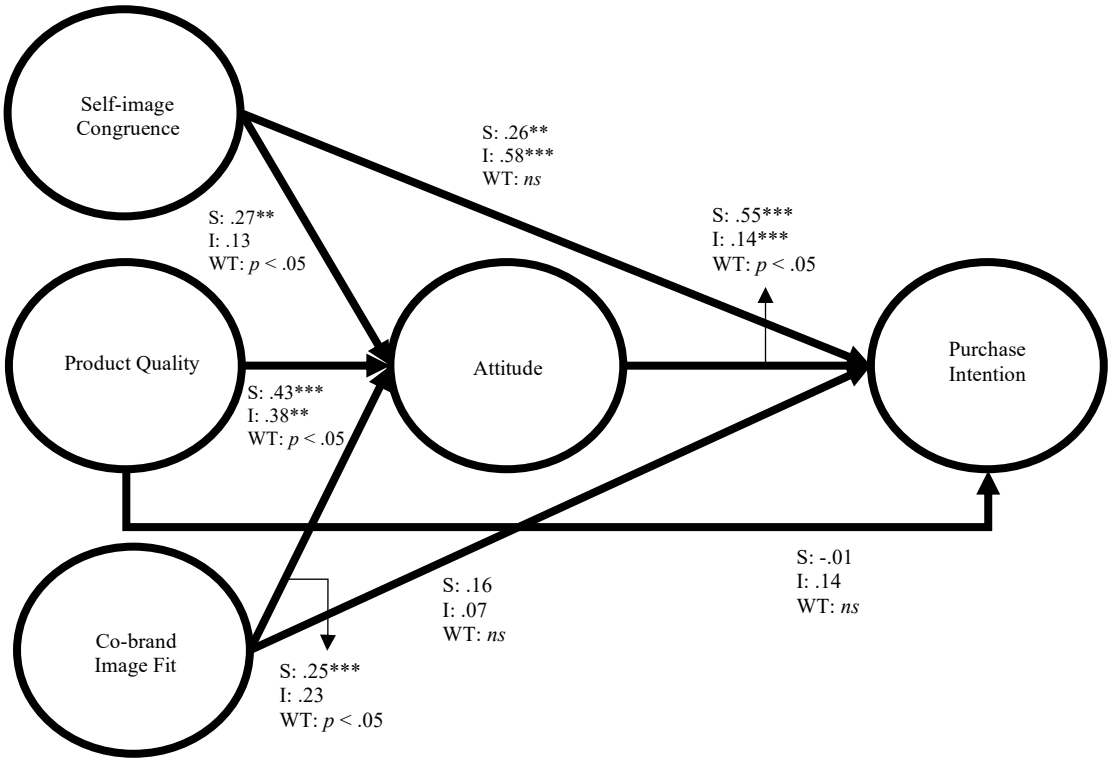
11. ATCB → PICB	0 = A – B

Note: Self-image congruence of co-branding = SICCB, Perceived product quality of co-branding = PPQCB, Co-brand image fit = CBFCB, Attitude towards co-branded sport product = ATCB, and Purchase intention = PICB.

Table 4.19 Comparisons of path coefficients across two groups

Model	Symbolic group	Ingredient group	Wald Test
5. SICCB → ATCB	.27**	.13	**7.250 (1), *p* = .007**
6. SICCB → PICB	.26**	.58***	0.985 (1), *p* = .321
7. PPQCB → ATCB	.43***	.38**	**10.537 (1), *p* = .001**
8. PPQCB → PICB	-.01	.14	2.811 (1), *p* = .093
9. CBFCB → ATCB	.25*	.23	**9.435 (1), *p* = .000**
10. CBFCB → PICB	.16	.07	**11.504 (1), *p* = .000**
11. ATCB → PICB	.55***	.14**	**8.567 (1), *p* = .003**

Note: Self-image congruence of co-branding = SICCB, Perceived product quality of co-branding = PPQCB, Co-brand image fit = CBFCB, Attitude towards co-branded sport product = ATCB, and Purchase intention = PICB. * $p < .05$, ** $p < .01$, *** $p < .001$.



Note: S = symbolic group; I = ingredient group; WT = Wald Test; *ns* = Not Significant. * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 4.3 Standardized path coefficients of the structural models.

The H8a was developed to understand whether the symbolic group had a higher level of self-image congruence than the ingredient group. In addition, it was hypothesized (H8b) that the ingredient group had a higher level of perceived product quality than the symbolic group. To test H8a, the findings of multi-group invariance SEM indicated that the symbolic group had significantly higher path coefficients from self-image congruence to attitude towards co-branded sports products. Additionally, even if the ingredient group had higher path coefficients from self-image congruence to purchase intentions, the Wald-test confirmed that the difference was not statistically different, which means that

the magnitude of path coefficients was not meaningfully different. Thus, H8a was partially supported.

For testing H8b, multi-group invariance SEM showed that the ingredient group had significantly lower path coefficients from perceived product quality to attitude towards co-branded sports products compared to symbolic group. Also, path coefficient from perceived product quality to purchase intention was not statistically significant across symbolic and ingredient group. Therefore, H8b was not supported.

***4.3.6* Post-hoc analysis: Mediation and moderated-mediation analysis.** Given the varying significant relationships identified between symbolic and ingredient groups (see Figure 4.4 and Figure 4.5), additional analyses were taken to examine the mediating effect of consumer attitude in the proposed relationships where significant relationships identified. More specifically, the primary purpose for these additional analyses was to see if there was the indirect effect of self-image congruence, perceived product quality, and co-brand image fit → attitude towards co-branded sports products → purchase intention for symbolic group, and perceived product quality → attitude towards co-branded sports products → purchase intention for ingredient group were tested using Hayes' (2017) original PROCESS macro analysis with 1,000 resamples for the bootstrap confidence intervals (Baron & Kenny, 1986).

To examine the mediating role of attitude towards co-branded sports products for symbolic group, the paths were incorporated into the hypothesized research model, which exhibited acceptable model fit (χ^2 [702] = 1235.69; χ^2/df = 1.76; RMSEA= 0.063; SRMR = 0.058; CFI = .928; TLI = .923). With regards to the indirect effects of consumer attitude on the relationship between self-image congruence and purchase intention, the

indirect effect was significant (b = .108, SE = .035, p = .001) and the 95% CI [.09, .49] did not capture zero. In addition, there was a significant mediating effect from perceived product quality → consumer attitude → purchase intention (b = .104, SE = .033, p = .003) and the 95% CI [.07, .43] did not capture zero. However, no significant mediating effect was identified among co-brand image fit, consumer attitude, and purchase intention (b = .054, SE = .030, p = .067) and the 95% CI [-.03, .35] captured zero. These results indicated that consumers who perceive high self-image congruence and perceived product quality had more favorable attitudes towards co-branded sports products directly. In turn, such perceptions enable them to increase the likelihood of purchase intention when introducing the symbolic co-branding sports products. The indirect paths between product quality → attitude → purchase intention is considered as a full mediation, while the indirect path between self-image congruence → attitude → purchase intention was considered as a partial mediation.

With respect to the mediating effect for the ingredient group, indirect effect was significant among perceived product quality, consumer attitude, and purchase intention (b = .111, SE = .037, p = .003) and the 95% CI [.07, .43] did not capture zero. These results indicated that consumers with high perceived product quality had more favorable attitudes towards co-branded sports products directly, and subsequently, affecting to increase the likelihood of purchase intention when introducing the ingredient co-branding sports products. This indirect path is considered as full mediation. Table 4.20 presents overall results of the mediating effect.

Table 4.20 Results of mediating effects

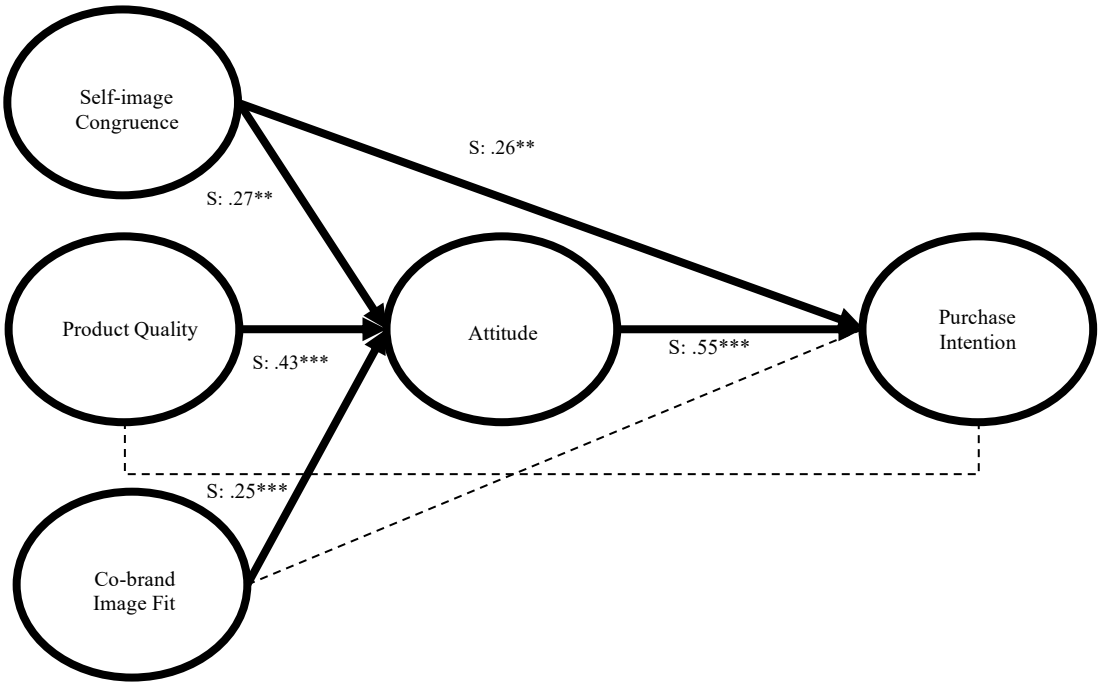
Structural relationships	Est.	SE	*p*	C.I
Symbolic group				
SICCB → ATCB → PICB	.104	.033	.001	[.09, .49]
PPQCB → ATCB → PICB	.108	.035	.003	[.07, .43]
CBFCB → ATCB → PICB	.054	.033	.067	[-.03, .35]
Ingredient group				
PPQCB → ATCB → PICB	.111	.037	.003	[.07, .43]

Note: Self-image congruence of co-branding = SICCB, Perceived product quality of co-branding = PPQCB, Co-brand image fit = CBFCB, Attitude towards co-branded sport product = ATCB, and Purchase intention = PICB

Besides the mediating effect, moderated mediation was further performed since it was identified that there were significant relationships among perceived product quality, attitude towards co-branded sports products, and purchase intention across symbolic and ingredient groups as well as significant differences between the two groups (see Figure 4.6). These additional analyses took place by examining the mediating effect of consumer attitude in the relationship between perceived product quality and purchase intention. More specifically, the primary purpose for this additional analysis was to see if there was the indirect effect of perceived product quality → attitude towards co-branded sports products → purchase intention stronger in one specific group than the other.

