



Universidad
Carlos III de Madrid

TESIS DOCTORAL

New Insights in Co-branding Strategy

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Getafe, Junio 2013

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Acknowledgements

It would not have been possible to write this doctoral thesis without the help and support of the kind people around me, to only some of whom it is possible to give particular mention here.

Above all, I would like to express my deepest gratitude to my principal advisor, Dr. Nora Lado for her excellent guidance, caring, patience, and providing me with an excellent atmosphere for doing research. I would like to thank my second advisor, Dr. Fabrizio Cesaroni, who let me experience the research of freshwater mussels in the field and practical issues beyond the textbooks, patiently corrected my writing and supported my research. I would also like to thank Dr. Lola Duque for guiding and helping me to improve my research. Special thanks goes to Dr. Alberto Maydeu-Olivares, who was willing to participate in my first paper.

I extend my special thanks to my colleagues and friends Rasi Kunapatarawong, Szabolcs Blazsek, Hang Dong, Weixuan Zhu, Ziyuan Tang, Wei Yan, and Ludovica Cesareo for countless help over the last few years. In particular, I am grateful to Rasi Kunapatarawong, Szabolcs Blazsek, and Weixuan Zhu for the help of my final stages of Ph.D. dissertation. There are too many individuals to acknowledge, but I must thank my other PhD mates, Juliana, María, Agata, Jonatan Groba, Gilberto, Mariano Scapin, Matias, and Dimas.

I would like to acknowledge the financial and administrative support of the Department of Business Administration and its staffs, Marié Gómez, Juan Antonio, Raquel Sánchez, Begoña García and Almudena Crespo.

I thank my friend in Taiwan, Rui-Feng Chang, who as a good friend, was always willing to help and give her best suggestions. Many thanks to Kun Liu, YaJun Guo, Jingwei Zhuo and Elena Jin, and other friends in Spain. They were always supporting and encouraging me.

Lastly, I would like to thank my family for all their love and encouragement. For my mother who raised me with a love of science and supported me in all my pursuits. And most of all for my loving, supportive, encouraging, and patient wife Su-Ping Liu whose faithful support during the period of this Ph.D. is so appreciated. Thank you.

Han Chiang Ho
Universidad Carlos III de Madrid
June 2013

Abstract

This thesis focuses on a specific category of co-branded products resulting from the alliance of high-tech products and luxury brands – we refer to them as “High-tech Luxury Co-branded Products” (HLCPs) – whose presence in the market has increased in the last years. HLCPs represent an interesting case to study because they are characterized by both functional attributes (in which cognitive aspects are predominant) and symbolic attributes (in which affective aspects are mostly important). This fact represents a challenging issue which influences consumers’ perceptions and attitudes. In a context of rapid technological progress, consumers find it difficult to assess and compare alternative offerings of high-tech products; therefore, they tend to select the products with a trusted brand name. The association of high-tech products with luxury brands may therefore play a key role in this case.

Furthermore, most studies consider consumers’ attitudes as a whole without accounting for attitudinal components and their drivers separately. In this thesis we take an alternative direction, by decomposing attitude into its main components and by applying the ABC (Affect, Behavior and Cognition) model of attitudes to explore consumers’ preferences. Decomposing attitude into different components provides us with clearer information about customers’ evaluation criteria for co-branded products. The ABC model of attitudes considers affect and cognition as predictors of a behavioral intention. In turn, through applying the ABC model of attitudes, this dissertation intends to identify and empirically examine how the components of attitude interact with each other as well as to explore which components lead to a success in the co-branding context.

One of the major challenges related to co-branded products is that only a “good” fit stimulates a desirable attitude and association, and, therefore, influences consumers’ behavioral intentions (Simonin and Ruth, 1998; Helmig *et al.*, 2007). Generally speaking, high-tech products and luxury goods have contrasting features. Luxury is exclusive and costly, but high-tech products are functional and useful. Thus, do consumers modify their attitudes when faced with a high-tech product with additional luxury attribute? Yet no matter how well luxury goods and electronic products fit with each other, its effect to buy HLCPs still remains unanswered. Thus, the findings from this dissertation would help marketers toward better decision-makings on introduction and positioning of co-branded products.

The first study examines consumers’ attitudes toward HLCPs. We apply the ABC model of attitudes that uses affective responses and cognitive responses to predict consumers’ recommendation to buy HLCPs. We used the path analysis of structural equation modeling (SEM) to perform multi-group analysis to test our empirical model.

The findings reveal that the empirical model is consistent and consumers use affective and cognitive responses to consider these co-branded products. They also pay more attention on the perception of product fit than brand fit. Lastly, our results show that luxurious attributes have stronger impact on consumers' recommendation to buy HLCPs than hi-tech attributes.

The second study explores how cultural differences influence consumers' recommendation to buy HLCPs. The results show that intention to recommend HLCPs is mainly influenced by the affective component of attitude for consumers from Western cultures (e.g., Spanish consumers), while it is mainly influenced by the cognitive component of attitude for consumers from Eastern cultures (e.g., Taiwanese consumers). In addition, Western consumers place more importance on product fit while Eastern consumers emphasize the significance of brand fit. Finally, Taiwanese consumers favor high-technology attributes of co-branded products while Spanish consumers pay more attention to their luxurious attributes.

The third paper examines gender effects on consumer attitude towards HLCPs. Based on the ABC (affect, behavior and cognition) model of attitudes, this study explores how gender moderates the relationship between each component of consumers' attitude and key antecedents. The empirical results show that conditional on the high acceptance of high-tech products, the impact of male consumers' attitude on recommendation to buy HLCPs is higher than for female consumers. Furthermore, as far as attitudes of male consumers are concerned, consumers' recommendation to buy is higher the higher the acceptance of high-tech products and the level of product fit. By contrast, gender differences do not seem to play any role in influencing consumers' affective and cognitive responses.

Resumen en Español

Esta tesis se centra en una categoría específica de productos de marcas conjuntas cuya presencia en el mercado ha aumentado en los últimos años y resulta de la alianza de productos de alta tecnología y marcas de lujo - High-tech Luxury Co-branded products (HLCPs). Los HLCPs representan un caso interesante de estudiar porque se caracterizan tanto por atributos funcionales (en la que predominan aspectos cognitivos) como simbólicos (en la que predominan aspectos afectivos), lo cual condiciona la percepción de los consumidores y sus actitudes. En un contexto de rápido progreso tecnológico, los consumidores encuentran difícil de evaluar y comparar ofertas alternativas de productos de alta tecnología, y por lo tanto, tienden a seleccionar los productos de marcas de confianza. Dado lo anterior, la asociación de productos de alta tecnología con las marcas de lujo podría desempeñar un papel clave en el comportamiento de los consumidores.

La mayoría de los estudios consideran las actitudes de los consumidores como un todo, sin analizar por separado los componentes de la actitud y sus detonadores. En esta tesis doctoral tomamos una dirección alternativa, separando la actitud en sus componentes principales y aplicando el modelo de actitudes ABC (Afecto, Comportamiento y Cognición) para explorar las preferencias de los consumidores. Separar la actitud en sus diferentes componentes nos proporciona una información más clara sobre los criterios de evaluación que siguen los clientes de productos de marcas conjuntas. El modelo de actitudes ABC considera el afecto y la cognición como predictores de la conducta. Mediante la aplicación de éste modelo, esta tesis se propone identificar y analizar empíricamente la interacción de los componentes de la actitud, así como explorar cuales de ellos determinan el éxito de una marca conjunta.

Uno de los principales retos relacionados con los productos de marca conjunta es que solamente una buena compatibilidad entre los productos (“product-fit”) y marcas (“brand-fit”) involucradas es capaz de estimular una actitud deseable y de asociación, y, por lo tanto, influir en el comportamiento de los consumidores (Simonin y Ruth, 1998; que Helmig et al., 2007). En general, los productos de alta tecnología y los bienes de lujo tienen características opuestas. El lujo es exclusivo y costoso, mientras que los productos de alta tecnología son funcionales y útiles. Por lo tanto, ¿los consumidores modificarían sus actitudes frente a un producto de alta tecnología con atributos adicionales de lujo? Sin importar que tan compatibles sean los bienes de lujo y los productos electrónicos, el efecto de esta compatibilidad en la compra de HLCPs permanece sin respuesta. Por lo tanto, las conclusiones de esta tesis podrían ayudar a los comercializadores a tomar mejores decisiones respecto a la introducción y posicionamiento de los productos de marca conjunta.

El primer estudio examina las actitudes de los consumidores hacia los HLCPs. Aplicamos el modelo de actitudes ABC, que utiliza respuestas afectivas y respuestas cognitivas para predecir la recomendación de los consumidores para comprar HLCPs. Por otro lado, utilizamos un modelo de ecuaciones estructurales (SEM) para realizar un análisis multi-grupo y probar nuestro modelo empírico. Las conclusiones ponen de manifiesto que el modelo empírico es coherente y los consumidores usan las respuestas afectivas y cognitivas para examinar los productos de marca conjunta. Del mismo modo, los resultados indican que los consumidores prestan más atención a la compatibilidad de los productos (“product-fit”) que a la compatibilidad de marcas (“Brand-fit”). Por último, concluimos que los atributos de lujo tienen un mayor impacto que los atributos de alta tecnología en la recomendación de los consumidores para comprar HLCPs.

El segundo estudio analiza cómo influyen las diferencias culturales de los consumidores en su recomendación de comprar HLCPs. Los resultados muestran que la intención de recomendar la compra de HLCPs está principalmente influenciada por el componente afectivo de la actitud en las culturas occidentales (por ejemplo, los consumidores españoles), mientras que en el caso de las culturas orientales (p. ej., los consumidores taiwaneses) dicha influencia viene dada principalmente por el componente cognitivo. Además, los consumidores occidentales consideran más importante la compatibilidad de productos (product fit”), mientras que los consumidores orientales hacen hincapié en la compatibilidad de marcas (“brand-fit”). Por último, los consumidores orientales prefieren los atributos de alta tecnología mientras que los consumidores occidentales ponen más atención en los atributos de lujo.

El tercer ensayo examina efectos de género en la actitud del consumidor hacia los HLCPs. Con base en el modelo de actitudes ABC (afecto, comportamiento y cognición), este estudio analiza cómo el género modera la relación entre cada uno de los componentes de las actitudes de los consumidores y sus principales antecedentes. Los resultados empíricos muestran que, dada la gran aceptación de los productos de alta tecnología, el impacto de la actitud de los consumidores en su recomendación de comprar HLCPs es superior para los hombres que para las mujeres. Por otro lado, en lo que se refiere a las actitudes de los consumidores hombres, la recomendación para comprar HLCPs aumenta con la aceptación de productos de alta tecnología y el nivel de compatibilidad del producto (“product-fit”). Por el contrario, las diferencias de género no parecen jugar un papel importante en influir las respuestas cognitivas y afectivas del consumidor.

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Chapter 1

Introduction

Marketers are increasingly using co-branding as a strategy to reduce risks associated with entering new product categories, to gain more market exposure, and to share promotional costs with a partner (Ueltschy and Laroche, 2004; Washburn *et al.*, 2000). The main reason is that, with respect to single branded products, the combination of two brands affects consumer perception, as it enhances product quality and evaluations and increases the consumers' willingness to pay a price premium (Rao *et al.*, 1999). "Because brand names are valuable assets, they may be combined with other brand names to form a synergistic alliance in which the sum is greater than the parts" (Rao and Ruekert, 1994, p. 87). Based on these assumptions, co-branding has been applied to several product categories and business activities, such as arts (d' Astous *et al.*, 2007), sports (Motion *et al.*, 2003), food (Kumar, 2005; Ueltschy and Laroche, 2004), industrial products (Bengtsson and Servais, 2005) airlines (Tsantoulis and Palmer, 2008), advertising (Monga and Lau-Gesk, 2007) and franchising (Wright and Frazer, 2007). Nevertheless, co-branding in the high-tech industry represents a less frequent event (Sengupta and Perry, 1997; Stuart, 1998), and even less is the adoption of a co-branding strategy that implies the association among high-tech and luxury brands.

We focus on a specific category of co-branded products – which we refer to as "High-tech Luxury Co-branded Products" (HLCPs) – that derive from the alliance of high-tech products and luxury brands. In our view, HLCPs represent an interesting context because they combine together both functional attributes (in which cognitive aspects are predominant) and symbolic attributes (in which affective aspect is the most important) (Lim and Ang, 2008; Solomon *et al.*, 2010; Voss *et al.*, 2003). Moreover, our attention to HLCPs is driven by their increasing presence in the market. In a context of rapid technological progress, consumers find it difficult to assess and compare alternative offerings of high-tech products; therefore, they tend to select those products having a trusted brand name (Aaker and Jacobson, 2001).

In order to analyze this type of products we need to better understand how consumers' attitudes are formed. However, most studies consider consumers' attitudes as a whole without accounting for individual attitudinal components and their drivers (Helmig *et al.*, 2007; Simonin and Ruth, 1998; Walchi, 2007). In this study we adopt, therefore, a different approach and decompose attitudes into their different components, according to the suggestions provided by the ABC (Affect, Behavior and Cognition) model. The

ABC model considers states that affect and cognition represent predictors of behavioral intention. Through applying the ABC model of attitudes, this dissertation intends to identify and empirically examine how the components of attitude interact with each other as well as to explore which components lead to a success in the co-branding context.

In analyzing consumers' attitudes, we also assess whether co-branded products show a "good" fit, which stimulates a desirable attitude and association, and therefore, influences consumers' behavioral intentions (Simonin and Ruth, 1998; Helmig *et al.*, 2007). Generally speaking, high-tech products and luxury goods have contrasting features. Luxury is exclusive (Phau and Prendergast, 2000) and costly (Keller, 2009), while high-tech is functional and useful (Gilbert *et al.*, 2003; Hawkins *et al.*, 2001). Thus, the main research question we address with this dissertation is: Do consumers modify their attitudes when faced with a high-tech product with an additional luxury attribute? Yet no matter how well luxury goods and high-tech products fit with each other in HLCPs, to the question of how their combination impacts on consumers' buying behavior still remains unanswered. The findings from this dissertation would thus help marketers toward better decision-makings on the introduction and positioning of co-branded products.

Through three different studies, we are able to better understand consumers' attitudes toward HLCPs and to provide useful marketing information for marketers. This section provides an overall outline of the dissertation.