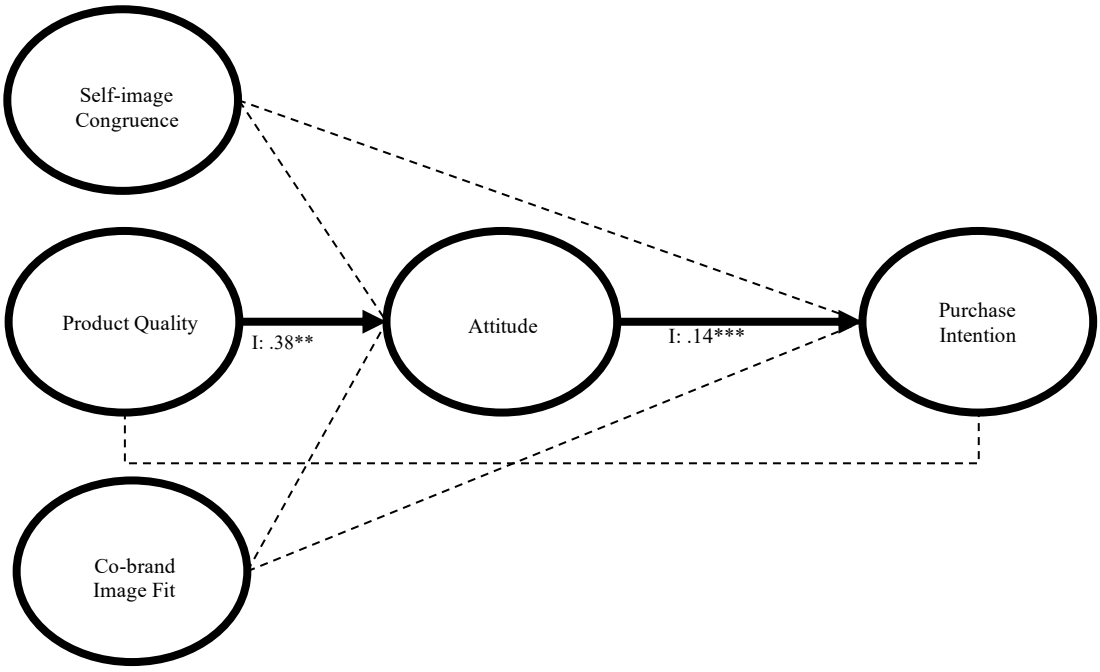
To do so, Mplus moderated-mediation testing codes based on Hayes (2013) original PROCESS macro analysis was performed (Baron & Kenney, 1986). As a result, it revealed that the moderated mediation of attitude towards co-branded sports products was not statistically significant (Wald Test = .047, p = .828). This result indicated that the

indirect effect of attitude towards co-branded sports products regardless of its strategy, played an important role in the relationship between perceived product quality and purchase intention.



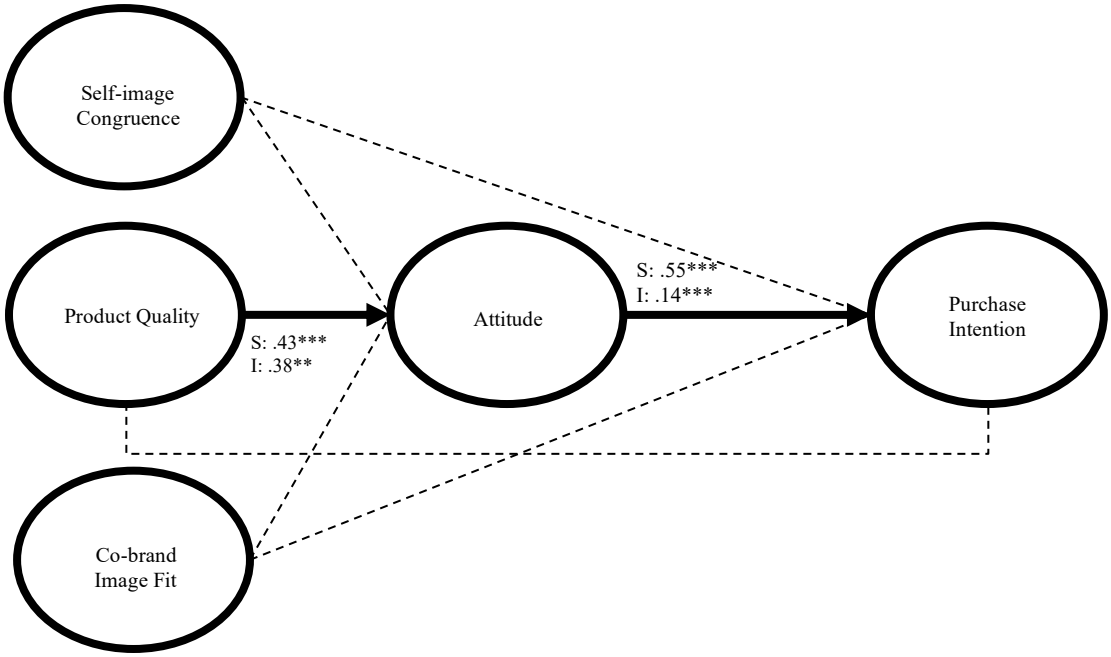
Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 4.4 Standardized path coefficients for symbolic group.



Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 4.5 Standardized path coefficients for ingredient group.



Note: * $p < .05$, ** $p < .01$, *** $p < .001$.

Figure 4.6 Standardized path coefficients across groups.

CHAPTER 5

DISCUSSION

The primary purpose of this dissertation was to examine the growing branding strategy within the sport industry: the symbolic and ingredient co-branding strategy. More specifically, this study investigated the impact of co-branding on consumers' perceptions of self-image congruence, perceived product quality, and co-brand image fit (i.e., product image fit and brand image fit), and their influence on consumer attitude towards and purchase intentions of co-branded sports products. To examine the study's purpose, six hypothetical co-branding stimuli were determined based on a series of pretests. Subsequently, measurement and data analyses were proposed in Chapter 3. In Chapter 4, a pilot study was performed to investigate the psychometric properties of the measurement scale and provide evidence of the reliability and validity of constructs. The main study was conducted in several stages. First, confirmatory factor analysis (CFA) was performed to assess the measurement model for the scales' reliability, validity, and model fit. Second, the relationships of symbolic co-branding group and that of ingredient co-branding group among self-image congruence, perceived product quality, co-brand image fit, attitude, and purchase intention were examined via multi-group Structural Equation Modeling. Further, the multi-group structural invariance analysis was conducted to see if there are any group differences for each path coefficient. This section will discuss regarding the interpretation of the results, implications, and limitations associated with this dissertation.

5.1 Theoretical Implications

Given that one of the first objectives was to examine consumer responses to co-branding strategies (symbolic versus ingredient) in the context of sport, the results provide significant theoretical and practical implications for sport brand managers. In addition, this study offers a theoretical contribution by providing insight on how sport consumers perceive and subsequently behave differently when they encounter co-branding that are based on symbolic and ingredient strategies.

5.1.1 **Comparison between symbolic and ingredient co-branding.** This is the first study to investigate the concepts related to symbolic and ingredient co-branding strategy. The findings of the current study provide some evidence of two distinct concepts in the context of co-branding. More importantly, Bhat and Reddy (1998) suggested that sports manufacturing brands (e.g., Nike and Converse) could be both symbolic and functional brands since sports brands/products can emphasize functional meaning through highlighting functional elements (e.g., shoe's performance, quality, or endurance) and at the same time emphasize symbolic meaning through which a consumer can show his or her affiliation with a particular sports teams by buying the affiliated produces of that professional team (i.e., symbolic aspects). According to this study, sports manufacturing brands can position either symbolic or ingredient branding by partnering with other brands that could be perceived as symbolic- and ingredient-co-branding. Because "symbolic attributes and functional attributes [of brands] do not influence consumer behavior in the same way" (Mazodier & Merunka, 2014, p. 1552), this study provides empirical evidence that a significant difference in consumer behavior exists between symbolic co-branding and ingredient co-branding.

To understand the differences in consumer behavior between symbolic and ingredient co-branding, the results of a multi-group invariance SEM indicated that consumers who perceived co-branding as symbolic co-branding (i.e., the symbolic group) were influenced by different facets of the proposed framework of consumer behavior as compared to the consumers who perceived co-branding as ingredient co-branding (i.e., the ingredient group). More specifically, there were significant differences in the relationship between self-image congruence and attitude towards co-branded sports products (SICCB → ATCB), between perceived product quality and attitude towards co-branded sports products (PPQCB → ATCB), between co-brand image fit and attitude towards co-branded sports products (CBFCB → ATCB), and between attitude towards co-branded sports products and purchase intention (ATCB → PICB). Overall, consumer behavior in the two different strategies were not the same, which suggests that the marketing strategy should be differently exploited.

5.1.1.1 Consumer behavior in response to symbolic co-branding. Three antecedents of consumer attitude (i.e., self-image congruence, perceived product quality, and co-brand image fit) in the symbolic group were stronger positive predictors of consumer attitude. Thus, symbolic co-branded sports products are likely to evoke favorable perceptions of self-image congruence, perceived product, and co-brand image fit in consumers, thereby positively affects their purchase intentions. Therefore, consumers who perceived the co-branding strategy as a specifically symbolic co-branding will likely place importance on the congruence of self-image with co-branding, perceived product quality, and co-brand image fit as it influences their evaluation. Therefore, sport

brand managers should put more weight on increasing perceptions consumers of self-image, the functionality of the product, and the co-brand image fit.

In addition, the symbolic group tended to be more influenced by attitude in terms of their consumptive behavior. Thus, when consumers displayed a positive evaluation toward co-branding, they were more likely to purchase the co-branded products. These findings were in agreement with previous co-branding research that indicated that the self-image congruence, perceived product quality, and co-branding image fit impacted consumer attitude toward a co-branding (Yu, Lee, Cottingham, & Lee-seob, 2019).

The results of this study suggest that self-image congruence, perceived product quality, and co-brand image fit may be the most important factors in establishing consumers' attitude towards, and impacting consumers' purchase intentions, while perceived product quality and co-brand image fit will not directly impact purchase intention in this particular setting (i.e., for symbolic co-branding). Therefore, managers who are marketing to consumers who tend to view co-branding specifically as symbolic co-branding may have a greater chance of success when introducing co-branding that is perceived to use a symbolic theme and a highlighting self-image congruence with co-branding, product functionality perceptions, and co-brand image fit between partnering brands.

*5.1.1.2 Consumer behavior in response to ingredient co-branding***.** In contrast, the results indicate that consumers who perceived co-branding specifically as ingredient co-branding only considered the perceptions of product quality in order to determine their attitude. Therefore, ingredient co-branding strategy is conceptually designed to provide more emphasis on functional attributes for consumers. In response, consumers may

respond to the purpose of the ingredient co-branding strategy. In addition, attitude towards co-branded sports products has significant influence on purchase intention.

Since the goal of marketing is to not only impact consumer attitude but also to identify the potential antecedents that positively create consumer attitude, the perceived functionality of co-branded sports products may be a critical factor affecting consumer evaluation, and in turn, positively influencing purchase intention. Thus, in order to generate positive perceptions, the functionality of products (e.g., performance, aesthetics, and price) could be emphasized to increase success rate.

However, the magnitude of the effect of perceived product quality in the ingredient group on consumer attitude towards co-branded sports products was a bit lower than in the symbolic group, but it is still a significant factor. The findings from this study revealed that consumers' perception of the functionality of products is not influenced by co-branding strategy. This may support the assertion that as the consumer perceives a closer self-image congruence with the brands or products, he or she will become more likely favorably evaluate the product's quality (Quester, Karunaratna, & Goh, 2000; Sirgy, 1985). In other words, consumers whose brands/products perceptions are favorable (i.e., symbolic meaning: self-image congruence) are likely to view the products' quality more favorably. According to this assertion, symbolic co-branding may produce stronger perceptions of consumers' symbolic meaning; as such, perceived product quality may be stronger for the symbolic group than the ingredient group. Given the above premise, this study also provides evidence that consumers' symbolic meaning through co-branding influences their perceptions of the quality of the brands/products.

***5.1.2* The influence of self-image congruence on co-branding.** The results from multi-group SEM indicated that self-image congruence in a symbolic group and an ingredient group had positive and significant effects on consumer attitudes towards co-branded sports products and purchase intention, except for the ingredient group (i.e., self-image congruence and attitude). According to this finding, consumers are likely to purchase brands or products to increase their self-consistency, self-expression, self-image, and self-concept (Mathews-Lefebvre & Valette-Florence, 2014; Mazodier & Merunka, 2014; Swaminathan, Silley, & Ahluwalia, 2009). These findings are in line with previous research (Ekinci, Dawes, & Massey, 2008; Graeff, 1996; Hong & Zinkhan, 1995; Malhotra, 1988) and is in line with empirical evidence that consumers' psychological congruence between individuals' self-concept and the co-branded user image of sports products (Sirgy et al., 1997) has a critical impact on consumer behavior. Considering the lack of research on self-image congruence in the context of sport, the results both confirmed and reaffirmed that higher self-image congruence with co-branding is likely to create a favorable consumer behavior that positively affects consumer attitudes and purchase intentions. This may indicate that consumers are likely to perceive symbolic co-branded products to match their self-concept (i.e., self-image). Moreover, as the co-branding's symbolic characteristics increases, the congruence between the co-branding's image and the consumer's image enhances as well, thereby affecting positive feelings (O'Cass & Frost, 2002). Notably, marketers should depict the status brand that fulfills the congruency and emphasizes it while reinforcing the symbols of co-branding. To support this argument, researchers have argued that consumers tend to evaluate an image of a brand based on its symbolic meaning (Onkvisit & Shaw, 1987).

Previous research has stated that individuals are likely to consider certain possessions "as symbols of their achievement" (O'Cass & Frost, 2002, p. 72). The ownership of the certain possessions is perceived to represent "*status symbols*". Through this premise, co-branding can also be used as a status symbol due to the unique facets of the co-branding arrangement, thereby producing various brand associations.

However, this research found no significant relationship between consumer self-image congruence (i.e., the congruence between individual's self-concept and the image of co-branding) and the attitude in the ingredient group. This is not in line with previous research; that is, earlier studies indicated consumers are likely to create a favorable attitude through an increased match between consumer's self-concept and brand/products (Sirgy et al., 1997; Hosany & Martin, 2012). Yet, this is seemingly not the case among consumers who perceived the co-branding to be more likely ingredient (i.e., functional-oriented) co-branding. This may not be surprising given that this study's product category was watch-type fitness trackers, which have a robust set of functional elements, including performance, quality, features, and battery. Furthermore, ingredient co-branding is conceptually perceived to enhance the functional attributes. This is partially supported by previous co-branding research; that is, symbolic perceptions were not a significant predictor of perceived co-brand image fit in the hypothetical functional-oriented co-branding stimuli (Smartwatch: Apple + Swatch; Riley et al., 2015). Riley et al. also identified that the functional perceptions of co-branding were not a significant predictor of its evaluation. The authors also asserted that the study's product category (i.e., functional-oriented products) may influence the results. Therefore, consumers' symbolic

meaning as measured via self-image congruence were less important for the ingredient group when evaluating ingredient co-branding.

5.1.3 **The influence of perceived product quality on co-branding.** In addition, consumers' perceived product quality in both symbolic and ingredient groups had a positive and significant impact on consumer attitude towards the co-branded sports products. This result supported the notion that the consumers' functionality perceptions (e.g., performance, quality, aesthetics, and price) influence their evaluation of the co-branded sports products. This is in accordance with previous research (Andres, 2003; Helmig et al., 2008) in that brands/products' functionality is important in the formation of favorable attitudes by consumers. The findings support the assertion that consumers are also driven by functional needs and symbolic needs (i.e., self-image congruence). Moreover, this application can also be extended to the context of co-branding.

Contrary to the previous literature where a positive relationship was revealed between consumer's perceptions of the functionality of brands/products and purchase intention (Chang & Wildt, 1994; Rajendran & Hariharan, 1996), the functionality perceptions of co-branded sports products were not a significant factor for consumers' purchase intention. One possible explanation is that brand managers initially tend to arrange any co-branding partnerships in order to trigger consumers' symbolic meaning (i.e., to match consumers' self-image) through the secondary brand, but there may be less focus on stressing the functional attributes of the product (Keller, 2003). In other words, the primary focus of co-branding has been aimed at positively increasing a symbolic image of product/brand as created by the collaboration.

For example, take the case of Under Armour's sport headphone co-branding partnership with JBL; the co-branding arrangement was seemingly intended to enhance the product's performance through the collaboration with a tech-oriented company (i.e., JBL). However, consumers may likely perceive a more symbolic image that is caused by this "collaboration:" that is, the co-branding arrangement was more directly associated with the attributional features of symbolic meanings rather than the product's performance or quality. Suppose that a consumer encounters a co-branded sports product. The consumer may first think of the collaboration attributes rather than the functional attributes of the products (e.g., performance or price). Therefore, consumers' purchase intentions may not be directly affected by a co-branded product's perceived quality.

Another possible explanation for the non-significance of the relationship between perceived quality and purchase intention is the fact that previous research on perceived product quality have different perspectives about this relationship. For example, some researchers argued that there is a positive and direct relationship between perceived product quality and purchase intention (Reference), yet others asserted that perceived value mediates the relationship (Devaraj, Matta, & Conlon, 2001). Devaraj et al. stated that "quality and value are not well differentiated from each other and thus are difficult to distinguish in the minds of the consumers" (p. 427). Based on this assertion, perceived product quality may indirectly influence the purchase intention of consumers. To support this possible explanation, Dodds, Monroe, and Grewal (1991) proposed a framework that explains how perceived value mediates the relationship between perceived product quality and consumers' behavioral intention.

***5.1.4* The influence of co-brand image fit.** In contrast to the findings by Simonin and Ruth (1998) and Helmig et al. (2007), the co-brand image fit, including product image fit and brand image fit, did not have a significant impact on either attitude towards co-branded sports products or purchase intentions, except for the relationship between co-brand image fit and attitude towards co-branded sports products among the symbolic group. In the symbolic group, the increased perceived co-brand image fit results in enhancing consumers' favorable attitude.

In general, a perceived co-brand image fit that is high is expected to induce a positive and significant consumer behavior. However, the findings indicate that no significant relationship exists between consumers' perceptions of co-brand image fit and their attitude towards and purchase intentions towards co-branded sports products. Interestingly, given that the relationship between self-image congruence and consumer behavior was added, the impact of co-brand image fit seems to be reduced possibly because the concept of co-brand fit forms its relationship with external branding elements. In other words, the impact of co-brand image fit may have nothing to do with an individual's internal perceptions (their thought, image, or attitude towards co-brand fit).