First Paper: Behavioral Intentions toward Co-branding Strategy of High-technology and Luxury

The first study examines consumers' attitudes toward HLCPs. We apply the ABC model of attitudes that uses affective responses and cognitive responses to predict consumers' recommendation to buy HLCPs. We then employed path analysis of structural equation modeling (SEM) to perform multi-group analysis and empirically test our theoretical model.

The contribution that this study offers contributes to the marketing literature is twofold. First, by separating attitudes into three components (based on the ABC model of attitudes), it analyzes the role played by each individual component of attitude. Second, this study explores which factors drive consumers' attitudes toward co-branded products, such as product fit and brand fit.

Second Paper: The Role of Attitude Components in Co-branded Products: A Cross-cultural Perspective

The second paper studies whether cultural differences affect consumer attitudes

toward HLCPs. Prior studies demonstrate that culture is fundamental in influencing consumers' attitudes to buy products. McCracken (1988), Lim and Ang (2008) and McCort and Malhtra (1993) show that culture is one of the factors that drives consumers' behaviors and conception, and that culture and consumer behavior are strongly related. Hui and Triandis (1986) show that Western culture emphasizes the accomplishment of individual targets. In contrast, Eastern culture underscores the group (e.g., family, friends or colleagues) whose targets are prior to individual targets (Triandis, 1989).

This study aims to investigate the influences of cultural conditioning on consumer attitudes toward HLCPs. We conduct surveys on both Spanish and Taiwanese undergraduate students to capture attitude differences between Western and Eastern cultures. The findings show that, both in Spain and Taiwan, the effects of both (1) attitude toward luxury goods on affective responses, (2) product fit and brand fit on cognitive responses, and (3) cognitive responses (direct effect) are significant on recommendation to buy HLCPs. Our results also show that product fit directly affects both affective responses and recommendation to buy HLCPs in Spain, while only brand fit has a direct effect on recommendation to buy in Taiwan. Additionally, the acceptance of high-tech products affects cognitive responses in Taiwan, and affective responses directly affect cognitive responses in Spain.

By examining cross-cultural differences on consumers' intention to recommend co-branded products, this study thus contributes to the literature in several ways. We contribute to a stream of empirical research in the cultural differences on consumer behaviors by showing that the differences in culture play a key role in influencing consumer intention to recommend co-branded products (McCracken, 1988; Lim and Ang, 2008; McCort and Malhtra, 1993).

Third Paper: The Role of Gender in Consumers' Attitudes in a High-tech Luxury Co-branding Context

The third paper discusses the differences of male and female consumers' attitudes toward HLCPs. Gender differences have been an object of much research effort in recent years. In the marketing field of research, several studies have discussed how gender differentiates and influences consumers' attitudes and behaviors. Among other relevant issues, it has been proven that men and women process information differently, mainly because women tend to engage in more detailed, elaborative and comprehensive information processing in comparison to men (Dubé and Morgan, 1996; Meyers-Levy, 1989; Meyers-Levy and Maheswaran, 1991). While men tend to rely on single or multiple messages with a single inference, women try to assimilate all available information (Kempf *et al.*, 2006). In terms of brand consideration, it has been proven that women are able to establish a higher brand fit than men (Lau and Phau, 2010). This

reflects women's greater sensitivity in recognizing brand images as well as personality dimensions that would match with their self-concept the most. In the case of product consideration, gender has been proven to be a differentiating variable for high tech products and luxury products. As for high-tech products, many studies have demonstrated how males and females have different attitudes and intentions towards them (Brosnan and Davidson, 1996; Brosnan and Lee, 1998; Jeong, 2001; Yang and Lee, 2010). As far as luxury products are concerned, Dubé and Morgan (1996) demonstrate how men and women own luxury products for different reasons. Fashion conscious women tend to focus more on external appearance, and their public self-consciousness tends to be a good descriptor of who they are (Gould and Stern, 1989).

But what happens to male vis-à-vis female attitudes and behavioral intentions when high-tech and luxury products team up to form high-tech luxury co-branded products like HLCPs? This represents a challenging question which has not been explored by previous works that have investigated co-branding in the high-tech industry or that have explored the association of high-tech and luxury brands (Sengupta and Perry, 1997; Stuart, 1998). Provided that men and women seem to assign different importance to both aspects, HLCPs represent a perfect setting to explore the differences in consumer behavior between men and women. In turn, will gender differences influence consumers' attitudes and behaviors toward HLCPs? Also, if it is true that males are more attracted to high-tech products and females to luxury products, which component will prevail in the case of HLCPs?

This study thus contributes to the literature on gender differences by trying to answer the previously mentioned questions above. To address these issues, we extended traditional co-branding research (Simonin and Ruth, 1998) to include the ABC model of attitudes formation scheme specifically designed for HLCP's co-branding contexts. In this extended model, gender can then be viewed as a moderating variable.



It is worth mentioning that previous versions of the first two papers composing this dissertation have been presented to the following conferences:

- the 10th International Marketing Trends Conference, Paris, France (January, 2011).
- the 40th Anniversary Conference of the Academy of Marketing Science (AMS), Miami, U.S.A (May, 2011).
- the 8th Global Brand Conference, Porto, Portugal (April, 2013).
- the 42nd Annual Conference of the European Marketing Academy (EMAC), Istanbul, Turkey (June, 2013).

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Chapter 2

Behavioral Intentions toward Co-branding Strategy of High-technology and Luxury

Abstract

This study examines consumers' attitudes toward co-branded products, which encompass attributes of high-technology and luxury. We named these kinds of co-branded products as "High-tech Luxury Co-branded Products" (HLCPs). We apply the ABC model of attitudes (as opposed to attitude as a whole) that uses affective and cognitive responses to predict consumers' recommendation to buy HLCPs. The findings reveal that consumers use affective and cognitive responses to consider these co-branded products simultaneously. They pay more attention to the perception of product fit than brand fit. Lastly, our results also show that luxurious attributes have stronger impact on consumers' recommendation to buy HLCPs than high-tech attributes.

2.1 Introduction

Marketers are increasingly using co-branding as a strategy to reduce risks associated with entering new product categories, to gain more market exposure, and to share promotional costs with a partner (Ueltschy and Laroche, 2004; Washburn *et al.*, 2000). Previous research reveals that the combination of two brands let consumers experience enhanced product quality and evaluations as well as leading to a premium price rather than a single branded product (Rao *et al.*, 1999). “Because brand names are valuable assets, they may be combined with other brand names to form a synergistic alliance in which the sum is greater than the parts” (Rao and Ruekert, 1994, p. 87). Although many previous studies exist which discuss co-branding strategies in arts (d’Astous *et al.*, 2007), sports (Motion *et al.*, 2003), food (Kumar, 2005; Ueltschy and Laroche, 2004), industrial products (Bengtsson and Servais, 2005) airlines (Tsantoulis and Palmer, 2008), advertising (Monga and Lau-Gesk, 2007) and franchising (Wright and Frazer, 2007), few works have investigated co-branding in the high-tech industry (Sengupta and Perry, 1997; Stuart, 1998) or have explored the association among high-tech and luxury brands. Moreover, antecedent attitude toward co-branded products has an impact on the success of co-branding alliances (Simonin and Ruth, 1998). However, most studies consider consumers’ attitudes as a whole without accounting for attitudinal components and their drivers (Helmig *et al.*, 2007; Simonin and Ruth, 1998; Walchi, 2007). Therefore, decomposing attitude into its main components provides managers with clearer information about customers’ evaluation criteria for co-branded products.

Due to the gap in the literature specified above, this study intends to identify and empirically examine how the components of attitude interact with each other as well as to explore which components lead to a success in the co-branding context. In addition, we explore how consumers’ recommendation intentions are affected by the characteristics of such an alliance. We focus on a specific category of co-branded products that we named “High-tech Luxury Co-branded Products” (HLCPs)” and that represent the alliance of high-tech products and luxury brands. Our attention to HLCPs is driven by the fact that they represent an interesting context characterized by both functional attributes (in which cognitive aspects are predominant) and symbolic attributes (in which affective aspects are mostly important) (Lim and Ang, 2008; Solomon *et al.*, 2010; Voss *et al.*, 2003). Thus, HLCPs represent a perfect co-branding case for studying the interaction between these two components. Our attention to HLCPs is also driven by their increasing presence in the market. In a context of rapid technological progress, consumers find it difficult to assess and compare alternative offerings of high-tech products; therefore, they tend to select the products with a trusted

brand name (Aaker and Jacobson, 2001). Thus, HLCPs represent examples of products that result from the pursuit of co-branding strategies which seek to leverage the reputation of pre-existing brands in order to increase consumers' positive evaluation (Rao *et al.*, 1999; Venkatesh *et al.*, 2000).

One of the major challenges related to co-branded products is that only a “good” fit stimulates a desirable attitude and association and, therefore, influences consumers' recommendation intentions (Simonin and Ruth, 1998; Helmig *et al.*, 2007). Generally, high-tech products and luxury goods have contrasting features. Luxury is exclusive (Phau and Prendergast, 2000) and costly (Keller, 2009), but high-tech products are functional and useful (Gilbert *et al.*, 2003; Hawkins *et al.*, 2001). Thus, we can question if consumers modify their attitudes when faced with a high-tech product with additional luxury attribute. Yet, no matter how well luxury goods and electronic products fit with each other, the effect of that fit on recommending HLCPs still remains unanswered. Moreover, the relevant question here is not simply to assess whether consumers' perception of co-branded products is different from the “usual” high-tech products with comparable technical features, but also to explore the case of how the simultaneously embedded attributes of luxury and high-technology will lead consumers to recommend a product. The findings from this study would help marketers move toward better decision-making on the introduction and positioning of co-branded products.

This study thus contributes to the literature in several ways. First, this study separates attitudes into three components (based on the ABC model of attitudes) and analyzes the importance of each component in co-branded products. Second, this study also explores the simultaneous effect of the three components of consumers' attitudes. Finally, this study identifies important successful drivers for these kinds of co-branded products, such as consumers' emphasis on product fit.

The paper is organized as follows. Section 2.2 reviews the relevant literature and presents the main hypotheses. Section 2.3 discusses the empirical tests. Section 2.4 presents the results. Section 2.5 concludes with a discussion of the findings and managerial implications of the study.

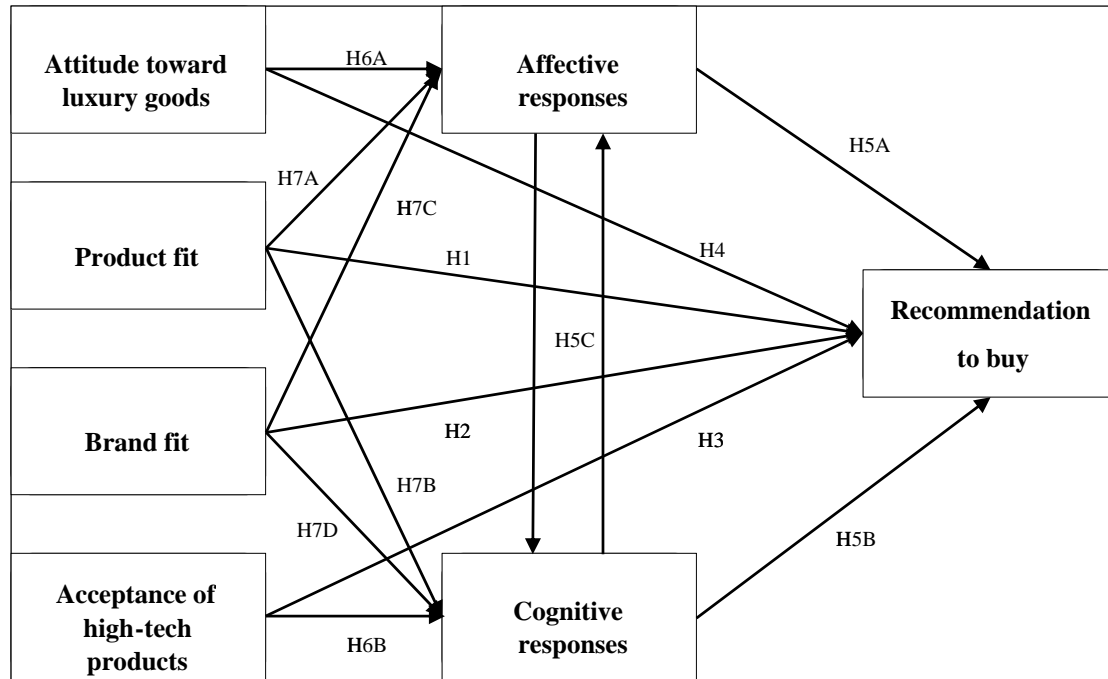
2.2 Literature review and hypotheses

Co-branding is one of the strategic forms of brand alliance (Geylani *et al.*, 2008; Rao *et al.*, 1999; Simonin and Ruth, 1998) and an extended theory from brand extension (Washburn *et al.*, 2000; Walchli, 2007). Geylani *et al.* (2008) define co-branding as a combination of two existing brand names to form a separate and single product with a composite brand name.

Co-branding can provide both benefits and drawbacks. In terms of benefits, co-branding offers established brands an opportunity to increase sales of existing products and add immediate credibility to existing brands. The likelihood of success of co-branded products increases with the degree of awareness, brand equity, familiarity and quality of the constituent brands (Blackett and Boad, 1999; Desai and Keller, 2002; Motion *et al.*, 2003; Park *et al.*, 1996; Rao *et al.*, 1999; Ueltschy and Laroche, 2004; Washburn *et al.*, 2000; Yeung and Wyer, 2005). On the contrary, co-branding also presents risks such as raising consumer mistrust, damaging the host brand's image (Chang, 2009), diluting the host brand's equity (Ueltschy and Laroche, 2004; Washburn *et al.*, 2000) and increasing the host brand's financial burden (Blackett and Boad, 1999). The alliance between two brands may confuse consumers about the image of both brands and consequently damage the brand equity of each brand (Park *et al.*, 1996). Understanding which conditions determine the success for co-branded products thus becomes crucial.

Figure 1 presents the theoretical model. *Recommendation to buy*, *affective responses* and *cognitive responses* are dependent variables, while *attitude toward luxury goods*, *product fit*, *brand fit*, *acceptance of high-tech products* are independent variables.