The notion of perceived fit was actually derived from the context of brand extension where a fit between a parent brand and an extension brand is one of the most pivotal elements in consumer evaluation. In addition, the importance of brand image fit, and product category fit in the brand extension case is based on the foundation of the co-brand image fit between partnering brands; this includes brand image fit and product image fit (Simonin & Ruth, 1998). However, in the case of co-branding, the fit is, indeed,

a critical factor, but fit between the co-branded product's image and the consumers' self-image may be more important for consumers. This assertion is in agreement with the study conducted by Su and Kunkel (2019) who examined the effect of service brand alliance on its parent brands. Their study found that the effect of consumers' perceived physical, environmental, and service quality on service alliance was a significant predictor of perceived brand contribution, but no significant effect of perceived brand fit was discovered on consumer evaluation towards the parent brand. According to the study's findings, the importance of attributes towards service alliance played a more pivotal role in consumers' evaluation than perceived brand fit. Accordingly, the current study also supported the assertion that in the context of co-branding for sports products, perceived co-brand image fit may not be a greater importance factor for consumers' evaluation and purchase intention than other factors, such as self-image congruence with co-branding.

Another possible explanation for this result could be interpreted that since co-branding is a relatively newer branding strategy, fit between partnering brands may not be a significant factor for consumers in the context of co-branding. Even if co-branding had been used over relatively long time period, the concepts of symbolic and ingredient co-branding strategies have recently emerged in research. Therefore, brand managers could benefit from emphasizing the positioning of the products/brands, both symbolic and ingredient co-branding, through marketing messages.

5.1.5 **The influence of consumer attitude on purchase intention**. Regarding the relationship between consumer attitude towards co-branded sports products and purchase intention, this study found that attitudes towards the co-branded sports products produced

a significant positive effect on purchase intentions across the symbolic and ingredient groups. These results are in agreement with the literature, thereby indicating that attitude can positively impact intent to purchase co-branded sports products. These findings can be extended to the attitude-behavior relationship framework (Fazio, Powell, & Williams, 1989) and to the context of co-branding. Thus, as attitude plays an important role in influencing purchase intention, brand managers must try to positively increase consumer attitude when arranging co-branding partnerships. A key implication to enhancing the relationship between consumer attitude and purchase intention is to identify the facets that affect this attitude. Potential key factors for forming a positive consumer attitude include self-image congruence, perceived product functionality, and co-brand image fit are critical aspects, and perceived product functionality.

5.2 Practical Implications

The current study provides evidence of the significance of self-image congruence for co-branded sports products. Thus, regardless of the implemented co-branding strategy, co-branded sports products can be explained by the idea of the symbolic purchase (Kwon & Armstrong, 2006); that is, consumers are strongly driven to purchase co-branded sports products due to their symbolic meaning (i.e., via their secondary brands). Sport brand managers should, therefore, develop experience with various brands associated with the co-branded sports products through social media campaigns, advertising, or other initiatives. Moreover, this study highlights the congruence between consumers' self-image and the image of co-branded sports products, which may subsequently impact consumer behavior such as attitude and purchase intention. In other words, brands/products yield symbolic value and meaning, and such symbolic value is

beneficial to a consumer's self-image/concept (Riley et al., 2015). Furthermore, the effects were seen to spill over to the consumers' perception of their evaluation of a product. These results indicate that consumers consider their self-image when they link with the alliance between the branded products.

To build positive congruence between self-image and co-branding, sport brand managers should develop marketing strategies to enhance consumers' symbolic perceptions, thereby increasing consumers' intentions to purchase co-branded sports products. Positive perceptions of co-branded sport products can be formed by developing unique brand perceptions that reinforce the fit between consumers' self-image and their image of co-branded sports products. To do so, sport marketers should create various users' images through co-branding that not only provide symbolic meaning, but that also closely match the self-image of the consumers. Indeed, sport marketers must take extra care when crafting various advertising messages or appeals that target a customer's self-concept. More specifically, an advertising message generally considers trustworthy and reputable external sources to disseminate messages related to an athlete's image (Na, Kunkel, & Doyle, 2020). Today's advertisements have attempted to deliver various messages across different fields using celebrities or athletes. In addition, messages tend to spread, particularly to encourage social media engagement with athlete-related content across sport and non-sport settings. Considering these two factors of advertising messages, advertisers must better utilize star athletes' image, capitalizing on their image and the users' image of co-branded sports products, as well as the enhanced products/brands' trustworthiness. Researchers assert that authenticity is a key aspect

required to encourage consumer engagement through the marketing promotions (Pronschinske, Groza, & Walker, 2012).

Moreover, advertising messages that are likely to be perceived as congruent with consumers' self-concept/image are considered superior to incongruent appeals in terms of enhancing advertising effectiveness by communicating a meaningful message that adds value for consumers (Hong & Zinkhan, 1995; Johar & Sirgy, 1991). The meaning of congruent or incongruent appeal in this context refers to the approach advertisers adopt in their strategies, such as a value-expressive or a utilitarian appeal (Johar & Sirgy, 1991). The decision to use a utilitarian or value-expressive appeal in an advertising strategy is a key marketing decision to ensure effective marketing communication. To apply these strategies, it may be important to highlight and appeal to value-expressive elements (e.g., symbolic meaning: fun, enjoyment, pleasure, escapism or experiences) when promoting symbolic co-branding, whereas a utilitarian appeal can include elements such as goal-oriented aspects (e.g., functional attributes: performance, quality, or aesthetics) when introducing ingredient co-branding (Martin-Consuegra, Diaz, Gomez, & Molina, 2018; Monsuwé, Dellaert, & Ruyter, 2004). Overall, sport brand managers can target a communication campaign for an audience using the strategic appeals for the right brand positioning (symbolic and ingredient co-branding).

As consumers' perceptions of the functionality of co-branded sports products are important when both symbolic and ingredient co-branding tactics are employed, sport brand managers should consider not only identifying the needs of consumers as they relate to product functionality but also highlighting the co-branding positioning for both symbolic and ingredient co-branding. In addition, as a brand can communicate consistent

quality to consumers (Chernatony & Riley, 1998), marketers must understand the importance of perceived product quality as it is shaped by co-branding. In other words, consumers tend to have positive feelings regarding the quality of branded products as compared to unbranded products (Wheatley, Walton, & Chiu, 1997). Even though perceptions of product quality are marginally lower with ingredient co-branding than symbolic co-branding, it is conceptually conceivable that the concept of ingredient co-branding should highlight the co-branded product's functionality in terms of how the secondary brand's attributes contribute to the co-branded product.

As products' functionality will likely impact consumers' attitude towards co-branded sports products, sport brand managers should investigate market research to understand consumers' expectation/anticipation of the utilitarian features of co-branded sports products prior to launching their new products. Additionally, among elements of a co-branded product's quality, price may be a major concern for marketers in predicting consumers' evaluation. A combination of two or more brands may create a consumer perception that a product is costlier than single-branded products (e.g., Apple Watch vs Apple Watch Hermes). Potentially, if a gap exists between a co-branded product's actual price and the price the consumers expect, consumers may avoid purchasing the product. For this reason, sport brand managers should pay attention to the expectations of consumers and set prices for co-branded products at the perceived fair value if possible. Overall, the importance of the functional elements of the co-branded products should not be overlooked, considering that excessive focus is often placed on creating symbolic meanings through the co-branding for consumers.

5.3 Limitation and Future Research Directions

Even if this study can provide significant theoretical and practical insights to the understanding of co-branding in the sport industry, this research contains some limitations that should be addressed in future research. First, future research should consider examining the effect of co-branding through a real co-branding example. Multiple hypothetical co-branding stimuli were fabricated in this study in order to avoid any potential bias that could create biased perceptions. One reason to use hypothetical co-branding stimuli was that marketing promotions used via social media and advertisements could influence an individual's overall attitude and perceptions to investigate the effect of real co-branding examples (e.g., Apple Watch Nike+). However, there is likely a gap between hypothetical stimuli and actual examples in the understanding of the benefits of co-branding initiatives. To respond to this gap, future research should consider several actual co-branding examples, possibly including a sport team co-branding partnership (e.g., Paris Saint-Germain co-branded with Jordan for team jersey).

Second, the difference in price between the non-co-branded and co-branded products was somewhat vague in this study. The price differences were determined based on the actual market research. So, the average price difference between non-co-branded products and co-branded products in this research's stimuli was determined. However, considering the primary purpose of the co-branding partnership in which multiple brands are involved to gain overall benefits, it may be ideal for all stakeholders that co-branded products have distinguishably higher price than its non-co-branded products. In contrast, the pricing used in the co-branding stimuli was relatively low compared to this higher

pricing model. Since the co-branding's price in the advertisement was not much difference, this could impact the overall results. In this regard, future research should be set a distinguishable price difference for the co-branding condition to avoid any potential impact. In addition, it may be interesting to determine how the price impacts consumer attitude whether they would buy it or not.

Lastly, this study used a wearable sport device (e.g., a fitness tracker) as the product category. Although the fitness tracker is one of the most popular sport products among various consumer groups (Kim & Chiu, 2019), consumers perceptions may differ depending on the different types of product categories presented to them. For this reason, results may reveal conflicting patterns when consumers are presented with different product types. Therefore, this study's proposed model should be explored using more diverse sport product categories.

6. Conclusion

In conclusion, co-branding partnerships for sport products may offer partnering brands an opportunity to enhance their success rate through increased consumers' self-image congruence with co-branding, perceptions of overall quality, co-brand image fit between partnering brands, attitude towards and purchase intentions towards the co-branded sports products. In addition, there must be different marketing strategies applied depending on the concepts of the co-branding strategies (i.e., symbolic or ingredient co-branding). Moreover, consumers' perceptions towards symbolic and ingredient co-branding strategies tend not to function in the same way.

In response to limited research on co-branding in the context of sport, this study takes a step toward filling this research void by examining various hypothetical

co-branding arrangements and found varying consumer-decision processes. More importantly, the current study extends the body of literature on co-branding by investigating the effectiveness of a co-branding strategy and analyzing vital consumer perceptions (i.e. self-image congruence, product quality, and image fit between partnering brands) in relation to the evaluation of the product, and purchase intention.