Figure 1
Theoretical model



2.2.1 The impact of product fit and brand fit on consumers' recommendation to buy HLCPs

Simonin and Ruth (1998) point out that the degrees of “product fit” and “brand fit” among constituent brands determine whether co-branded products will be successful or not. “Product fit” represents the consumers’ perception of the extent of compatibility of two (or more) product categories, and “brand fit” is the degree of consistency of brand images of each partner (Simonin and Ruth, 1998; Park *et al.*, 1991). Most of the literature emphasizes that in a co-branding strategy, a partner selection is the most important decision (Rao and Ruekert, 1994; Rao *et al.*, 1999; Simonin and Ruth, 1998). Therefore, a high degree of fit can induce a positive evaluation on co-branded products (Aaker and Keller, 1990; Bhat and Reddy, 1998; Boush and Loken, 1991) and increase the likelihood of success of co-branded products (Helmig *et al.*, 2007; Menon and Kahn, 2003; Simonin and Ruth, 1998). Besides, a positive complementary degree of constituent brands also leads to a success of co-brand strategy (Monga and Lau-Gesk, 2007; Park *et al.*, 1996). In other words, if brand fit and product fit of two constituent brands are inconsistent, the co-branded product might create unpleasant beliefs and negative judgments in consumers’ minds.

In the case of HLCPs, where constituent brands originate from very different product categories with highly distinct brand images (i.e., hi-technology and luxury), the impacts of brand and product fits on the likelihood of success of co-branded products

are more complex. If HLCPs lead consumers to perceive that both product fit and brand fit are inconsistent, it will impact their willingness to recommend these co-branded products to others. Thus, for the success of HLCPs, it is critical that consumers have positive evaluations for product fit and brand fit of HLCPs. Based on these assumptions, we draw the following hypotheses:

H1: Consumers' recommendation to buy HLCPs is positively affected by product fit of HLCPs.

H2: Consumers' recommendation to buy HLCPs is positively affected by brand fit of HLCPs.

2.2.2 Acceptance of high-tech products as a basic determinant of consumers' recommendation to buy HLCPs

Davis (1989) points out that perceived usefulness and ease of use of information technology are two essential components affecting consumers' acceptance of technological products. With the development of science and technology, high-tech products have become more delicate and complex, integrating many advanced functions into one device. Since a significant amount of techno-babble terminology has been created by high-tech companies and the technical jargon used by trained salespeople may confuse consumers, the evaluation of products' attributes is not an easy task. As a consequence, shopping for high-tech products may involve a big challenge.

In addition, a common perception of high-tech products is that they bring in conveniences for people as well as problems (Hawkins *et al.*, 2001). For example, one may experience pleasure in using computers in order to perform word processing. However, the user may feel frustrated sometimes due to the inability to fully use all functions. This paradox causes users anxieties and frustrations toward high-tech products.

Provided that HLCPs are based on a high-tech product with additional luxurious attributes, a basic element to consider is consumers' acceptance of high-tech products in general. Consumers' acceptance of high-tech products (i.e., the ability to appraise the characteristics) plays a critical role affecting the successful drivers of HLCPs. Therefore, the acceptance of high-tech products should represent a key determinant of a consumer's recommendation to buy HLCPs. Therefore, we hypothesize:

H3: Consumers' recommendation to buy HLCPs is positively affected by the acceptance of high-tech products.

2.2.3 *The effect of pre-attitude toward luxury goods on consumers' recommendation to buy HLCPs*

Attitude is designed to help people integrate information in a meaningful and practical format. For example, in brand alliance, preexisting attitudes toward two brands are highly associated to post-exposure attitudes toward the same brand and partner brand (Simonin and Ruth, 1998) since a favorable pre-attitude toward a brand could create positive spillover effects to influence consumers' post-attitude toward the brand.

Since luxury is one of the two main features of HLCPs, it is worth discussing the motivations toward possessing luxury products. Several authors have previously identified so. For example, some motivations behind the possession of luxury goods are due to social recognition (Park *et al.*, 2008), parental influence (Prendergast and Wong, 2003) and social acceptance (Summers *et al.*, 2006). Wilcox *et al.* (2009) also pointed out that the two prominent motivations of consumers for buying luxury brands are social-adjustive functions and value-expressive functions. Social-adjustive functions present that consumers are attracted by luxury goods for form- or image- relevant reasons. They also helps people to maintain relationships. Once consumers own social-adjustive attitudes toward a product, they are willing to buy such a product to obtain the recognition in a social situation. On the other hand, value-expressive functions are intrinsic aspects and satisfy product function- or quality-relevant reasons to their buyers. Consumers are motivated to have a product to form self-expression when they perceive value-expressive attitudes as important to them. Sometimes the two functions occur separately or simultaneously (Shavitt, 1989).

Nevertheless, sometimes, consumers have negative reactions toward luxury brands to the extent where their value consciousness, personal attitude or social influence result in a not-to-buy recommendation (Phau *et al.*, 2009; Phau and Teah, 2009). These effects might have an impact on the success of HLCPs. Therefore, in this study, irrespective of the function that prevails in consumers' mind, a positive attitude toward luxury brands should represent a pre-condition for the development of a (subsequent) positive attitude toward HLCPs. Based on these considerations, we draw the following hypothesis:

H4: Consumers' recommendation to buy HLCPs is positively affected by attitude toward luxury goods.

2.2.4 *The attitude formation toward HLCPs*

There are several models on attitude. For example, the theory of planned behavior (TPB)¹ demonstrates that any social behavior or behavioral intention could be

¹ In psychology, the theory of planned behavior (TPB) is extended from the theory of reasoned action

interpreted by the behavior of antecedents such as attitude toward the behavior, subjective norm and perceived behavioral control (PBC). Solomon *et al.* (1996) provide the ABC model of attitudes, stating that an attitude is composed of three components: Affect, Behavior and Cognition.

Apart from the fact that there are several models, many studies conclude that the two main dimensions of attitude – affect and cognition – influence consumer’s behavior (Dube *et al.*, 2003; Laurent and Kapferer, 1985; Putrevu and Lord, 1994). Subsequent studies have shown that, even though both dimensions take part in consumers’ assessment of intrinsic and extrinsic product characteristics (Compeau *et al.*, 1998; Da Silva and Syed Alwi, 2006), the affective dimension seems more relevant in the evaluation of hedonic products (Kim and Morris, 2007; Mano and Oliver, 1993) while the cognitive dimension is associated with the evaluation of utilitarian products (Hirschman, 1980; Kim and Morris, 2007). Given that HLCPs present the features of two types of products, both the cognitive and the affective responses should be involved in the process of recommendation to buy.

Cognitive responses are the thought processes of individuals that generate knowledge, awareness, opinion and perception in their minds. The cognitive factor is important for prospective behavioral motivations to understand product attributes (Caro and Garcia, 2007). While most literature points out that both cognitive and affective attributes are important for consumer evaluation of brands, a few empirical studies show that the rational part of a brand is assessed prior to its emotional part (Bhat and Reddy, 1998). Therefore, cognitive brand attributes seem to have important influences on brand preferences (Da Silva and Syed Alwi, 2006).

Brand image studies have also focused their attention on affective aspects of consumer behavior (Aaker, 1982; Batra and Ray, 1985; Burk and Edell, 1989). The definition of “affect” includes mental status exclusively characterized by experienced feelings, emotions and moods such as happiness, anger, depression, gladness and fear. An affective response is based on feelings toward a special stimulus related to cognitive effort (Anand *et al.*, 1988; Westbrook, 1987) and the result of an affective judgment is typically a crucial determinant for daily consumption experiences (Anand *et al.*, 1988), which brings consumers to use it to form a priori consumption experience on which they form their future behavioral decisions (Cowley, 2007).

In the case of HLCPs, hedonic attributes (luxury attributes) are relevant to affective responses while utilitarian attributes (high-tech attributes) are associated with cognitive responses (Lim and Ang, 2008; Solomon *et al.*, 2010; Voss *et al.*, 2003). It is not clear that when the two attributes are combined, which responses consumers would take first

(TRA) (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975) and designed to explain social behavior (Ajzen, 1991).

in order to drive their recommendation to buy HLCPs. Hence, we suppose that both responses influence consumers' recommendation to buy HLCPs. Consequently, we conjecture the following hypotheses:

H5A: Affective responses positively affect consumers' recommendation to buy HLCPs.

H5B: Cognitive responses positively affect consumers' recommendation to buy HLCPs.

Many authors (Anand *et al.*, 1988; Bhat and Reddy, 2001; Johnson and Grayson, 2005) show that consumers' cognitive responses normally occur before affective responses and this process leads to behavioral intention. Affect dominates over cognition when predicting cognitive attitude (Morris *et al.*, 2002); thus, it strongly influences a consumer's attitude toward a product or service (Allen *et al.*, 1992; Barsky and Nash, 2002). Dube *et al.* (2003) have made an attempt to overcome such limitation by introducing a more complex hierarchical structure of consumers' attitudes. According to their structure, the clusters of attributes formed on the basis of their nature (immediate versus deliberative) are nested within affective and cognitive bases.

HLCPs consist of both hedonic and utilitarian attributes, in which consumers might use affective (Mano and Oliver, 1993) and cognitive (Hirschman, 1980) responses to evaluate HLCPs at the same time. As can be seen, previous research reveals that affective dimension of attitude dominates over cognitive dimension of attitude. However, in consumers' minds, affective responses seem to be more fundamental and come before cognitive responses (Helgeson and Ursic, 1994; Zajonc and Markus, 1982). Shiv and Fedorikhin (1999) further reveal that the direction of causality between affect and cognition remains largely unexplored. It is thus unclear which response dominates over the other or whether both responses affect each other. Consequently, we derive the following hypothesis:

H5C: Consumers' cognitive responses and affective responses affect each other.

2.2.5 The roles of mediator of cognitive and affective responses

The ABC model of attitudes provides useful suggestions in this context. The model compares consumers' cognitive ("knowing/belief") and affective ("feeling") judgments of products with the degree of consumer's involvement ("high/low") during the personal behavioral process to recommend products. This is because attitudes ("doing") toward a product are not simply explained in one dimension. The model focuses on the interrelationships among knowing, feeling and doing, in which the relative importance is based on consumers' degree of motivation toward the products. In sum, the ABC

model of attitudes demonstrates the relative impact of the three components.

According to the standard learning hierarchy of the ABC model of attitudes, when consumers emphasize the function, price, and availability of high-involvement in “knowing” products, their recommendation process follows a Beliefs-Affect-Behavior sequence. In contrast, according to the experiential hierarchy of the ABC model of attitudes, consumers act on the basis of emotional reactions (“feeling”). This perspective focuses on the idea regarding intangible product attributes (e.g., aesthetic and brand) shaping consumers’ attitude toward a brand. Thus, the recommendation decision follows an Affect-Beliefs-Behavior sequence.

When consumers desire luxury goods, affective dimension is more pronounced than the cognitive dimension, because luxury goods provide several satisfying features to consumers such as prestige, conspicuousness, materialism, hedonism, self-identity, uniqueness, and quality. All of these features exclusively transcend the values that cognitive aspects could provide (Wiedmann *et al.*, 2007). In the case of HLCPs, we can expect affective responses to play a mediating role between consumers’ general (and pre-existing) attitude toward luxury goods and (subsequent) intention to recommend co-branded products. In contrast, cognitive responses should especially intervene in the relationship between consumers’ general (and pre-existing) acceptance of high-tech products and (subsequent) recommendation to buy HLCPs. Consumers’ attitudes – specifically cognitive responses – thus mediate the relationship between acceptance of high-tech products and recommendation to buy HLCPs. Hence, cognitive and affective dimensions are expected to play different roles in the case of HLCPs, which include both the “knowing” and “feeling” components. While cognitive responses mediate the relationship between acceptance of high-tech products and recommendation intentions, affective responses intervene in the relationship between consumers’ attitudes toward luxury goods and recommendation intentions. As a consequence, we propose the following hypotheses:

H6A: Affective responses positively mediate the relationship between consumers’ pre-attitude toward luxury goods and recommendation to buy HLCPs.

H6B: Cognitive responses positively mediate the relationship between consumers’ acceptance of high-tech products and recommendation intentions of co-branded products.

As mentioned earlier, that brand fit and product fit impact consumers’ recommendation behavior, we argue that both of these fits also affect consumers’ behavior in different ways, generating distinct cognitive, affective and behavioral

responses. In a study by Bhat and Reddy (1998), the impact of product fit on extension evaluation is independent of extensions of symbolic and functional brands. Brand fit is critical to the extension of symbolic brand only with durable brand (e.g., brands of wristwatches) extensions. For non-durable brand (e.g., brands of ice creams) extensions, brand fit is equally critical to functional and symbolic brands. When extensions are symbolic (versus functional), affective responses are more influential than cognitive responses toward products evaluations, but cognitive responses are more important toward the product fit of extensions.

Considering the ABC model of attitudes, it is likely that recommendation to buy HLCPs is affected by product fit and brand fit both directly and indirectly. Apart from the direct effect, the perceived fit between the constituent brands and product categories should impact consumers' cognitive and affective evaluations of the co-branded product, and in turn, on recommendations to buy HLCPs. Thus, the cognitive and affective responses partially mediate the relationships between consumers' recommendation to buy HLCPs and product fit as well as between consumers' recommendation to buy HLCPs and brand fit. Based on these considerations, we draw the following hypotheses:

H7A: Affective responses positively mediate the relationship between product fit and recommendation intentions of HLCPs.

H7B: Affective responses positively mediate the relationship between brand fit and recommendation intentions of HLCPs.

H7C: Cognitive responses positively mediate the relationship between product fit and recommendation intentions of HLCPs.

H7D: Cognitive responses positively mediate the relationship between brand fit and recommendation intentions of HLCPs.

2.3 Empirical analysis and methodology

In order to verify the consistency of our empirical tests, we conducted two surveys in order to collect consumers' responses.

2.3.1 Products

In this section, we test consumers' brand familiarity toward HLCPs used in our studies. This is because when respondents are familiar with the products, they could

easily evaluate the “equal” contributions of the co-branding strategy of these HLCPs (Simonin and Ruth, 1998).

For our first survey, we use cell phones to measure consumers’ attitudes toward co-branded products as cell phones are one of the common electronic products among consumers. Here, we used “SAMSUNG GIORGIO ARMANI” and “LG PRADA” cell phones. All our four brands – SAMSUNG, GIORGIO ARMINI, LG and PRADA – are real brands, not hypothesized brands. These co-branded products are suitable to our study, because they combine both attributes of high-technology and luxury together.