References

Aaker, D. (1990). Brand extensions: The good, the bad, and the ugly. *MIT Sloan Management Review*, *31*(4), 47.

Aaker, D. A., & Jacobson, R. (1994). The financial information content of perceived quality. *Journal of Marketing Research*, *31*(2), 191-201.

Aaker, D. A., & Joachimsthaler, E. (1999). The lure of global branding. *Harvard Business Review*, *77*(6), 137-44.

Aaker, D. A., & Keller, K. L. (1990). Consumer evaluations of brand extensions. *The Journal of Marketing*, *54*(1) 27-41.

Aaker, D.A. (1991). *Managing brand equity*. New York, NY: The Free Press.

Ahn, H., & Sung, Y. (2012). A two-dimensional approach to between-partner fit in co-branding evaluations. *Journal of Brand Management*, *19*(5), 414-424.

Ajzen, I., & Fishbein, M. (1970). The prediction of behavior from attitudinal and normative variables. *Journal of Experimental Social Psychology*, *6*(4), 466-487.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, NJ: Prentice Hall.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411-423.

Andres, N. (2003). Ausstrahlungseffekte beim co-branding. Hamburg DE: Kovac.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, *51*(6), 1173.

Belk, R. W. (1988). Possessions and the extended self. *Journal of Consumer Research*, *15*(2), 139-168.

Besharat, A. (2010). How co-branding versus brand extensions drive consumers' evaluations of new products: A brand equity approach. *Industrial Marketing Management*, *39*(8), 1240-1249.

Besharat, A., & Langan, R. (2014). Towards the formation of consensus in the domain of co-branding: Current findings and future priorities. *Journal of Brand Management*, *21*(2), 112-132.

Bhat, S., & Reddy, S. K. (1998). Symbolic and functional positioning of brands. *Journal of Consumer Marketing*, *15*(1), 32-43.

Birdwell, A. E. (1968). A study of the influence of image congruence on consumer choice. *The Journal of Business*, *41*(1), 76-88.

Biscaia, R., Correia, A., Rosado, A. F., Ross, S. D., & Maroco, J. (2013). Sport sponsorship: The relationship between team loyalty, sponsorship awareness, attitude toward the sponsor, and purchase intentions. *Journal of Sport Management*, *27*(4), 288-302.

Bouten, L. M., Snelders, D., & Hultink, E. J. (2011). The impact of fit measures on the consumer evaluation of new co-branded products. *Journal of Product Innovation Management*, *28*(4), 455-469.

Broniarczyk, S. M., & Alba, J. W. (1994). The importance of the brand in brand extension. *Journal of Marketing Research*, *31*(2), 214-228.

Burn, R. B. (1979). *The self-concept in theory, measurement, development, and behavior,* London: Longman.

Carman, J. M. (1990). Consumer perceptions of service quality: an assessment of T. *Journal of Retailing*, *66*(1), 33-55.

Cecere, L. (2013). New products: More costly and more important. *Forbes*. Retrieved from https://www.forbes.com/sites/loracecere/2013/12/11/new-products-more-costly-and-more-important/#173878f96b90.

Chang, T. Z., & Wildt, A. R. (1994). Price, product information, and purchase intention: An empirical study. *Journal of the Academy of Marketing science*, *22*(1), 16-27.

Collins, L. M., & Su, J. (2017). *Status consumption in the context of co-branding*. Paper presented at the annual conference of International Textile and Apparel Association (ITAA), St. Petersburg, FL.

Dabholkar, P. A., & Bagozzi, R. P. (2002). An attitudinal model of technology-based self-service: moderating effects of consumer traits and situational factors. *Journal of the Academy of Marketing Science*, *30*(3), 184-201.

De Chernatony, L., & Riley, F. D. O. (1998). Modelling the components of the brand. *European journal of marketing*, *32*(11/12), 1074-1090.

Desai, K. K., & Keller, K. L. (2002). The effects of ingredient branding strategies on host brand extendibility. *Journal of Marketing*, *66*(1), 73-93.

Devaraj, S., Matta, K. F., & Conlon, E. (2001). Product and service quality: The antecedents of customer loyalty in the automotive industry. *Production and Operations Management*, *10*(4), 424-439.

Dickinson, S., & Heath, T. (2006). A comparison of qualitative and quantitative results concerning evaluations of co-branded offerings. *Journal of Brand Management*, *13*(6), 393-406.

Dodds, W. B., & Monroe, K. B. (1985). The effect of brand and price information on subjective product evaluations. *Advance in Consumer Research*, *12*(1)*,* 85-90.

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of price, brand, and store information on buyers' product evaluations. *Journal of Marketing Research*, *28*(3), 307-319.

Dolich, I. J. (1969). Congruence relationships between self images and product brands. *Journal of Marketing Research*, *6*(1) 80-84.

Ekinci, Y., Dawes, P. L., & Massey, G. R. (2008). An extended model of the antecedents and consequences of consumer satisfaction for hospitality services. *European Journal of Marketing*.

Fang, X., & Mishra, S. (2002). The effect of brand alliance portfolio on the perceived quality of an unknown brand. *Advances in Consumer Research, 29*(1)*,* 519-520.

Fazio, R. H., Powell, M. C., & Williams, C. J. (1989). The role of attitude accessibility in the attitude-to-behavior process. *Journal of consumer research*, *16*(3), 280-288.

Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention and behaviour,* Reading, MA: Addison-Wesley.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, *18*(3), 382-388.

Fournier, S. (1998). Consumers and their brands: Developing relationship theory in consumer research. *Journal of Consumer Research*, *24*(4), 343-373.

Foxall, G. R., Goldsmith, R. E., & Brown, S. (1998). *Consumer psychology for marketing*. London: Thomson

Gammoh, B. S., Voss, K. E., & Chakraborty, G. (2006). Consumer evaluation of brand alliance signals. *Psychology & Marketing*, *23*(6), 465-486.

Garbarino, E., & Johnson, M. S. (1999). The different roles of satisfaction, trust, and commitment in customer relationships. *Journal of Marketing*, *63*(2), 70-87.

Geylani, T., Inman, J. J., & Hofstede, F. T. (2008). Image reinforcement or impairment: The effects of co-branding on attribute uncertainty. *Marketing Science*, *27*(4), 730-744.

Graeff, T. R. (1996). Using promotional messages to manage the effects of brand and self-image on brand evaluations. *Journal of Consumer Marketing, 13*(3), 4-18.

Graeff, T. R. (1997). Consumption situations and the effects of brand image on consumers' brand evaluations. *Psychology & Marketing*, *14*(1), 49-70.

Grossman, R. P., & Till, B. D. (1998). The persistence of classically conditioned brand attitudes. *Journal of Advertising*, *27*(1), 23−31.

Grubb, E. L., & Grathwohl, H. L. (1967). Consumer self-concept, symbolism and market behavior: A theoretical approach. *The Journal of Marketing*, *31*(4) 22-27.

Gwinner, K., & Bennett, G. (2008). The impact of brand cohesiveness and sport identification on brand fit in a sponsorship context. *Journal of Sport Management*, *22*(4), 410-426.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., & Tatham, R.L. (2006). *Multivariate Data Analysis* (6th ed.). Upper Saddle River, NJ: Prentice Hall.

Han, J. W. (2006). *The impact of self-concept/product-image congruity and functional congruity on brand preference: Three product categories*. Unpublished doctoral dissertation, Tallahassee, Florida State University.

Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. New York, NY: Guilford Press.

Helmig, B., Huber, J. A., & Leeflang, P. (2007). Explaining behavioural intentions toward co-branded products. *Journal of Marketing Management*, *23*(3/4), 285-304.

Helmig, B., Huber, J. A., & Leeflang, P. S. (2008). Co-branding: The state of the art. *Schmalenbach Business Review*, *60*(4), 359-377.

Hinkin, T.R. (1995). A review of scale development practices in the study of organizations. *Journal of Management, 21*(5), 967–988.

Hoegg, J., & Alba, J. W. (2011). Seeing is believing (too much): The influence of product form on perceptions of functional performance. *Journal of Product Innovation Management*, *28*(3), 346-359.

Holbrook, M. B. (1980). *Some preliminary notes on research into consumer esthetics, in Olson, J.C. (Ed.) Advances in Consumer Research, 7*. Association for Consumer Research, Ann Arbor, MI.

Holbrook, M. B., & Corfman, K. P. (1985). Quality and value in the consumption experience: Phaedrus rides again. *Perceived Quality*, *31*(2), 31-57.

Holmes, S., & Tierney, C. (2002). How Nike got its name back. *Business Week*, *3806*(1), 129-131.

Homburg, C., Schwemmle, M., & Kuehnl, C. (2015). New product design: Concept, measurement, and consequences. *Journal of Marketing*, *79*(3), 41-56.

Hong, J. W., & Zinkhan, G. M. (1995). Self-concept and advertising effectiveness: The influence of congruency, conspicuousness, and response mode. *Psychology & Marketing*, *12*(1), 53-77.

Hosany, S., & Martin, D. (2012). Self-image congruence in consumer behavior. *Journal of Business Research*, *65*(5), 685-691.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55.

Ipeirotis, P. (2013). Demographics of Mechanical Turk. Retrieved from http://archive.nyu.edu/bitstream/2451/29585/2/CeDER-10-01.pdf

Jamal, A., & Al-Marri, M. (2007). Exploring the effect of self-image congruence and brand preference on satisfaction: the role of expertise. *Journal of Marketing Management*, *23*(7/8), 613-629.

Jamal, A., & Goode, M. M. (2001). Consumers and brands: a study of the impact of self-image congruence on brand preference and satisfaction. *Marketing Intelligence & Planning*, *19*(7), 482-492.

James, D. O., (2006). Extension to alliance: Aaker and Keller's model revisited. *Journal of Product & Brand Management*, *15*(1), 15-22.

Johar, J. S., & Sirgy, M. J. (1991). Value-expressive versus utilitarian advertising appeals: When and why to use which appeal. *Journal of Advertising*, *20*(3), 23-33.

Kang, J., Tang, L., Lee, J. Y., & Bosselman, R. H. (2012). Understanding customer behavior in name-brand Korean coffee shops: The role of self-congruity and

functional congruity. *International Journal of Hospitality Management*, *31*(3), 809-818.

Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, *57*(1) 1-22.

Keller, K. L., & Aaker, D. A. (1992). The effects of sequential introduction of brand extensions. *Journal of Marketing Research, 29*(1), 35-50.

Kline, R. B. (2010). *Promise and pitfalls of structural equation modeling in gifted research*. Washington, DC: American Psychological Association.

Kotler, P., & Pfoertsch, W. (2010). *Ingredient branding: making the invisible visible*. Springer Science & Business Media. New York: NY, Springer.

Kreitzberg, D. S. C., Dailey, S. L., Vogt, T. M., Robinson, D., & Zhu, Y. (2016). What is your fitness tracker communicating?: Exploring messages and effects of wearable fitness devices. *Qualitative Research Reports in Communication*, *17*(1), 93-101.

Kwak, D. H., & Kang, J. H. (2009). Symbolic purchase in sport: The roles of self-image congruence and perceived quality. *Management Decision*, *47*(1), 85-99.

Kwon, H. H., & Armstrong, K. L. (2006). Impulse purchases of sport team licensed merchandise: what matters?. *Journal of Sport Management*, *20*(1), 101-119.

Kwon, H. H., Kim, H., & Mondello, M. (2008). Does a Manufacturer Matter in Go-branding? The Influence of a Manufacturer Brand on Sport Team Licensed Apparel. *Sport Marketing Quarterly*, *17*(3), 163-172.

Lavidge, R. J., & Steiner, G. A. (1961). A model for predictive measurements of advertising effectiveness. *The Journal of Marketing, 25*(6), 59-62.

Lee, D., Cottingham, M., Pearson, D., Kim, S. H., & Park, J. (2016). Collaborative strategy in sports industry: team co-branding. *The Service Industries Journal*, *36*(11/12), 595-613.

Lee, D., Kroncke, C., & Johnson, J. E. (2012). Consumer evaluation of brand fit, attitude, and purchase intention of athletic team merchandise. *International Journal of Sport Management and Marketing*, *11*(3/4), 158-171.

Lee, D., Pierce, D., Kim, K. O., Krill, C., & Felver, N. (2014). Cross cultural differences in consumer evaluation of cobranding in sport. *The Journal of SPORT*, *3*(2), 203-220.

Leigh, J. H., & Gabel, T. G. (1992). Symbolic interactionism: Its effects on consumer behavior and implications for marketing strategy. *Journal of Consumer Marketing*, *9*(1), 27-38.

Leuthesser, L., Kohli, C., & Suri, R. (2003). 2+ 2= 5? A framework for using co-branding to leverage a brand. *Journal of Brand Management*, *11*(1), 35-47.

Levin, A. M., Davis, J. C., & Levin, I. (1996). Theoretical and empirical linkages between consumers' responses to different branding strategies. *ACR North American Advances*, *23*(1), 296-300.

Levy, S. J. (1959). *Symbols by which we buy. In L. H. Stockman (Ed.), Advancing marketing efficiency* (pp. 409–416). Chicago: American Marketing Association.

Liu, F., Li, J., Mizerski, D., & Soh, H. (2012). Self-congruity, brand attitude, and brand loyalty: a study on luxury brands. *European Journal of Marketing*, *46*(7/8), 922-937.

Lunney, A., Cunningham, N. R., & Eastin, M. S. (2016). Wearable fitness technology: A structural investigation into acceptance and perceived fitness outcomes. *Computers in Human Behavior*, *65*, 114-120.

Malhotra, N. K. (1988). Self concept and product choice: An integrated perspective. *Journal of Economic Psychology*, *9*(1), 1-28.

Martín-Consuegra, D., Díaz, E., Gómez, M., & Molina, A. (2019). Examining consumer luxury brand-related behavior intentions in a social media context: The moderating role of hedonic and utilitarian motivations. *Physiology & Behavior*, *200*, 104-110.

Mathews-Lefebvre, C., & Valette-Florence, P. (2014). Manufacturer brand value and the respective role of brand sensitivity, situational involvement and enduring involvement. *Journal of Brand Management*, *21*(3), 236-253.

Mazodier, M., & Merunka, D. (2014). Beyond brand attitude: Individual drivers of purchase for symbolic cobranded products. *Journal of Business Research*, *67*(7), 1552-1558.

McKee, S. (2009). The pros and cons of cobranding. *Bloomberg.* Retrieved from https://www.bloomberg.com/news/articles/2009-07-10/the-pros-and-cons-of-co-branding

Monga, A. B., & Lau-Gesk, L. (2007). Blending cobrand personalities: An examination of the complex self. *Journal of Marketing Research*, *44*(3), 389-400.

Monroe, K. B., & Krishnan, R. (1985). The effect of price on subjective product evaluations. *Perceived Quality*, *1*(1), 209-232.

Monsuwé, T. P., Dellaert, B. G., & De Ruyter, K. (2004). What drives consumers to shop online? A literature review. *International Journal of Service Industry Management*, *15*(1), 102-121.

Moon, H., & Sprott, D. E. (2016). Ingredient branding for a luxury brand: The role of brand and product fit. *Journal of Business Research*, *69*(12), 5768-5774.

Na, S., Kunkel, T., & Doyle, J. (2020). Exploring athlete brand image development on social media: the role of signalling through source credibility. *European Sport Management Quarterly*, *20*(1), 88-108.

Norris, D. G. (1992). Ingredient branding: a strategy option with multiple beneficiaries. *Journal of Consumer Marketing*, *9*(3), 19-31.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory* (3rd ed.). New York, NK: McGraw-Hill.

O'cass, A., & Frost, H. (2002). Status brands: examining the effects of non-product-related brand associations on status and conspicuous consumption. *Journal of Product & Brand Management*, *11*(2), 67-88.

Obal, M. (2014). Utilizing Amazon Mechanical Turk to Gather Data: Pros and Cons. Retrieved from http://library.constantcontact.com/download/get/file/1102707681626-131/Utilizing+Amazon+Mechanical+Turk+to+Gather+Data.pdf

Oeppen, J., & Jamal, A. (2014). Collaborating for success: managerial perspectives on co-branding strategies in the fashion industry, *Journal of Marketing Management*, *30*(9/10), 925-948.

Onkvisit, S., & Shaw, J. (1987). Self-concept and image congruence: some research and managerial implications. *Journal of Consumer Marketing, 4*(1), 13-23.

Osborne, J., & Waters, E. (2002). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research & Evaluation*, *8*(1), 1-9.

Paolacci, G., Chandler, J., & Ipeirotis, P. G. (2010). Running experiments on amazon mechanical turk. *Judgment and Decision Making*, *5*(5), 411-419.

Park, C. W., Jaworski, B. J., & Maclnnis, D. J. (1986). Strategic brand concept-image management. *The Journal of Marketing*, *50*(4)135-145.

Park, C. W., Jun, S. Y., & Shocker, A. D. (1996). Composite branding alliances: An investigation of extension and feedback effects. *Journal of Marketing Research*, *33*(4) 453-466.

Park, C. W., Milberg, S., & Lawson, R. (1991). Evaluation of brand extensions: The role of product feature similarity and brand concept consistency. *Journal of Consumer Research*, *18*(2), 185-193.

Peter, J. P. (1981). Construct validity: A review of basic issues and marketing practices. *Journal of Marketing Research*, *18*(2), 133-145.

Pradhan, D., Duraipandian, I., & Sethi, D. (2016). Celebrity endorsement: How celebrity–brand–user personality congruence affects brand attitude and purchase intention. *Journal of Marketing Communications*, *22*(5), 456-473.

Prince, M., & Davies, M. (2002). Co-branding partners: What do they see in each other? *Business Horizons*, *45*(5), 51-55.

Pronschinske, M., Groza, M. D., & Walker, M. (2012). Attracting Facebook fans': The importance of authenticity and engagement as a social networking strategy for professional sport teams. *Sport Marketing Quarterly*. *21*(4), 221-231.

Quester, P. G., Karunaratna, A., & Goh, L. K. (2000). Self-congruity and product evaluation: a cross-cultural study. *Journal of Consumer Marketing, 17*(6), 525-535.

Radford, S. K., & Bloch, P. H. (2011). Linking innovation to design: Consumer responses to visual product newness. *Journal of Product Innovation Management*, *28*(1), 208-220.

Rajendran, K.N. & Hariharan, H.S. (1996). Understanding value: the role of consumer preferences. *Journal of Marketing Management*, 6, 8-19.

Rao, A. R., & Ruekert, R. W. (1994). Brand alliances as signals of product quality. *Sloan Management Review*, *36*(1), 87-87.

Rao, A. R., Qu, L., & Ruekert, R. W. (1999). Signaling unobservable product quality through a brand ally. *Journal of Marketing Research*, *36*(2), 258-268.

Riley, D., Charlton, N., & Wason, H. (2015). The impact of brand image fit on attitude towards a brand alliance. *Management & Marketing*, *10*(4), 270-283.

Shelly, S. (2017). Wearable technology market worth $56.8 billion by 2025 with a growing CAGR of 11.28%. *Wearable Technology Market.* Retrieved from www.marketsandmarkets.com/PressReleases/wearable-electronics.asp

Shocker, A. D. (1995). Positive and negative effects of brand extension and co-branding. *ACR North American Advances*, *22*(1)*,* 432-434.

Simonin, B. L., & Ruth, J. A. (1995). Bundling as a strategy for new product introduction: Effects on consumers' reservation prices for the bundle, the new product, and its tie-in. *Journal of Business Research*, *33*(3), 219-230.

Simonin, B. L., & Ruth, J. A. (1998). Is a company known by the company it keeps? Assessing the spillover effects of brand alliances on consumer brand attitudes. *Journal of Marketing Research*, *35*(1), 30-42.