During the first period of the survey, two versions of the questionnaire, SAMSUNG ARMANI or LG PRADA, were used for each HLCP combination and the respondents were randomly assigned to one of the two sets of the questionnaire. Our independent *t*-test showed that consumers’ attitudes are indifferent toward the two high-tech brands – SAMSUNG and LG – ($t = -0.44$, $df = 498$, $p = 0.67$) and the two luxury brands – GIORGIO ARMANI and PRADA – ($t = -1.51$, $df = 474.6$, $p = 0.13$). The results from our first survey also show that, on average, brand familiarity among these four brands are high and closed, with a 7-point Likert scale with 7 representing highly familiar and 1 highly unfamiliar: SAMSUNG ($M = 5.95$), LG ($M = 5.90$), GIORGIO ARMANI ($M = 5.60$) and PRADA ($M = 5.46$).

In order to have a more comprehensive comparison, the second survey replaced real HLCPs of the first survey with fictitious co-branded products. We adopted products that consumers have never seen and used before and hence do not possess well-formed preferences. Therefore, consumers’ preferences are not subject to discreet evaluation, nor are they as sensitive to the appraisal context. In this case, our fictitious HLCPs are (1) SONY & cK, (2) SONY & BURBERRY, (3) PHILIPS & cK and (4) PHILIPS & BURBERRY headphones. We chose headphones as our tested products, because headphones are also one of the common electronic products among consumers. Our two high-tech brands are SONY and PHILIPS and our two luxury brands are Calvin Klein (cK) and BURBERRY.

For our second survey, four different survey versions were used (1) SONY & cK, (2) SONY & BURBERRY, (3) PHILIPS & cK, and (4) PHILIPS & BURBERRY for each HLCP combination and respondents were randomly assigned to one of the four sets of surveys. Our independent *t*-test from our second survey showed that consumers’ attitudes are indifferent toward the two high-tech brands – SONY and PHILIPS – ($t = 0.07$, $df = 327$, $p = 0.95$) and the two luxury brands – cK and BURBERRY – ($t = -2.00$, $df = 327$, $p = .84$). Again, similar to the results of our first survey, on average, brand familiarity among these four brands are also high and closed as in the case of the first survey: SONY ($M = 5.78$), PHILIPS ($M = 5.77$), BURBERRY ($M = 5.77$) and cK ($M = 5.80$).

2.3.2 Respondents

We chose Spanish university students (undergraduate level) as our respondents in order to increase homogeneity of the sample and to minimize random error caused by selecting the general public (Calder *et al.*, 1981). Students completed the surveys as a partial fulfillment of their course in Marketing Management. The first survey was performed in 2010. We obtained five hundred and sixty-six in total. After excluding invalid and low brand familiarity toward the products², we were left with four hundred and ninety-three valid responses (87%). 39% of the sample was male.

In 2013, the surveys containing the same questions were distributed again to Spanish university students at the same university, but with different products and respondents. The selection of valid responses followed the same procedure as the first survey. We obtained three hundred and thirty-one valid responses (81%) out of the total of four hundred and seven responses. 49% of the sample was male.

The ratios of sample size to survey items (30 items) for the sample satisfies the minimum requirements specified by both Gorsuch (1983) and Thompson (2000).

2.3.3 Measures and procedures

For both sets of surveys, participants completed an online survey. When completing online surveys, the product information sheet consisting of three parts – product name, picture of the product, and a set of product features including price – was available for the respondents (See Appendices A and B).

All measures (Appendix C) employed in the two sets of surveys were 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). We translated our questionnaires into Spanish using a back-translation to ensure comparability and equivalence in the meaning of questionnaires (Brislin, 1970; Hult *et al.*, 2008). We adopted these items from previous studies. To measure affective responses (Reliability coefficient – Cronbach Alpha, $\alpha_A(2010) = 0.85$; $\alpha_A(2013) = 0.82$) and cognitive responses ($\alpha_C(2010) = 0.85$; $\alpha_C(2013) = 0.83$), we used the items from Ratchford (1987). To measure the acceptance of high-tech products ($\alpha_H(2010) = 0.92$; $\alpha_H(2013) = 0.91$), we used the items by Roehm and Sternthal (2001). To measure the attitude toward luxury goods ($\alpha_L(2010) = 0.92$; $\alpha_L(2013) = 0.92$), we followed the scale developed by Wilcox *et al.* (2009). To measure the product fit ($\alpha_P(2010) = 0.80$; $\alpha_P(2013) = 0.84$) and brand fit ($\alpha_B(2010) = 0.70$; $\alpha_B(2013) = 0.65$), we used the scale of Simonin and Ruth (1998). Lastly, to measure the

² There are three questions to test brand familiarity for each product. Each question is a 7-point Likert scale of 7 as highly familiar and 1 as highly unfamiliar. Only when the sum of the three questions testing one brand is larger than 7 (at least 2, 2 and more than 2) is the response from that particular survey considered valid.

recommendation to buy ($\alpha_{R(2010)} = .86$; $\alpha_{R(2013)} = .82$), we adopted the scale developed by Baker and Churchill (1977). Our Cronbach's alphas for all the scales were above 0.6. This is considered an acceptable Cronbach's alpha cutoff according to Bagozzi and Yi (1988).

2.4 Results

We used AMOS™ 17 software to perform multi-group analysis to test our conceptual model. Our results showed that we have an extremely good model fit. The values of goodness of fit (GFI), comparative fit index (CFI) and incremental fit index (IFI) were above 0.9 (Bagozzi and Yi, 1988). The root mean square error of approximation (RMSEA), which is another important index of measurement of fit, also had a value of less than 0.5, representing a good model fit (Baumgartner and Homburg, 1996). Lastly, our p -value χ^2 (chi-square test) was larger than 0.05 ($\chi^2(2) = 0.41$, $p = 0.81$; GFI = 1.00; CFI = 1.00; IFI = 1.00; RMSEA = 0.00). After sequentially fixing the non-significant parameters in each sample to zero, the models are shown in Figures 2 and 3.

Table 1 shows that the relationships between *product fit* and *recommendation to buy* are significant in both periods ($Pr_{OR(2013)} = 0.16$, $p < 0.05$; $Pr_{OR(2010)} = 0.18$, $p < 0.05$). Hence, H1 is supported and H2 is rejected, because of the insignificant relationships between *brand fit* and *recommendation to buy* ($Br_{AR(2013)} = -0.06$, $p = 0.43$; $Br_{AR(2010)} = -0.01$, $p = 0.85$) in both periods. *Acceptance of high-tech products* has no influence on *recommendation to buy* in both periods ($Acc_{CR(2013)} = -0.02$, $p = 0.63$; $Acc_{CR(2010)} = -0.01$, $p = 0.84$). Therefore, H3 is not confirmed. *Attitude toward luxury goods* does not affect *recommendation to buy* ($Att_{R(2013)} = 0.05$, $p = 0.37$; $Att_{R(2010)} = 0.04$, $p = 0.33$). We can conclude that H4 is not supported.

Table 1
Effects on recommendation to buy

Hp.s	Proposed path	Year 2010		Year 2013		Critical Ratios for Coef. Differences z
		Coef.	p	Coef.	p	
H ₁	Product fit → Recomm	0.18	0.002 *	0.16	0.037 *	0.33
H ₂	Brand fit → Recomm	-0.01	0.850	-0.06	0.430	0.50
H ₃	High-tech → Recomm	-0.01	0.849	-0.02	0.639	0.25
H ₄	Luxury → Recomm	0.04	0.328	0.05	0.377	0.07

* $p < 0.05$; ** $p < 0.10$; ††: $|z| > 1.645$, $p < 0.10$

Table 2 describes the effects of affective and cognitive responses on recommendation to buy. Both *affective responses* ($\text{Aff}_R(2013) = 0.22, p < 0.01$; $\text{Aff}_R(2010) = 0.22, p < 0.01$) and *cognitive responses* ($\text{Cog}_R(2013) = 0.41, p < 0.01$; $\text{Cog}_R(2010) = 0.35, p < 0.01$) positively affect *recommendation to buy* in both periods. Thus, H5A and H5B are supported. However, H5C is not supported, because only *affective responses* influence *cognitive responses* ($\text{Aff}_C(2013) = 0.35, p < 0.01$; $\text{Aff}_C(2010) = 0.21, p < 0.01$), but not vice versa ($\text{Cog}_A(2013) = -0.09, p = 0.29$; $\text{Cog}_A(2010) = -0.01, p = 0.95$).

Table 2

Effects of affective and cognitive responses on recommendation to buy

Hp.s	Proposed path	Year 2010		Year 2013		Critical Ratios for Coef. Differences	
		Coef.	<i>p</i>	Coef.	<i>p</i>	z	
H _{5A}	Affective → Recomm	0.22	0.000 *	0.22	0.000 *	0.22	
H _{5B}	Cognitive → Recomm	0.35	0.000 *	0.41	0.000 *	0.69	
H _{5C}	Affective → Cognitive	0.21	0.009 *	0.35	0.000 *	1.10	
	Cognitive → Affective	-0.01	0.952	-0.09	0.293	0.75	

* $p < 0.05$; ** $p < 0.10$; ††: $|z| > 1.645, p < 0.10$

Table 3 presents the results of affective and cognitive responses as mediators. In both periods, *attitude toward luxury goods* positively affects *affective responses* ($\text{Att}_A(2013) = 0.60, p < 0.01$; $\text{Att}_A(2010) = 0.52, p < 0.01$), and *affective responses* positively affect *recommendation to buy* ($\text{Aff}_R(2013) = 0.22, p < 0.01$; $\text{Aff}_R(2010) = 0.22, p < 0.01$), supporting H6A. In 2013, the relationship between *acceptance of high-tech products* and *cognitive responses* is significant, but negative ($\text{Acc}_C(2013) = -0.12, p < 0.05$); while in 2010, the relationship is insignificant ($\text{Acc}_C(2010) = -0.01, p = 0.93$). Hence, H6B is not supported. *Product fit* positively affects *affective responses* ($\text{Pro}_A(2013) = 0.27, p < 0.01$; $\text{Pro}_A(2010) = 0.18, p < 0.01$) and *affective responses* positively affects *recommendation to buy* in both periods ($\text{Aff}_R(2013) = 0.22, p < 0.01$; $\text{Aff}_R(2010) = 0.22, p < 0.01$). H7A is supported. As there are no significant relationships between *brand fit* and *affective responses* in both periods ($\text{Bra}_A(2013) = -0.08, p = 0.29$; $\text{Bra}_A(2010) = 0.06, p = 0.29$), H7B is not supported. H7C states that *cognitive responses* play a mediator role in the relationship between *product fit* and consumers' *recommendation to buy*. This hypothesis is supported as *product fit* positively affects *cognitive responses* ($\text{Pro}_C(2013) = 0.16, p < 0.10$; $\text{Pro}_C(2010) = 0.22, p < 0.01$) and *cognitive responses* positively impact *recommendation to buy* in two periods ($\text{Cog}_R(2013) = 0.41, p < 0.01$; $\text{Cog}_R(2010) = 0.35, p < 0.01$). *Brand fit* positively impacts *cognitive responses* ($\text{Bra}_C(2013) = -0.16, p < 0.05$; $\text{Bra}_C(2010) = 0.15, p < 0.10$), and the relationships between *cognitive responses*

and *recommendation to buy* ($\text{CogR}_{(2013)} = 0.41, p < 0.01$; $\text{CogR}_{(2010)} = 0.35, p < 0.01$) are also significant. Therefore, hypothesis H7D is confirmed.

Table 3
Effects of affective and cognitive responses as mediator roles

Hp.s	Proposed path	Year 2010		Year 2013		Critical Ratios for Coef. Differences	
		Coef.	<i>p</i>	Coef.	<i>p</i>	z	
H _{6A}	Luxury → Affective	0.52	0.000 *	0.60	0.000 *	1.70 ††	
	Affective → Recomm	0.22	0.000 *	0.22	0.000 *	0.22	
H _{6B}	Hi-tech → Cognitive	-0.01	0.927	-0.12	0.022 *	1.75 ††	
	Cognitive → Recomm	0.35	0.000 *	0.41	0.000 *	0.69	
H _{7A}	Product fit → Affective	0.18	0.000 *	0.27	0.000 *	1.05	
	Affective → Recomm	0.22	0.000 *	0.22	0.000 *	0.22	
H _{7B}	Brand fit → Affective	0.06	0.289	-0.08	0.287	1.49	
	Affective → Recomm	0.22	0.000 *	0.22	0.000 *	0.22	
H _{7C}	Product fit → Cognitive	0.22	0.000 *	0.16	0.056 **	0.57	
	Cognitive → Recomm	0.35	0.000 *	0.41	0.000 *	0.69	
H _{7D}	Brand fit → Cognitive	0.16	0.011 *	0.15	0.068 **	0.08	
	Cognitive → Recomm	0.35	0.000 *	0.41	0.000 *	0.69	

* $p < 0.05$; ** $p < 0.10$; ††: $|z| > 1.645, p < 0.10$

Furthermore, concerning the entire model, it explains a similar percentage of variance of *recommendation to buy* in both periods ($R^2_{2013} = 0.33$; $R^2_{2010} = 0.34$), and the significant results shown in Tables 1, 2 and 3 reveal a similar model for two periods. For both periods, *attitude toward luxury goods*, *brand fit* and *acceptance of high-tech products* do not have any direct effects on *consumers' recommendation to buy* HLCPs. The effect of *brand fit* on *recommendation to buy* in 2010 is completely mediated by *cognitive responses*.