Singh, J., P. Kalafatis, S., & Ledden, L. (2014). Consumer perceptions of cobrands: The role of brand positioning strategies. *Marketing Intelligence & Planning*, *32*(2), 145-159.

Sirgy, M. J. (1982). Self-concept in consumer behavior: A critical review. *Journal of Consumer Research*, *9*(3), 287-300.

Sirgy, M. J., & Su, C. (2000). Destination image, self-congruity, and travel behavior: Toward an integrative model. *Journal of Travel Research*, *38*(4), 340-352.

Sirgy, M. J., Grewal, D., & Mangleburg, T. (2000). Retail environment, self-congruity, and retail patronage: An integrative model and a research agenda. *Journal of Business Research*, *49*(2), 127-138.

Sirgy, M. J., Grewal, D., Mangleburg, T. F., Park, J. O., Chon, K. S., Claiborne, C. B., ... & Berkman, H. (1997). Assessing the predictive validity of two methods of measuring self-image congruence. *Journal of the Academy of Marketing Science*, *25*(3), 229.

Sirgy, M. J., Grzeskowiak, S., & Su, C. (2005). Explaining housing preference and choice: The role of self-congruity and functional congruity. *Journal of Housing and the Built Environment*, *20*(4), 329-347.

Sirgy, M. J., Lee, D. J., Johar, J. S., & Tidwell, J. (2008). Effect of self-congruity with sponsorship on brand loyalty. *Journal of Business Research*, *61*(10), 1091-1097.

Smith, S. M., Roster, C. A., Golden, L. L., & Albaum, G. S. (2016). A multi-group analysis of online survey respondent data quality: Comparing a regular USA consumer panel to MTurk samples. *Journal of Business Research*, *69*(8), 3139-3148.

Solomon, M. R. (1983). The role of products as social stimuli: A symbolic interactionism perspective. *Journal of Consumer Research*, *10*(3), 319-329.

Spears, N., & Singh, S. N. (2004). Measuring attitude toward the brand and purchase intentions. *Journal of Current Issues & Research in Advertising*, *26*(2), 53-66.

Speed, R., & Thompson, P. (2000). Determinants of sports sponsorship response. *Journal of the Academy of Marketing Science*, *28*(2), 226-238.

Statista. (2014). Top sport brands among U.S consumers. Retrieved from https://www.statista.com/statistics/305819/brand-purchasing-top-50-sporting-brands-united-states/

Statista. (2018). Global sales of the top performance apparel, accessories and footwear companies 2018. Retrieved from https://www.statista.com/statistics/900271/leading-sportswear-and-performance-wear-companies-by-sales-worldwide/

Su, Y., & Kinkel, T. (2019). Beyond brand fit: The influence of brand contribution on the relationship between service brand alliances and their parent brands. *Journal of Service Management*, *30*(2), 252-275.

Swaminathan, V., Stilley, K. M., & Ahluwalia, R. (2009). When brand personality matters: The moderating role of attachment styles. *Journal of Consumer Research*, *35*(6), 985-1002.

Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing*, *77*(2), 203-220.

Tsiotsou, R. H., Alexandris, K., & Bettina Cornwell, T. (2014). Using evaluative conditioning to explain corporate co-branding in the context of sport sponsorship. *International Journal of Advertising*, *33*(2), 295-327.

Uggla, H. (2004). The brand association base: A conceptual model for strategically leveraging partner brand equity. *Journal of Brand Management*, *12*(2), 105-123.

Usakli, A., & Baloglu, S. (2011). Brand personality of tourist destinations: An application of self-congruity theory. *Tourism Management*, *32*(1), 114-127.

Varadarajan, P. R. (1986). Cooperative sales promotion: An idea whose time has come. *Journal of Consumer Marketing*, *3*(1), 15-33.

Voss, K. E., & Tansuhaj, P. (1999). A consumer perspective on foreign market entry: building brands through brand alliances. *Journal of International Consumer Marketing*, *11*(2), 39-58.

Washburn, J. H., Till, B. D., & Priluck, R. (2000). Co-branding: brand equity and trial effects. *Journal of Consumer Marketing*, *17*(7), 591-604.

Wheatley, J. J., Walton, R. G., & Chiu, J. S. (1977). The influence of prior product experience, price and brand on quality perception. Advances in Consumer Research, 4, 72-77.

Wu, D. G., & Chalip, L. (2013). Expected price and user image for branded and co-branded sports apparel. *Sport Marketing Quarterly*, *22*(3), 138-151.

Yu, H., Lee, D., Cottingham, M., & Lee-seob, M. (2019). Consumer perceptions to luxury co-branding partnership in sport wearable market. *International Journal of Human Movement Science*, *13*(3), 17-29.

Zaharia, N., Biscaia, R., Gray, D., & Stotlar, D. (2016). No more "good" intentions: Purchase behaviors in sponsorship. *Journal of Sport Management*, *30*(2), 162-175.

Zaichkowsky, J. L. (1985). Measuring the involvement construct. *Journal of Consumer Research*, *12*(3), 341-352.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *The Journal of Marketing, 52*(3), 2-22.

APPENDIX A
IRB approval

UNIVERSITY of HOUSTON
DIVISION OF RESEARCH
Institutional Review Boards

APPROVAL OF SUBMISSION

April 30, 2019

Hoyeol Yu

hyu15@uh.edu

Dear Hoyeol Yu:

On April 30, 2019, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	Symbolic and Ingredient Co-Branding Strategies in the Sports Context.
Investigator:	Hoyeol Yu
IRB ID:	STUDY00001579
Funding/ Proposed Funding:	Name: Unfunded
Award ID:	
Award Title:	
IND, IDE, or HDE:	None
Documents Reviewed:	• Recruitment Material.pdf, Category: Other; • Consent Form.pdf, Category: Other; • Verbal Script.pdf, Category: Other; • HRP-503_Hoyeol Yu.pdf, Category: IRB Protocol; • HRP-502e_HoyeolYu.pdf, Category: Consent Form; • Dissertation_Questionnaire_0323IRB.pdf, Category: Other;
Review Category:	Exempt
Committee Name:	Not Applicable
IRB Coordinator:	Sandra Arntz

The IRB approved the study on April 30, 2019 ; recruitment and procedures detailed within the approved protocol may now be initiated.

As this study was approved under an exempt or expedited process, recently revised regulatory requirements do not require the submission of annual continuing review documentation. However, it is critical that the following submissions are made to the IRB to ensure continued compliance:

UNIVERSITY of HOUSTON

DIVISION OF RESEARCH
Institutional Review Boards

- Modifications to the protocol prior to initiating any changes (for example, the addition of study personnel, updated recruitment materials, change in study design, requests for additional subjects)
- Reportable New Information/Unanticipated Problems Involving Risks to Subjects or Others
- Study Closure

Unless a waiver has been granted by the IRB, use the stamped consent form approved by the IRB to document consent. The approved version may be downloaded from the documents tab.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system.

Sincerely,

Research Integrity and Oversight (RIO) Office
University of Houston, Division of Research
713 743 9204
cphs@central.uh.edu
http://www.uh.edu/research/compliance/irb-cphs/

APPENDIX B
QUESTIONNAIRE

The University of Houston (UH)
Study title: "symbolic and ingredient co-branding strategies in the sport industry"

My name is Hoyeol Yu and I am a doctoral student in Sport and Fitness Administration at the University of Houston. I am conducting a study that aims to explore various perspectives from individuals regarding wearable sport device of fitness tracker and its brand. We invite you to take part in a research study about "branding strategy" because you meet the following criteria: over 18-year-old and living in the United States. If not, please do not participate in this survey. In general, your participation in the research involves a series of questionnaires that you will be given to answer the items. You will receive compensation for participation.

This survey is completely voluntary and will last approximately 10-12 minutes to complete, and you can stop the survey and exit anytime you like. This survey is completely confidential that no identifiable information will be recorded. Your participation in this project is confidential and your responses will remain anonymous. Also, if you are a student, a decision to participate or not or to withdraw your participation will have no effect on your standing. This study aims to survey around 300-400 individuals who have been following team sports. Data will be analyzed via statistical programs and information found in this study will only be used for this research. Once completed, these results may be published in journal articles or presented at conferences. The results will be kept in the primary investigator's office for three years, and then destroyed permanently.

Risks: None of the questions should lead you to answers that would be damaging to you personally or professionally. No one will be able to match you to your answers.
Benefits: There is no direct benefit to participation. It is voluntary for individuals whether or not participate in this study.
Subject's rights: All subjects have right to stop at any time if they wish.
By participating in this survey, you acknowledge the survey is voluntary and understand that, if you have questions, concerns, or complaints, or think the research has hurt you, you should talk to the research team: HoYeol Yu (*hyu15@uh.edu or 850-345-9445), or the PI's advisor Dr. Dong Hun Lee (dlee23@uh.edu or 713-743-5782).*This research has been reviewed and approved by the University of Houston Institutional Review Board (IRB). You may also talk to them at (713) 743-9204 or cphs@central.uh.edu if:

ALL RESEARCH PROJECTS THAT ARE CARRIED OUT BY INVESTIGATORS AT THE UNIVERSITY OF HOUSTON ARE GOVERNED BY REQUIREMENTS OF THE UNIVERSITY AND THE FEDERAL GOVERNMENT. I HAVE READ (OR HAVE HAD READ TO ME) THE CONTENTS OF THIS CONSENT FORM AND HAVE BEEN ENCOURAGED TO ASK QUESTIONS. I HAVE RECEIVED ANSWERS TO

MY QUESTIONS. I GIVE MY CONSENT TO PARTICIPATE IN THIS STUDY. I HAVE RECEIVED A COPY OF THIS FORM FOR MY RECORDS AND FUTURE REFERENCE.
I have read the above information. I was encouraged to ask questions and have received answers. Please click on the "I AGREE" if agree to participate in the study.

Purpose of Study: This study aims to explore various perspectives from individuals regarding wearable sport device (i.e., fitness tracker) and its brand. In this study, you will be asked a series of questions pertaining to branding strategy under two conditions: (1) **solo-brand** and (2) **dual-brand**. After reading given scenarios in each condition, please answer the following questions with your best ability. We would greatly appreciate your participation in this study.