Figure 2
Empirical estimation: Year 2010

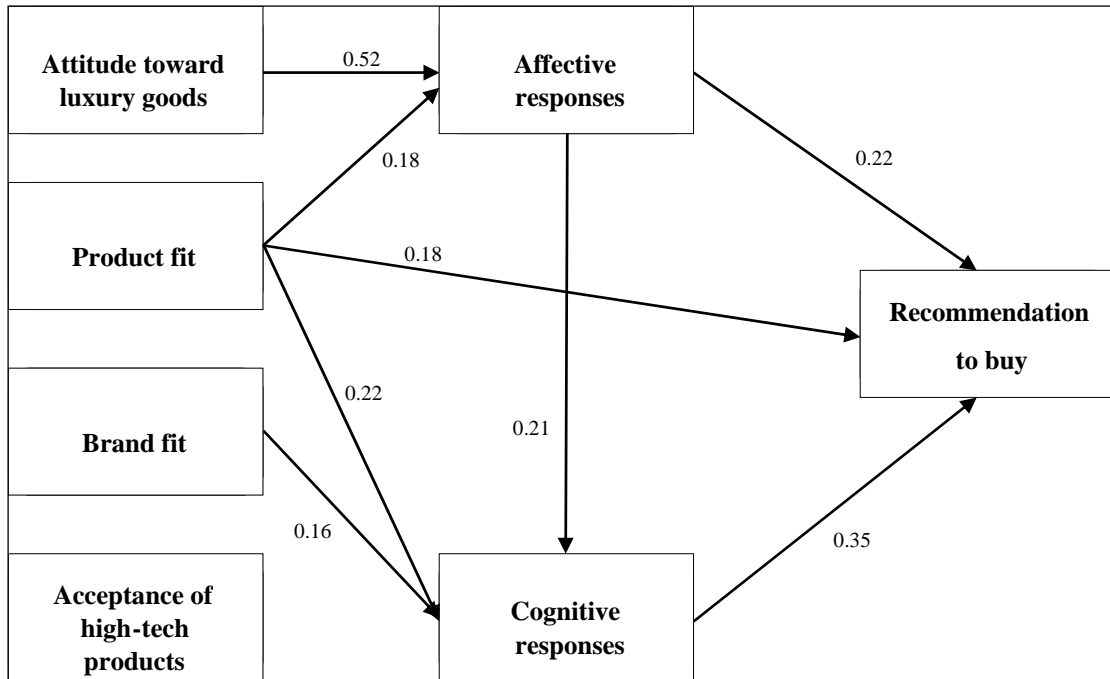
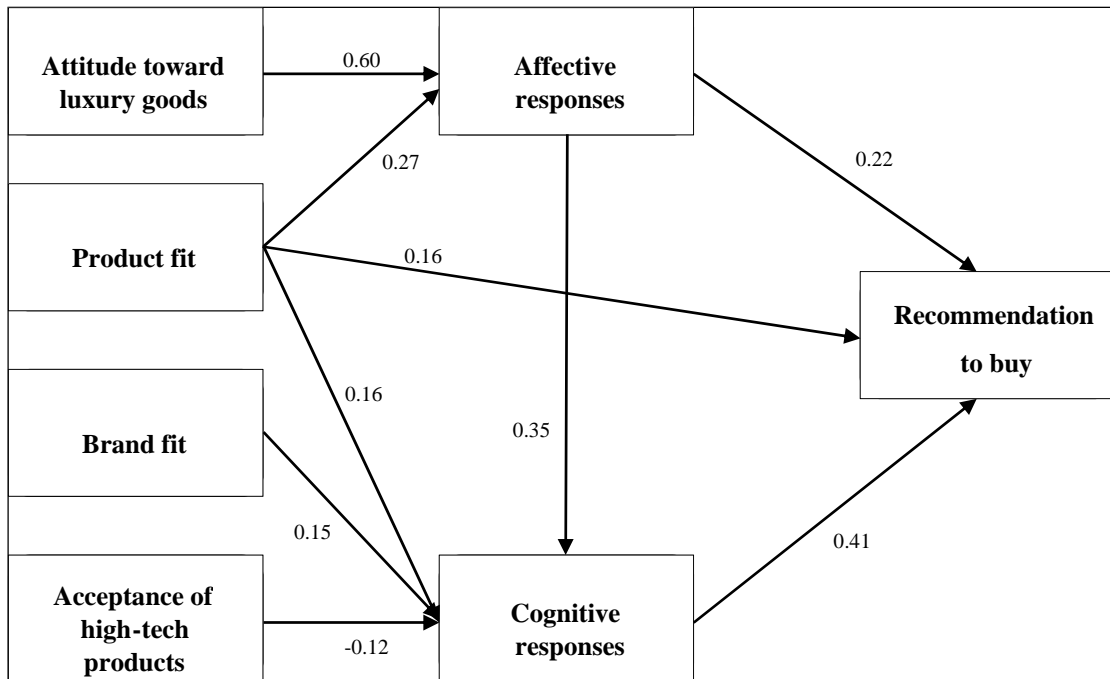


Figure 3
Empirical estimations: Year 2013



2.5 Conclusions

2.5.1 Discussions

The central aim of this study is to identify the drivers of co-branded products, especially for HLCPs. This study provides new insight into important issues regarding product preference development and the exact direction in which to strengthen product evaluation. Most previous research on co-branding mainly deals with analyzing the impact of antecedents on conative attitude (behavioral intention), without untangling the different paths through which the various successful drivers of co-branding may impact consumers' recommendation behavior. By decomposing consumers' attitudes into their three main components, this paper sheds light on the subtle routes underlying consumer behavior in the case of co-branded products.

Our results from both 2010 and 2013 offer significant theoretical and managerial contributions to co-branding literature in several ways. First, product fit is a really important component driving recommendation to buy. It is the only construct with both direct and indirect effects on consumers' recommendation to buy HLCPs. It has an indirect impact on recommendation to buy via affective and cognitive responses.

Second, brand fit only indirectly affects consumers' recommendation to buy HLCPs via cognitive responses. This result is inconsistent with previous research by Mao and Krishnan (2006) who pointed out that brand fit on extension evaluation is not moderated by cognitive responses as in this model. Moreover, our result shows that brand fit is weaker than product fit. In terms of the total effect of the two periods, the total effect of product fit ($Pro_T(2013) = 0.807$; $Pro_T(2010) = 0.742$) on affective responses, cognitive responses and recommendation to buy is larger than that of brand fit ($Bra_T(2013) = 0.001$; $Bra_T(2010) = 0.298$). This is inconsistent with the research of Bhat and Reddy (2001), which indicates that the effect of brand fit is larger than product fit. This may occur, because the HLCPs in this study are cell phones and headphones, which provide the impression of practical functions for consumers.

Third, consumers' cognitive and affective responses do affect their recommendation intention directly. This is probably caused by the two specific attributes of HLCPs that arouse both consumers' affective and cognitive responses to consider these kinds of products. As Kempf's (1999) study suggests that while the evaluations of functional products are mainly impacted by affective and cognitive responses, the evaluations of hedonic products are exclusively influenced by affective responses.

Fourth, our results show that affective responses positively affect cognitive responses. This might be because consumers perceive stronger hedonic attributes than utilitarian attributes of HLCPs. This result is in line with the proposition of the ABC model of

attitudes, which demonstrates that if consumers act on the basis of emotional reactions, their recommendation to buy will primarily follow an Affect-Beliefs-Behavior sequence.

Fifth, in our second set of surveys conducted in 2013, we added three questions (7-point Likert scale with 7 as “economic crisis is highly serious”) regarding consumers’ attitudes toward the current economic crisis (Wachsmann, 2011). The result shows that consumers have no confidence in economic recovery in the short run. ($M = 6.31$, Cronbach Alpha (α_E) = 0.73). However, according to the annual reports³ of management consulting firm, Bain & Company, the luxury goods sales in 2012 were expected to have 10 percent more growth than in 2011, notwithstanding the financial crisis. Table 3 also shows the results of pairwise parameter comparisons, which indicate the significant difference of the coefficients of the path between attitude toward luxury goods and affective responses ($\text{Coef}_{L(2013)} = 0.60$; $\text{Coef}_{L(2010)} = 0.52$; $|z| = 1.70$, $p < 0.1$). This implies that the luxurious attributes of HLCs toward their affective responses in 2013 is stronger than that in 2010 even though consumers suffer from a serious economic crisis and have passive expectation for future economic growth. We can conclude that consumers’ desires to have luxury goods are not stopped by the financial crisis. These results are inconsistent with prior studies by Kim *et al.* (2009), which pointed out that financial crisis change consumers’ perceptions, and consumers become more conservative leading them to prefer more security and trust. Also, the results are inconsistent with prior studies by Reyneke *et al.* (2010), which show that economic and financial crisis influence the perception of customers.

Sixth, concerning the impact of the acceptance of high-tech products on cognitive responses and subsequently on consumers’ recommendation to buy HLCs, the result shows no effect in 2010, but then shows a negative impact on cognitive responses in 2013. It is likely, because (1) consumers perceive the attributes of luxury of HLCs are more prominent and this effect of luxurious attributes is much stronger than that of attributes of high-technology; (2) that the second survey shows that consumers’ perceptions toward economic crisis are very passive. The economic crisis might explain the part concerning the different result.

In sum, our findings from these two surveys show the importance of product fit, affective responses and cognitive responses for promoting HLCs.

2.5.2 Managerial Implications

Co-branding might be a good strategy in helping companies survive this financial disaster (Lee *et al.*, 2006). This is because during the recession, sales growth is slowing

³ http://www.ipmark.com/pdf/lujo_2012.pdf [Last accessed: June 10th, 2013]

and business performance becomes worse than before. Marketers of luxury goods and high-tech products struggle to promote and sell their products and consumers' recommendation intentions are being swept by an economic crisis. Previous research on co-marketing alliances show that alliances will be more attractive when strengths of partnering brands are rather comparable (Venkatesh *et al.*, 2000). Hence, HLCPs, which are created by luxury brand companies and high-tech companies, can lead to a better synergy in the long run through benefits gained from co-branding. Since HLCPs provide consumers with both high-tech and luxurious attributes, these companies, through such alliance, can extend their product lines and increase consumers' loyalty. High-tech products can help to enhance the high-end brand image while luxury goods can help to extend its fame of practical functions.

These results have critical implications for marketing managers. First, although HLCPs combine two diverse components within one product, consumers' recommendation behavior is still symmetrically influenced by the two types of attributes: high-tech and luxurious attributes. Second, since luxury brands could be more extendible to other product categories than high-tech brands (Park *et al.*, 1991), it is recommended that high-tech producers ally with well-known luxury partners in order to promote their luxury features. This implies that marketers could emphasize the luxurious features of these HLCPs when advertising and promoting, because consumers still perceive HLCPs as hedonic rather than utilitarian products and they use affective responses when considering these products. Third, product fit has direct and positive impact on consumers' recommendation to buy and also an indirect and positive impact via affective responses. This result suggests that firms should really focus on finding the two products that fit together the most when forming co-branding. Fourth, managers should consider not only the product fit, but also brand fit when exercising co-branding strategy, because brand fit has a positive and significant indirect impact on consumers' recommendation to buy via cognitive responses. However, even if brand fit does play an important role in influencing consumers' recommendation to buy, product fit plays a more critical role, because consumers put more emphasis on product fit of co-branded products than brand fit. This means it is possible that firms ally with a less favorable brand partner, but the more important issue is that this partner must display a positive product fit in order to attract consumers' attention. Last, acceptance of high-tech products plays no roles in 2010, but a negative role in 2013. This finding is interesting and it implies that the attribute of high-technology does not promote favorable preferences to consumers. We deduce that when advertising HLCPs, over-emphasis on the attribute of high-technology might dilute consumers' willingness to recommend such a purchase.

2.5.3 Limitations and Further Research

Several limitations of this study suggest new avenues for future research. First, all participants in this study are university students. Although student samples reduce the problems of heterogeneity, caution is needed when generalizing these results to the general public. Future research should aim to extend respondents to other groups (e.g., Office worker). Second, we only considered consumers of one country to test our consumers' attitudes. This might result in the lack of generality. Cross-cultural differences are also an important issue when discussing consumers' behavior. Hofstede (2001) suggests that Eastern and Western consumers have varying perspectives when faced with the same event. A future research that incorporates cross-cultural differences would be valuable. Third, we only based our model on the ABC model of attitudes. However, other consumers' attitude theories also exist. Future research could be conducted using these other attitude theories such as the Functional Theory of Attitudes by Katz (1960) and Multi-attribute attitude model by Wilkie and Pessemier (1973) to see if the results will be similar or not. Fourth, gender differences have been considered an important variable of difference in consumers' product use and brand choice (Gould and Stern, 1989). Further research that encompasses attitudinal differences between males and females would be fruitful toward the development of HLCPs. Lastly, co-branding is formed through the cooperation of two or more brands. Concerning the importance of the issue of brand equity (Washburn *et al.*, 2000), future research could explore whether the mutual effect weakens or strengthens the brand equity of co-branded brands before and after implementing co-branding strategy.

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Appendix A

Tested Products in 2010

(LG PRADA cellphone & SAMAUNG ARMANI cellphone)



Compra de productos electrónicos-	
LG KF900 PRADA II-	
• Precio:-	630 €-
• Introducción:-	Panel Dactil y Teclado QWERTY
• Red:-	GSM(850/900/1800/1900),EDGE, UMTS(900/2100), HSDPA 7.2 Mbps, Wi-Fi-
• Tamaño físico:-	3.00 pulgadas-
• Capacidad de división:-	240*400-
• Memoria:-	60MB-
• Expansion slot:-	microSD/microSDHC-
• Cámara:-	5 megapíxeles resolución-
• Conexión:-	USB, Wi-Fi, Bluetooth-
• Dimensiones:-	104.5 x 54.0 x 16.75mm-
• Peso:-	130g-



Compra de productos electrónicos-	
SAMSUNG B7620 GIORGIO ARMANI-	
• Precio:-	700 €-
• Introducción:-	Panel Dactil y Teclado QWERTY
• Red:-	GSM(850/900/1800/1900),EDGE, UMTS(900/2100) ,HSDPA 7.2 Mbps, Wi-Fi, GPS y AGPS-
• Tamaño físico:-	3.50 pulgadas-
• Capacidad de división:-	400*800-
• Memoria:-	8GB de memoria interna ampliables a 32GB-
• Expansion slot:-	microSD/microSDHC-
• Cámara:-	5-megapíxeles resolución-
• Conexión:-	USB, Wi-Fi, Bluetooth-
• Dimensiones:-	118 x 58.3 x 16.4mm-
• Peso:-	164g-

Appendix B

Tested Products in 2010

(PHILIPS-cK headphone & PHILIPS BURBERRY headphone)



Philips Calven Klein (cK) headphones, featuring a black and silver design with a leather headband and large ear cups. The ear cup has the Philips logo and 'CALVEN KLEIN' branding.

Compra de productos electrónicos	
Cascos PHILIPS-Calven Klein (cK)	
● Precio:	230 €
● Respuesta de frecuencia:	12 - 25 000 Hz
● Sensibilidad:	105 dB
● Conexión del cable:	Cable sin oxígeno (1,1 m)
● Entrada máxima de potencia:	200 mW
● Compatible con:	iPhone, iPad
● Peso:	270g



Philips Burberry headphones, featuring a black and silver design with a leather headband and large ear cups. The ear cup has the Philips logo and 'BURBERRY' branding.

Compra de productos electrónicos	
Cascos PHILIPS-BURBERRY	
● Precio:	230 €
● Respuesta de frecuencia:	12 - 25 000 Hz
● Sensibilidad:	105 dB
● Conexión del cable:	Cable sin oxígeno (1,1 m)
● Entrada máxima de potencia:	200 mW
● Compatible con:	iPhone, iPad
● Peso:	270g

SONY-cK headphone & SONY BURBERRY headphone



Compra de productos electrónicos	
Casos SONY-Calvin Klein (cK)	
● Precio:	230 €
● Respuesta de frecuencia:	4 - 80000 Hz
● Sensibilidad:	105 dB
● Conexión del cable:	Cable sin oxígeno (1,2 m)
● Entrada máxima de potencia:	1500 mW
● Compatible con:	iPhone, iPad
● Peso:	240g



Compra de productos electrónicos	
Casos SONY-BURBERRY	
● Precio:	230 €
● Respuesta de frecuencia:	4 - 80000 Hz
● Sensibilidad:	105 dB
● Conexión del cable:	Cable sin oxígeno (1,2 m)
● Entrada máxima de potencia:	1500 mW
● Compatible con:	iPhone, iPad
● Peso:	240g

Appendix C

Measures

1. Attitude toward Luxury goods (Wilcox *et al.*, 2009)

No.	Questions
1	Luxury brands reflect the kind of person I see myself to be.
2	Luxury brands help me communicate my self-identity
3	Luxury brands help me express myself.
4	Luxury brands help me define myself.
5	Luxury brands are a symbol of social status.
6	Luxury brands help me fit into important social situations.
7	I like to be seen wearing luxury brands.
8	I enjoy it when people know I am wearing a luxury brand.

2. Product fit (Simonin and Ruth, 1998)

No.	Questions
1	I think <i>LG</i> 's products and <i>PRADA</i> 's products are a complementary product combination.
2	I think <i>LG</i> 's products and <i>PRADA</i> 's products can be used together in a natural manner.
3	I think <i>LG</i> 's products and <i>PRADA</i> 's products are an appropriate product combination.

3. Brand fit (Simonin and Ruth, 1998)

No.	Questions
1	The images or associations that you might have for the brand of <i>LG</i> and <i>PRADA</i> are consistent.
2	The images or associations that you might have for the brand of <i>LG</i> and <i>PRADA</i> are complementary
3	The images or associations that you might have for the brand of <i>LG</i> and <i>PRADA</i> are expected.

4. Attitude toward High-tech products (Roehm and Sternthal (2001))

No.	Questions
1	I like High-tech products
2	I think high-tech products are useful.
3	I think high-tech products are good.
4	I find that high-tech products are practical.
5	High-tech products are worth owning.
6	High-tech products are impressive.
7	High-tech products are valuable.
8	High-tech products are advanced.

5. Affective responses (Ratchford, 1987)

No.	Questions
1	Owning a LG PRADA cell phone expresses my personality.
2	Owning a LG PRADA cell phone is based on a lot of feeling.

6. Cognitive responses (Ratchford, 1987)

No.	Questions
1	Owning a LG PRADA cell phone is mainly logical or objective.
2	Owning a LG PRADA cell phone is based mainly on functional facts.

7. Recommendation to buy (Baker and Churchill, 1977)

No.	Questions
1	Would you like to try the LG PRADA cell phone ?
2	I would patronize this LG PRADA cell phone .

8. Brand familiarity (Simonin and Ruth (1998))

No.	Questions
1	I am extremely familiar with the LG brand name.
2	I definitely recognize the LG brand name.
3	I definitely have heard of the LG brand name before.

9. Economic crisis (Wachsman, 2011)

No.	Questions
1	The economic crisis affects my consumption priorities
2	I think that the current economic crisis is serious.
3	I think that the current economic crisis will be over this year.

Chapter 3

The Role of Attitude Components in Co-branded Products: A Cross-cultural Perspective

Abstract

This study explores the effects of cultural differences on consumers' recommendation to buy co-branded products with both attributes of high technology and luxury. The results show that recommend to buy the co-branded products is mainly influenced by the affective component of attitude in Western cultures (e.g., Spanish consumers), while the cognitive component of attitude plays a major role in Eastern cultures (e.g., Taiwanese consumers). In addition, Western consumers place more importance on product fit, while Eastern consumers emphasize the significance of brand fit. Finally, Taiwanese consumers favor high-tech attributes of co-branded products, while Spanish consumers prefer luxurious attributes.

3.1 Introduction

We study whether culture differences affect consumer attitudes toward co-branded products that combine high-tech attributes (utilitarian) and luxurious (hedonic) attributes. In our study, we dub co-branded products “HLCPs” when those co-branded products have both attributes in high technology and luxury.

Prior studies demonstrate that culture fundamentally influences consumers’ attitudes to buy products. McCracken (1988), Lim and Ang (2008) and McCort and Malhtra (1993) show that culture is one of the factors that drives consumers’ attitudes and conception, and that culture and consumer behavior are strongly related. Hui and Triandis (1986) show that Western culture emphasizes the accomplishment of individual targets. In contrast, Eastern culture underscores the group (e.g., family, friends or colleagues), whose targets are prior to individual targets (Triandis, 1989).

This study thus aims to investigate the influence of cultural conditioning on consumer attitudes toward HLCPs. Prior studies show that affect and cognition influence consumer behavioral intentions (Dube *et al.*, 2003; Laurent and Kapferer, 1985; Putrevu and Lord, 1994). Affective responses are associated with hedonic products (Mano and Oliver, 1993) and cognitive responses are related to utilitarian products (Hirshman, 1980). Little attention has been placed on emphasizing the role of culture on consumers’ attitudes toward co-branded strategies involving high-tech and luxurious attributes.

We conducted surveys on both Spanish and Taiwanese undergraduate students in order to capture attitude differences between Western and Eastern cultures. We first use four measures of consumer perceptions, *attitudes toward luxury goods*, *product fit*, *brand fit* and *acceptance of high-tech products*, to predict consumer’s recommendation to buy HLCPs. Then, we first apply the ABC model of attitudes to study how affect and cognition influence consumer behavior. Furthermore, we consider the interaction between the first three measures of consumer perceptions and affective responses to predict consumers’ recommendation to buy HLCPs and lastly three measures and cognitive responses to predict consumer intentions.

The findings show that both in Spain and Taiwan the effect of attitude toward luxury goods on the affective response, the effect of product fit and brand fit on the cognitive response, and the direct effect of the cognitive response on recommendation to buy HLCPs are significant. Our results also show that product fit directly affects both affective responses and recommendation to buy HLCPs in Spanish consumers; by contrast, it is brand fit that has a direct effect on recommendation to buy in Taiwan. Besides, the acceptance of high-tech products affects cognitive responses in Taiwan

and affective responses directly affect cognitive responses in Spain.

By examining cross-cultural differences on consumers' motivations to recommend co-branded products, this study contributes to the literature in several ways. We contribute to a stream of empirical research in the cultural differences on consumers' attitudes by showing that Western and Eastern cultures do play a key role on consumers' recommendation to buy co-branded products (McCracken, 1988; Lim and Ang, 2008; McCort and Malhtra, 1993). From the managerial point of view, research on the influence of cultural differences is meaningful as marketers become more aware of the influence of cultural differences on marketing. Such experience is extremely critical for marketers aiming at consumers from diverse cultures.

The rest of this article proceeds as follows. Section 3.2 reviews the relevant literature and presents the main hypotheses. Section 3.3 discusses the empirical methodology and describes the data. Section 3.4 presents the results. Section 3.5 concludes with a discussion of the findings and managerial implications of the study.

3.2 Literature review and hypotheses

3.2.1 Cultural Differences

People with different cultural backgrounds (e.g., Western and Eastern cultures) have different perspectives when facing similar events (Bottomley and Holden, 2001). More specifically, Western and Eastern cultures started from different roots; there are several different aspects between Western and Eastern cultures. For example, the Western culture focuses on self-centeredness that highlights the independence, personal achievement, and the accomplishment of individual targets (Hui and Triandis, 1986) and this is termed individualism. "In individualist culture, an independent self-construal, which refers to the self as comprising a unique set of internal attributes including motivations, traits, and values, tends to be fostered" (Aaker and Williams, 1998, p. 242). Eastern culture promotes the amiable atmosphere between individuals and underlines social restrictions to the extent that the importance of a group is superior to that of an individual (Triandis, 1989). McCarty and Shrum (1994) stress that this cooperative, rather than individual, conception is termed collective nature. "In collectivist cultures, an interdependent self-construal, which refers to the self as inseparable from others and social context, tends to be fostered" (Aaker and Williams, 1998, p. 242).

These cultural differences are also reflected in behavioral intention (McCracken, 1988; Wong and Ahuvia, 1998), in line with researchers' findings, for instance, Brewer and Chen (2007) present that individualists are eager to highlight individual uniqueness and self-expression; collectivists desire to identify their behavior in order

to conform social norms and to emphasize the importance of self-presentation.

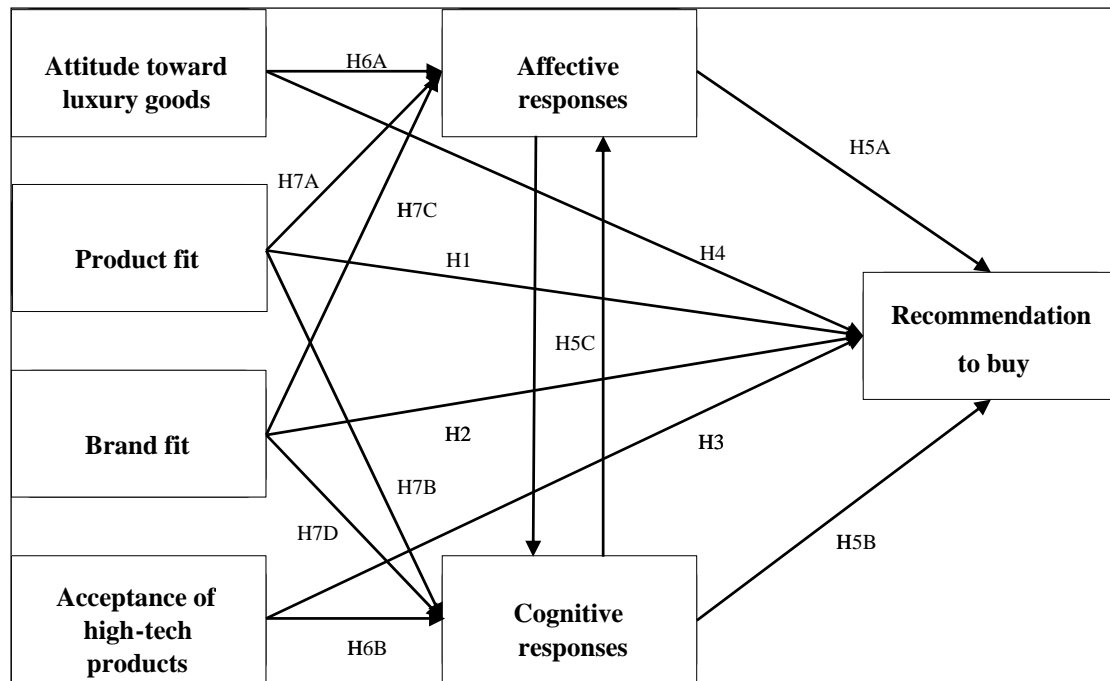
Hofstede (2001) confirms these generalizations for the specific cases of Spain and Taiwan. Among the five dimensions analyzed in his study, Spain and Taiwan show divergent values only in the “individualism versus collectivism” index; 51 for Spain and 17 for Taiwan. Spain and Taiwan are similar in all the remaining indexes.⁴ It implies that people in these two countries have different conceptions toward Individualism/Collectivism.

3.2.2 Co-branding

Co-branding is one of the strategic forms of brand alliance (Geylani *et al.*, 2008; Rao *et al.*, 1999; Simonin and Ruth, 1998) and also a theory of brand extension (Washburn *et al.*, 2000; Walchli, 2007). Geylani *et al.* (2008) define co-branding as a combination of two existing brand names to form a separate and single product with a composite brand name. Executing co-branding strategies have advantages and disadvantages. Co-branding offers established brands an opportunity to increase sales of existing products and add immediate credibility to existing brands. Nevertheless, the alliance between two brands may confuse consumers about the image of both brands and consequently damage the brand equity of each brand (Park *et al.*, 1996). Therefore, understanding which conditions determine the success of co-branded products becomes crucial. The theoretical model is in the Figure 1.

⁴ Power Distance Index: 57 for Spain, 58 for Taiwan; Masculinity Index: 42 for Spain, 45 for Taiwan; Uncertainty Avoidance Index: 86 for Spain, 69 for Taiwan (Hofstede, 2001).

Figure 1
The theoretical model



3.2.3 Impacts of product fit and brand fit on consumers' recommendation to buy HLCPs

The first relevant difference affecting consumer behavior is the style of thinking, which emerges from the personal social environment in which consumers are embedded. Consumers from the Eastern culture are generally involved in deep social relationships that stimulate their orientation to pay attention to the context or field as a whole (*holistic* style of thinking). By contrast, Western consumers show an *analytic* style of thinking, involving a detachment of the object from its context, and a general tendency to focus on attributes of objects. In turn, Eastern holistic thinkers tend to group objects on the basis of their functional or thematic interdependence, by detecting broader connections among objects than Western analytic thinkers.