Section 1: Please write, check, or circle your answers.

1. Have you possessed any type of wearable sports devices (e.g., smartwatch, fitness tracker, wireless headphone, etc.)?	Yes_____ No_____
2. "IF YES", please indicate the brand, name, and price of your wearable sports device?	_____ $_____
	Not Interested Very Interested
3. "IF NEVER", would you be interested in wearable sports devices (e.g., smartwatch, fitness tracker, wireless headphone, etc.)?	1 2 3 4 5 6 7

Section 2: Solo-brand
Consider the following scenario: Under Armour sells fitness trackers in the current market. Considering that you may have an opportunity to purchase Under Armour's fitness tracker, please see the following ad pertaining to Under Armour's fitness tracker.

*Size: 17.5mm(W) x 11.2mm(T)

*Measures sleep, resting heart rate & steps

*Functions as a watch, alarm clock & displays texts, caller ID, calendar notifications

*Price range: $80-$89

---------Please read the statement below and answer the questions with the extent to which you agree or disagree.

"Take a moment to think of the Under Armour's fitness tracker. Think about the people who would use the Under Armour's fitness tracker. Imagine those consumers in your

mind and then describe them using one or more adjectives such as, modern, classy, athletic, stylish, sexy, high status or whatever personal adjectives you would use to describe the users of the Under Armour's fitness tracker. Once you have done this, indicate your agreement or disagreement to the following questions:"

Questions	Strongly Disagree			Neutral			Strongly Agree
4. Using the Under Armour's FITNESS TRACKER is consistent with how I see myself.	1	2	3	4	5	6	7
5. This Under Armour's FITNESS TRACKER is consistent with how I would like to see myself.	1	2	3	4	5	6	7
6. This Under Armour's FITNESS TRACKER is consistent with how I believe others see me.	1	2	3	4	5	6	7
7. This Under Armour's FITNESS TRACKER is consistent with how I would like others see me.	1	2	3	4	5	6	7

Section 3: Solo-brand

Thinking of the Under Armour's fitness tracker that you would be willing to buy, the following items are concerned with how you **feel and perceive about the Under Armour's fitness tracker**. Please indicate the extent to which you agree or disagree with the following questions.

Questions	Strongly Disagree			Neutral			Strongly Agree
8. The Under Armour's FITNESS TRACKER should have consistent quality.	1	2	3	4	5	6	7
9. The Under Armour's FITNESS TRACKER should be well made.	1	2	3	4	5	6	7
10. The Under Armour's FITNESS TRACKER should have an acceptable standard of quality.	1	2	3	4	5	6	7
11. The Under Armour's FITNESS TRACKER would perform consistently.	1	2	3	4	5	6	7
12. The Under Armour's FITNESS TRACKER is visually striking.	1	2	3	4	5	6	7
13. The Under Armour's FITNESS TRACKER is good looking.	1	2	3	4	5	6	7
14. The Under Armour's FITNESS TRACKER looks appealing.	1	2	3	4	5	6	7
15. The Under Armour's FITNESS TRACKER is reasonably priced.	1	2	3	4	5	6	7
16. The Under Armour's FITNESS TRACKER is a good product for the price.	1	2	3	4	5	6	7

Please indicate how you perceive the **Under Armour's fitness tracker** with the following adjectives.

17. Unappealing	3	2	1	0	1	2	3	Appealing
18. Bad	3	2	1	0	1	2	3	Good
19. Unpleasant	3	2	1	0	1	2	3	Pleasant
20. Unfavorable	3	2	1	0	1	2	3	Favorable
21. Unlikable	3	2	1	0	1	2	3	Likable

Section 4: Co-branding

The purpose of this section is to explore various perspectives from individuals regarding **CO-BRANDING STRATEGY** (e.g., Apple Watch Nike+) toward fitness tracker and its brands. You will be given two scenarios in this section. We would greatly appreciate it if you could answer the following questions with your best ability.

Scenario 1: Co-branding
If Under Armour plans to **PARTNER** with **another brand**, which of the followings do you see the **BEST FIT**. Please **CHECK ONLY ONE**.

Now, we would like to know how you see this strategic approach in the co-branding (i.e., Under Armour + Your Selection of PATNER BRAND) whether it is symbolic or functional. Please read the definition below and indicate one appropriate number that best reflects your opinion.

Symbolic co-branding is defined as a secondary brand's symbolic attributes (e.g., prestige or status brands that contribute to design or color) incorporated into a primary sports brands. ****Functional co-branding*** is defined as a secondary brand's functional or technological attributes (e.g., enhancing products' performance) incorporated into the primary sports brands."

		Symbolic			Neutral			Functional
22. UNDER ARMOUR +	Your Selection	1	2	3	4	5	6	7

Scenario 2: Co-branding

Under Armour and YOUR SELECTION of PARTNER BRAND announces that they will plan to manufacture a new co-branded fitness tracker. Considering that you may have an opportunity to purchase the co-branded fitness tracker (Under Armour and YOUR SELECTION of PARTNER BRAND), please see the following ad pertaining to **co-branded fitness tracker**.

*Size: 17.5mm(W) x 11.2mm(T)

*Measures sleep, resting heart rate & steps

*Functions as a watch, alarm clock & displays texts, caller

*Size: 17.5mm(W) x 11.2mm(T)

*Measures sleep, resting heart rate & steps

*Functions as a watch, alarm clock & displays texts, caller ID, calendar notifications

Please read the statement below and answer the questions with the extent to which you agree or disagree.

"Take a moment to think about the co-branded fitness tracker. Think about the people who would use the CO-BRANDED fitness tracker. Imagine those consumers in your mind and then describe them using one or more adjectives such as, modern, classy, athletic, stylish, sexy, high status or whatever personal adjectives you would use to describe the user of the CO-BRANDED fitness tracker. Once you have done this, indicate your agreement or disagreement to the following statement:"

Questions	Strongly Disagree			Neutral			Strongly Agree
23. Using the CO-BRANDED fitness tracker is consistent with how I see myself.	1	2	3	4	5	6	7
24. This CO-BRANDED fitness tracker is consistent with how I would like to see myself.	1	2	3	4	5	6	7

25. This CO-BRANDED fitness tracker is consistent with how I believe others see me.	1	2	3	4	5	6	7
26. This CO-BRANDED fitness tracker is consistent with how I would like others see me.	1	2	3	4	5	6	7

Section 5: Co-branding

Thinking of the CO-BRANDED fitness tracker that you would be willing to buy, the following items are concerned with how you **feel and perceive about the CO-BRANDED fitness tracker and its brands**. Please indicate the extent to which you agree or disagree with the following questions.

Questions	Strongly Disagree			Neutral			Strongly Agree
27. The CO-BRANDED fitness tracker should have consistent quality.	1	2	3	4	5	6	7
28. The CO-BRANDED fitness tracker should be well made.	1	2	3	4	5	6	7
29. The CO-BRANDED fitness tracker should have an acceptable standard of quality.	1	2	3	4	5	6	7
30. The CO-BRANDED fitness tracker would perform consistently.	1	2	3	4	5	6	7
31. The CO-BRANDED fitness tracker is visually striking.	1	2	3	4	5	6	7
32. The CO-BRANDED fitness tracker is good looking.	1	2	3	4	5	6	7
33. The CO-BRANDED fitness tracker looks appealing.	1	2	3	4	5	6	7
34. The CO-BRANDED fitness tracker is reasonably priced.	1	2	3	4	5	6	7
35. The CO-BRANDED fitness tracker is a good product for the price.	1	2	3	4	5	6	7
36. I think Under Armour and (your selection of partner brand) have consistent image.	1	2	3	4	5	6	7
37. I think Under Armour and (your selection of partner brand) are complementary in their images.	1	2	3	4	5	6	7
38. I think Under Armour and (your selection of partner brand) images fit each other.	1	2	3	4	5	6	7
39. I think the co-brands of Under Armour and (your selection of partner brand) and the new product complement each other.	1	2	3	4	5	6	7
40. I think the co-brands of Under Armour and (your selection of partner brand) fit with the product.	1	2	3	4	5	6	7

41. I think this is a very appropriate product for participating co-brands of Under Armour and (your selection of partner brand).	1	2	3	4	5	6	7

Intention Questions: What are your behavioral intentions toward the CO-BRANDED fitness tracker?

Questions	Strongly Disagree			Neutral			Strongly Agree
42. This co-branding would make me more likely to use the fitness tracker.	1	2	3	4	5	6	7
43. I would be more likely to buy the co-branded fitness tracker as a result of this co-branding partnership.	1	2	3	4	5	6	7
44. I would buy the co-branded (Under Armour and your selection of partner brand) fitness tracker.	1	2	3	4	5	6	7
45. The next time I need to buy a fitness tracker, I would consider buying the co-branded (Under Armour and your selection of partner brand) fitness tracker.	1	2	3	4	5	6	7

Please indicate how you perceive the fitness tracker co-branded by **Under Armour and YOUR SELECTION of PARTNER BRAND** with the following adjectives.

				Neutral				
46. Unappealing	3	2	1	0	1	2	3	Appealing
47. Bad	3	2	1	0	1	2	3	Good
48. Unpleasant	3	2	1	0	1	2	3	Pleasant
49. Unfavorable	3	2	1	0	1	2	3	Favorable
50. Unlikable	3	2	1	0	1	2	3	Likable

Gender : Female___ Male___ **Age :** _____
Race : African-American/Black___ Caucasian/White___ Hispanic___ Asian___ Other____(specify)
Income : _____

BIOGRAPHICAL SKETCH

Ho Yeol Yu was born and raised in Pohang, South Korea. He received his Bachelor's degree in Sports Science from Daejin University. In addition, he received his Master of Science degree in Sport Management from Florida State University. He earned his Doctor of Philosophy degree in Kinesiology with an emphasis on Sport and Fitness Administration in 2020. Ho Yeol's research interests include team/brand management, fan behavior, and service quality.