Concerning brand fit, Monga and John (2010) find that when considering brand extensions, Eastern holistic thinkers (e.g., Indian consumers) engage in more relational thinking and emphasize the importance of brand extension fit than Western analytic thinkers. For functional brands, Eastern consumers show more favorable attitudes to distant extensions than Western consumers. In terms of product fit, NG (2010) points out that Eastern and Western consumers have different reactions to the product extension, in which the author specifically finds that under different patterns of product categories, Western and Eastern consumers have opposite opinions when they perceive the failure of product extension. Compared with Eastern consumers, Han and Schmitt (1997) present that Western consumers (e.g., U.S. consumers) place more importance

on their own judgment and regard that product fit is the primary component for them in evaluating brand extensions. Western consumers pay more attention to the compatibility of product categories that leads to their intention to accept and have these products (Littrell and Miller, 2001).

It seems that “perceived fit” plays an essential role in determining the success of HLCPs across markets with different cultural backgrounds. Given that HLCPs simultaneously embodied functional and symbolic attributes, the brand fit and product fit between high-tech products and luxury goods are complex. We have no clear clues when consumers come from different cultural backgrounds with respect to their attitude toward this co-branded combination. Based on these considerations, we draw the following hypotheses:

H1: Product fit is more relevant for Western consumers than Eastern consumers in influencing consumers’ recommendation to buy HLCPs.

H2: Brand fit is more relevant for Eastern consumers than Western consumers in influencing consumers’ recommendation to buy HLCPs.

3.2.4 Acceptance of high-tech products as a basic determinant of consumers’ recommendation to buy HLCPs

The adoption rate of electronic appliances is higher in countries characterized by high context cultures (i.e., a few words could effectively communicate a complicated message to other people) – such as Japan, South Korea and Taiwan – when compared with countries characterized by low context cultures – such as the USA (Takada and Jain, 1991). Slowikowski and Jarratt (1997) point out that when talking about the adoption of high-tech products, Eastern consumers were faster to adopt new technology of a mobile phone than Western consumers. Moreover, the high probability of new product launches is in countries where uncertainty avoidance (Hofstede, 2001) is lower, such as in Taiwan as compared to Spain (Tellis *et al.*, 2003). Long-term oriented Eastern cultures are also characterized by a faster adoption of information technology (IT)-based innovations (Van Everdingen and Waarts, 2003).

Therefore, the acceptance of high-tech products (i.e., the ability to appraise their characteristics) represents a key determinant of a consumer’s behavioral intention towards HLCPs. Regarding the above discussion, we specify the following:

H3: Eastern consumers’ acceptance of high-tech products is more relevant in influencing consumers’ recommendation to buy HLCPs than for Western consumers

3.2.5 Effect of pre-attitude toward luxury goods on consumers' recommendation to buy HLCPs

Individualists and collectivists have different attitudes toward luxury goods. While Individualists intensify their self-expression attitude through possessing luxury goods, collectivists desire to have luxury goods in order to strengthen their self-presentation attitude (Bian and Forsythe, 2012). One of the characteristics of luxury goods is scarcity, which further enhances consumers' preferences and demands toward luxury brands (Lynn, 1991), since these kinds of products create a favorable attribute for aspirants of luxury brands (Burns and Brandy, 2001; Dubois and Paternault, 1995; Park *et al.*, 2008). In a similar vein, the "rarity principle" is only significant in individualistic cultures (e.g., in the United States), while it does not hold in collectivist cultures such as Singapore and Hong Kong (Phau and Prendergast, 2000). Phau *et al.* (2009) and Phau and Teah (2009) present that generally when consumers possess unfavorable attitudes toward luxury goods, they are against buying luxury goods. Thus, a positive attitude definitely affects the success of luxury goods.

Consequently, a positive attitude toward luxury goods should represent a precondition for the development of a (subsequent) positive attitude toward HLCPs. Based on these considerations, we draw the following hypothesis:

H4: Western consumers' attitude toward luxury goods is more relevant in influencing consumers' recommendation to buy HLCPs than for Eastern consumers

3.2.6 Attitude formation toward co-branded products

Malhotra and McCort (2001) mention that because of the way of learning language, Eastern consumers' decision making is mainly based on cognitive responses, but not affective responses. By contrast, through different cross-cultural comparisons of behavioral intention models, Malhotra and McCort (2001) and Triandis *et al.* (1988) find the formation of intention of Western consumers is best explained by affective responses. It implies that Western consumers' attitude toward luxury goods might be different from Eastern consumers. Therefore, with respect to consumers belonging to collectivist cultures, those from individualist cultures are more influenced by fashion-related brands (Manrai *et al.*, 2001) and are expected to approach the recommendation of HLCPs by paying more attention to luxurious attributes of products.

Luxury is one of the important attributes embedded in products. The hedonic attributes of luxury goods are the principal reason for Western consumers to possess luxury goods (Hirshman and Holbrook, 1982) and they mainly employ affective responses to consider luxury hedonic goods (Mano and Oliver, 1993). Following the description, we specify:

H5A: Western consumers' affective responses are more relevant in influencing consumers' recommendation to buy HLCPs than for Eastern consumers

Similar differences have been observed in attitudes toward high-tech products and services (Dwyer *et al.*, 2005; Kumar and Krishnan, 2002; La Ferle *et al.*, 2002; Takada and Jain, 1991) between Eastern and Western cultures. High-technology is the other important attribute of HLCPs. The function of high-technology is classified by the features of utilitarian products (Johar and Sirgy, 1991). Generally, consumers take cognitive responses to consider utilitarian products (Hirschman, 1980) and cognitive responses are highly associated with Eastern consumers' attitudes (Malhotra and McCort, 2001). Therefore, for consumers from Eastern cultures, cognitive responses are postulated as critical components to regard the recommendation of HLCPs. Here we have:

H5B: Eastern consumers' cognitive responses are more relevant in influencing consumers' recommendation to buy HLCPs than Western consumers

Given that HLCPs present the attributes of high-technology and luxury. On the one hand, Eastern consumers mainly take cognitive responses to make decision (Malhotra and McCort, 2001) and make purchase decisions based on the functional attributes of products (Tse, 1989). Utilitarian attributes provide a rational appeal and highly relevant to cognitive responses (Hirshman, 1980). On the other hand, Triandis *et al.*, (1988) point out that Western consumers' behavioral intention is associated with affective responses. Hedonic attributes are relevant to the affective responses (Lim and Ang, 2008). Cervellon and Dubé (2002) point out that in some cases, Western consumers display strong affective-cognitive ambivalence, whereas Eastern consumers have a balanced attitude (e.g., attitude toward food). In turn, both affective and cognitive responses have positive connections for them. Therefore, we have:

H5C: Western consumers and Eastern consumers have different attitudes about cognitive and affective responses.

3.2.7 Roles of mediators of cognitive and affective responses

When consumers desire to have luxury goods, the affective dimension is more pronounced than the cognitive dimension, because luxury goods provide several features satisfying consumers, for instance, prestige, conspicuousness, materialism, hedonism, self-identity, uniqueness, and quality. All of these values exclusively

transcend the values that cognitive aspects could provide (Wiedmann *et al.*, 2007). Bian and Forsythe (2012) conclude that since Western consumers possess an obvious self-expression attitude which is greatly relevant to affective responses, it is assumed that this self-expression attitude has larger influences on affective responses for luxury goods between Western consumers rather than Eastern consumers. While the formation of intention of Eastern consumers is interpreted by cognitive measure of evaluation, affective responses are explanatory for the intention of Western consumers (Malhotra and McCort, 2001). Therefore, for Western consumers it is expected that affective responses play a more important mediator role than cognitive responses between consumers' general (and pre-existing) attitude toward luxury goods and (subsequent) behavioral intention to recommend to buy HLCPs. In contrast, for Eastern consumers, comparing with affective responses, the cognitive responses should be more essential to intervene in the relationship between consumers' general (and pre-existing) acceptance of high-tech products and (subsequent) HLCPs' recommendation intention. Eastern consumers' attitudes – and, specifically, the cognitive responses – thus mediate the relationship between acceptance of high-tech products and recommendation to buy HLCPs.

The ABC model of attitudes (Solomon, 1996) provides useful suggestions in this context as well. The model compares consumers' cognitive (“knowing/belief”) and affective (“feeling”) judgments toward products with the degree of consumer's involvement (“high/low”) during the personal behavioral process to recommend products, because attitudes (“doing”) toward a product are not simply explained in one dimension. The model focuses on interrelationships among knowing, feeling and doing, in which the relative importance is based on consumers' degree of motivation toward the product. Besides using the concept of a hierarchy, the ABC model of attitudes demonstrates the relative impact of the three components.

In the standard learning hierarchy of ABC model of attitudes, when consumers (e.g., Eastern consumers) emphasize the function, price, and availability of high-involvement “knowing” products, their recommendation process follows a Beliefs-Affect-Behavior sequence. In the experiential hierarchy of ABC model of attitudes, consumers (e.g., Western consumers) act on the basis of emotional reactions (“feeling”). This perspective focuses on the idea regarding intangible product attributes (e.g., aesthetic and brand) shaping consumers' attitude toward a product. The recommendation process follows an Affect-Beliefs-Behavior sequence.

Therefore, with different cultural backgrounds, consumers' cognitive and affective responses are expected to play different roles in the recommendation of HLCPs, which include both “knowing” and “feeling” components. In this study, we assume that while for Eastern consumers the cognitive responses are more important to mediate the

relationship between acceptance of high-tech products and recommendation intention, the affective responses should be critical in order to intervene in the relationship between consumers' attitude toward luxury goods and recommendation intention for Western consumers. As a consequence, we add the following hypotheses:

H6A: Western consumers' affective responses act as a mediator between consumers' attitude toward luxury goods and recommendation to buy HLCPs.

H6B: Eastern consumers' cognitive responses act as a mediator between consumers' acceptance of high-tech products and recommendation to buy HLCPs.

Consumers from individualist culture are more likely to pursue well-known brand products than consumers from collectivistic cultures (Sun *et al.*, 2004). Fashion concept is also highly relevant to individualism (Manrai *et al.*, 2001). In addition, the shopping principal of 88% of Eastern consumers largely depends on the facts and real demands rather than feelings and emotions (Levy, 1996). Along this line, Malhotra and McCort (2001) find that affective responses are highly associated with the thinking of Western consumers, while Eastern consumers' thinking is greatly associated with cognitive responses. Consequently, in the case of HLCPs, Western consumers' perception toward brand fit and product fit is expected to be important on affective responses over cognitive responses; Eastern consumers perceive that the importance of brand fit and product fit on cognitive responses play a more critical role than affective responses. Based on these considerations, we draw the following hypotheses:

H7A: Western consumers' affective responses act as a mediator between product fit and recommendation to buy HLCPs.

H7B: Western consumers' affective responses act as a mediator between brand fit and recommendation to buy HLCPs.

H7C: Eastern consumers' cognitive responses act as a mediator between product fit and recommendation to buy HLCPs.

H7C: Eastern consumers' cognitive responses act as a mediator between brand fit and recommendation to buy HLCPs.

3.3 Empirical analysis and methodology

This study examines how cultural differences affect consumers' recommendation behavior of HLCPs. Our belief is that consumers with different cultural backgrounds have different perspectives when facing similar issues. Therefore, we compare Western European (Spain) and Eastern (Taiwan) cultures in order to explore the different recommendation behavior.

3.3.1 Products

We analyzed consumers' responses toward products that already exist in the marketplace. The survey used "SAMSUNG GIORGIO ARMANI" and "LG PRADA" cell phones that are real-life examples of co-branded products, which combine attributes of high-technology and luxury. Cellphones are common electronic products among consumers and they could evaluate these products easier than other HLCPs such as Chanel Segway. All four brands, SAMSUNG (7 = "brand is highly familiar", $M_{\text{Spain}} = 5.95$; $M_{\text{Taiwan}} = 5.30$), LG ($M_{\text{Spain}} = 5.90$; $M_{\text{Taiwan}} = 5.44$), GIORGIO ARMANI ($M_{\text{Spain}} = 5.60$; $M_{\text{Taiwan}} = 4.27$) and PRADA ($M_{\text{Spain}} = 5.46$; $M_{\text{Taiwan}} = 4.41$), are authentic brands whereby respondents could evaluate features of HLCPs easily. The average brand familiarity of four brands are high and closed, which could provide equal contributions to co-branding strategy (Simonin and Ruth, 1998). The test showed that Spanish and Taiwanese consumers are insignificantly different in attitudes between two high-tech brands, SAMSUNG and LG (Spain: $t = -0.44$, $df = 498$, $p = 0.67$; Taiwan: $t = 0.32$, $df = 309$, $p = 0.75$) and two luxury brands, GIORGIO ARMANI and PRADA (Spain: $t = -1.51$, $df = 474.6$, $p = 0.13$; Taiwan: $t = 0.67$, $df = 320.7$, $p = 0.50$). Two different versions of the questionnaire were used for each HLCP combination and respondents were randomly assigned to one of the two questionnaires.

3.3.2 Respondents

This study explores the differences of Western and Eastern consumers' attitudes toward the recommendation of HLCPs. Participants were undergraduate students from one major university in Spain (566 respondents) and three major universities in the northern part of Taiwan (359 respondents). University students were used to increase the sample's homogeneity and minimize the random error caused by selecting the general public (Calder *et al.*, 1981). Students completed the survey for partial fulfillment of one course they were undertaking. After excluding invalid and low brand

familiarity toward brand stimuli⁵, four hundred and ninety-three respondents were considered valid in Spain (87%) and three hundred in Taiwan (83%). 61% of the respondents ($n_{\text{Spain}} = 243$) in Spain were women, as opposed to 59% ($n_{\text{Taiwan}} = 177$) in Taiwan. The ratios of sample size to survey items (30 items) for the sample satisfies the minimum requirements specified by both Gorsuch (1983) and Thompson (2000).

Spain and Taiwan were chosen as the empirical test for this study for three key reasons. First, Taiwan and Spain provide an interesting comparison in terms of cultural distinctions (Hofstede, 2001), even though Taiwan was a colony of Spain in the 17th Century. Second, according to International Monetary Fund (IMF) data for 2012 (IMF, 2012), both countries are considered high-income countries (between U.S. \$28,976 and \$19,888 per capita) and sizeable economics, where the population is 46.25 million in Spain and 23.42 million in Taiwan, respectively. Third, although Spain and Taiwan have large differences in culture and economic situation, both countries are similar in social history and democratization process of the 1980s (Borao Mateo, 2010).

3.3.3 Measures and procedures

Participants completed the online survey in the computer room. In the online survey, the product information sheet consists of three parts: product name, picture, and set of product features including product price. The product name is such as “LG KF900 PRADA II”. The product features and price are underneath the picture (see Appendix A). All measures employed in the experiment are seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), and were adapted from previous studies. We used items from Ratchford (1987) to measure affective responses (Reliability coefficient – Cronbach Alpha, $\alpha_A(\text{Spain}) = 0.85$; $\alpha_A(\text{Taiwan}) = 0.78$) and cognitive responses ($\alpha_C(\text{Spain}) = 0.85$; $\alpha_C(\text{Taiwan}) = 0.69$). Acceptance of high-tech products ($\alpha_H(\text{Spain}) = 0.92$; $\alpha_H(\text{Taiwan}) = 0.94$) were adopted from Roehm and Sternthal (2001). Taking the items of Wilcox *et al.* (2009) to measure attitude toward luxury goods ($\alpha_L(\text{Spain}) = 0.92$; $\alpha_L(\text{Taiwan}) = 0.92$). We follow the scale of Simonin and Ruth (1998) to measure product fit ($\alpha_P(\text{Spain}) = 0.80$; $\alpha_P(\text{Taiwan}) = 0.89$) and brand fit ($\alpha_B(\text{Spain}) = 0.70$; $\alpha_B(\text{Taiwan}) = 0.89$). The measurement of recommendation to buy ($\alpha_R(\text{Spain}) = 0.86$; $\alpha_R(\text{Taiwan}) = 0.92$) was taken from Baker and Churchill’s (1977) research. All scales’ alpha coefficients are above the acceptable Cronbach’s alpha cutoff of 0.6 (Bagozzi and Yi, 1988). All measured items were first translated into Spanish and Chinese by bilingual (fluent in both English and native language) native speakers. Minor translations of semantic differences were

⁵ There are three questions to test brand familiarity for each product. Each question is a 7-point Likert scale of 7 as highly familiar and 1 as highly unfamiliar. Only when the sum of the three questions testing one brand is larger than 7 (at least 2, 2 and more than 2), the response from that particular survey is considered valid.

discussed to avoid misunderstanding of translation. Both survey versions were translated back to English by other native speakers to enhance translation equivalence (Brislin, 1970; Hult *et al.*, 2008).

3.4 Results

We used a multi-group path analysis with AMOS™ 17 software to test our conceptual model. The goodness of fit (GFI), comparative fit index (CFI) and the incremental fit index (IFI) are descriptive whole measurements. All values require a minimum value of 0.9 (Bagozzi and Yi, 1988). Another important index of measurement of fit, root mean square error of approximation (RMSEA), had a value less than 0.5, representing good model fit (Baumgartner and Homburg, 1996). Using the χ^2 (chi-square test) to test model fit, which requires χ^2 *p*-value significance larger than 0.05. The two-group model shows an extremely good fit ($\chi^2(2) = 1.18, p = 0.55$); GFI = 1.00; CFI = 1.00; IFI = 1.00; RMSEA = 0.00. After sequentially fixing the non-significant parameters in each sample to zero, we ended up with the models shown in Figures 2 and 3.

Table 1 shows that *product fit* affects *recommendation to buy* (Spain_{PR} = 0.18, *p* < 0.01; Taiwan_{PR} = -0.24, *p* = 0.810) only occurred in Spain; *brand fit* affects *recommendation to buy* (S_{BR} = -0.01, *p* = 0.850; T_{BR} = 0.26, *p* < 0.01) only occurred in Taiwan. Therefore, H1 and H2 are supported. The relationships between *acceptance of high-tech products* and *recommendation to buy* in Taiwan (T_{HR} = -0.07, *p* = 0.165) is insignificant and Spain (S_{HR} = -0.01, *p* = 0.849) is also insignificant. This finding is inconsistent with H3. *Attitude toward luxury goods* does not affect *recommendation to buy* neither in Spain (S_{LR} = 0.09, *p* = 0.328) nor Taiwan (T_{LR} = 0.08, *p* = 0.123). Therefore, H4 is not supported.

Table 1
Effects on recommendation to buy

Hp.s	Proposed path	Spain		Taiwan		Critical Ratios for Coef. Differences z
		Coef.	<i>p</i>	Coef.	<i>p</i>	
H ₁	Product fit → Recomm	0.18	0.002 *	-0.24	0.810	1.75 ††
H ₂	Brand fit → Recomm	-0.01	0.850	0.26	0.007 *	-2.39 †
H ₃	High-tech → Recomm	-0.01	0.849	-0.07	0.165	1.03
H ₄	Luxury → Recomm	0.04	0.328	0.08	0.123	-0.59

* *p* < 0.05; †: |z| > 1.96, *p* < 0.05; ††: |z| > 1.645, *p* < 0.10

Table 2 shows the effects of affective and cognitive responses on recommendation to buy. The coefficient of *affective responses to recommendation to buy* ($S_{AR} = 0.22, p < 0.01$) is significant in Spain, but not in Taiwan ($T_{AR} = 0.09, p = 0.190$). Therefore, H5A is supported. The effect of *cognitive responses on recommendation to buy* in Spain ($S_{CR} = 0.36, p < 0.01$) and in Taiwan ($T_{CR} = 0.2, p < 0.01$) are significant, but the results of pairwise parameter comparisons presented in Table 2 indicate that the effects of the two paths ($|z| = 1.2, p > 0.10$) are indifferent. It means that the effects of both Spanish and Taiwanese consumers' *cognitive responses on recommendation to buy* HLCPs are similar. Thus, H5B is not supported. *Affective responses influence cognitive responses* only in Spain ($S_{AC} = 0.21, p < 0.01$; $T_{AC} = -0.34, p = 0.864$). Moreover, the effect of *cognitive responses on affective responses* ($S_{CA} = -0.01, p = 0.952$; $T_{CA} = 0.53, p < 0.01$) is only significant in Taiwan. These results are consistent with H5C.

Table 2
Effects of affective and cognitive responses on recommendation to buy

Hp.s	Proposed path	Spain		Taiwan		Critical Ratios for Coef. Differences	
		Coef.	<i>p</i>	Coef.	<i>p</i>	<i>z</i>	
H _{5A}	Affective → Recomm	0.22	0.000 *	0.09	0.190	1.19	
H _{5B}	Cognitive → Recomm	0.36	0.000 *	0.25	0.001 *	1.20	
H _{5C}	Affective → Cognitive	0.21	0.009 *	-0.34	0.864	1.01	
	Cognitive → Affective	-0.01	0.952	0.53	0.009 *	-2.43 †	

* $p < 0.05$; †: $|z| > 1.96, p < 0.05$; ††: $|z| > 1.645, p < 0.10$

Table 3 shows the effects of affective and cognitive responses as mediator roles. The relationships between *attitude toward luxury goods* and *affective responses* ($S_{LA} = 0.52, p < 0.01$) and *affective responses* and *recommendation to buy* ($S_{AR} = 0.22, p < 0.01$) are significant in Spain. Nevertheless, the *affective responses* do not affect *recommendation to buy* in Taiwan ($T_{AR} = 0.09, p = 0.190$). These results are consistent with H6A. The relationship between *acceptance of high-tech products* and *cognitive responses* ($T_{HC} = 0.13, p < 0.01$) and *cognitive responses* and *recommendation to buy* ($T_{CR} = 0.25, p < .01$) are significant in Taiwan. Besides, the effect of *acceptance of high-tech products* on *cognitive responses* ($S_{HC} = -0.01, p = 0.927$) is not significant in Spain. Therefore, H6B is supported.

The relationship between *product fit* and *affective responses* ($S_{PA} = 0.18, p < 0.01$; $T_{PA} = 0.07, p = 0.593$) is significant and *affective responses* affect *recommendation to buy* ($S_{AI} = 0.22, p < 0.01$) only in Spain. Therefore, H7A is supported. H7B is not

supported, because *brand fit* does not influence *affect responses* ($S_{BA} = 0.06, p = 0.289$) in Spain. Referring to H7C, in both countries *product fit* affects *cognitive responses* ($S_{PC} = 0.22, p < 0.01$; $T_{PC} = 0.52, p < 0.01$). In Table 3, the coefficient of pairwise parameter comparisons indicates that the effects of the two paths ($|z| = 2.59, p < 0.05$) are significantly different. That is, the effect of *product fit* toward *cognitive responses* in Taiwan is larger than that in Spain. Although the effect of *cognitive responses* on *recommendation to buy* in Spain ($S_{CR} = 0.36, p < 0.01$) and in Taiwan ($T_{CR} = 0.2, p < 0.01$) are significant, the effects of the two paths ($|z| = 1.2, p > 0.10$) are indifferent. Thus H7C is not supported. The results evidence that H7D is not supported. The relationships between *brand fit* and *cognitive responses* ($S_{BC} = 0.16, p < 0.05$; $T_{BC} = 0.22, p < 0.05$) are significant in both countries and the pairwise parameter comparisons ($|z| = 0.50; p > 0.05$) show this effect in Taiwan is different from Spain. Nevertheless, as H7C, the effect of *cognitive responses* on *recommendation to buy* in Spain ($S_{CR} = 0.36, p < 0.01$) and in Taiwan ($T_{CR} = 0.2, p < 0.01$) are significant, but the effects of the two paths ($|z| = 1.2, p > 0.10$) are indifferent.

Table 3
Effects of affective and cognitive responses as mediator roles

Hp.s	Proposed path	Spain		Taiwan		Critical Ratios for Coef. Differences	
		Coef.	<i>p</i>	Coef.	<i>p</i>	<i>z</i>	
H _{6A}	Luxury → Affective	0.52	0.000 *	0.18	0.000 *	6.76 †	
	Affective → Recomm	0.22	0.000 *	0.09	0.190	1.19	
H _{6B}	Hi-tech → Cognitive	-0.01	0.927	0.13	0.005 *	-2.21 †	
	Cognitive → Recomm	0.36	0.000 *	0.25	0.001 *	1.20	
H _{7A}	Product fit → Affective	0.18	0.002 *	0.07	0.593	0.92	
	Affective → Recomm	0.22	0.000 *	0.09	0.190	1.19	
H _{7B}	Product fit → Cognitive	0.22	0.000 *	0.52	0.000 *	-2.59 †	
	Affective → Recomm	0.22	0.000 *	0.09	0.190	1.19	
H _{7C}	Brand fit → Affective	0.06	0.289	0.10	0.270	-0.19	
	Cognitive → Recomm	0.36	0.000 *	0.25	0.001 *	1.20	
H _{7D}	Brand fit → Cognitive	0.16	0.011 *	0.22	0.015 *	-0.50	
	Cognitive → Recomm	0.36	0.000 *	0.25	0.001 *	1.20	

* $p < 0.05$; †: $|z| > 1.96, p < 0.05$; ††: $|z| > 1.645, p < 0.10$

Even though the model explains a similar percentage of variance of *recommendation to buy HLCPs* for the two countries ($R^2_{Spain} = 0.38$; $R^2_{Taiwan} = 0.37$), the parameter estimates shown in Tables 1, 2 and 3 reveal that different models are needed for Spain

and Taiwan. While *affective responses* in Spain have direct impact on *cognitive responses*, the causal relationship in Taiwan between the two responses is the opposite (from *cognitive responses* to *affective responses*).

In Spain, *Acceptance of high-tech products* does not play any significant roles. *Affective responses* fully mediate between *attitude toward luxury goods* and *recommendation to buy*. Additionally, the effect of *brand fit* on *recommendation to buy* is completely mediated by *cognitive responses* in Spain. That is, *brand fit* only can affects *recommendation to buy* through the mediator *cognitive responses*.

In Taiwan the direct effects of *acceptance of high-tech products*, *product fit* and *acceptance of high-tech products* on *recommendation to buy* are not significant. The posited direct effects of *product fit* and *brand fit* are not significant on *affective responses*. Furthermore, the effects of *acceptance of high-tech products*, *product fit* and *brand fit* on *recommendation to buy* in Taiwan are completely mediated by *cognitive responses*.

Figure 2
Empirical estimation: Spain

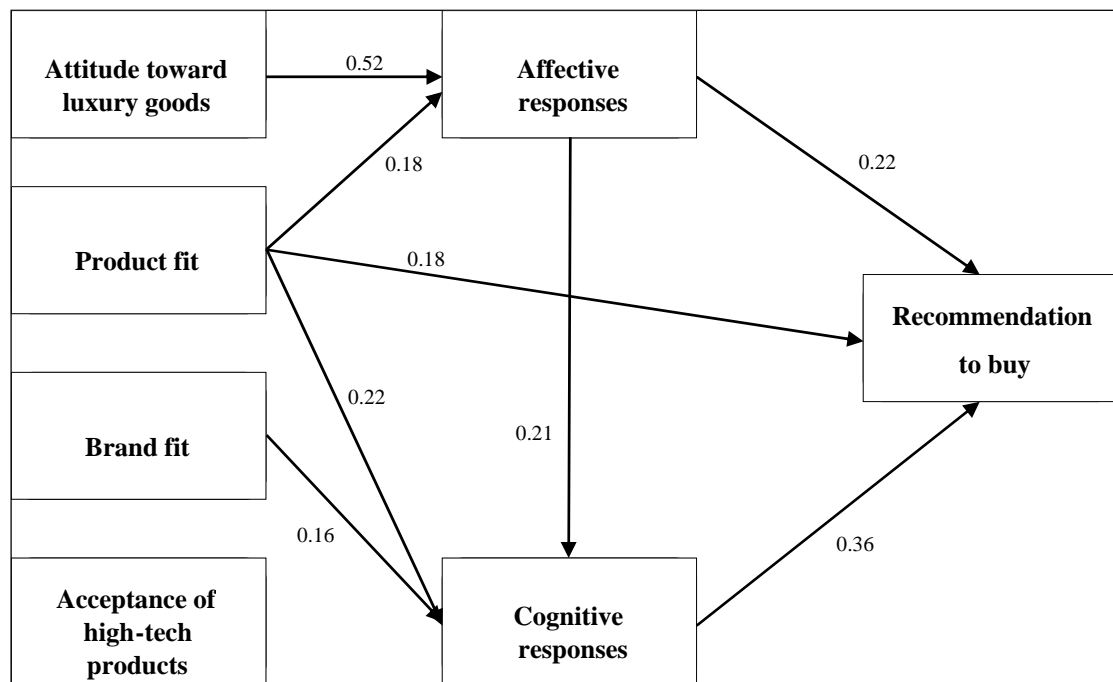
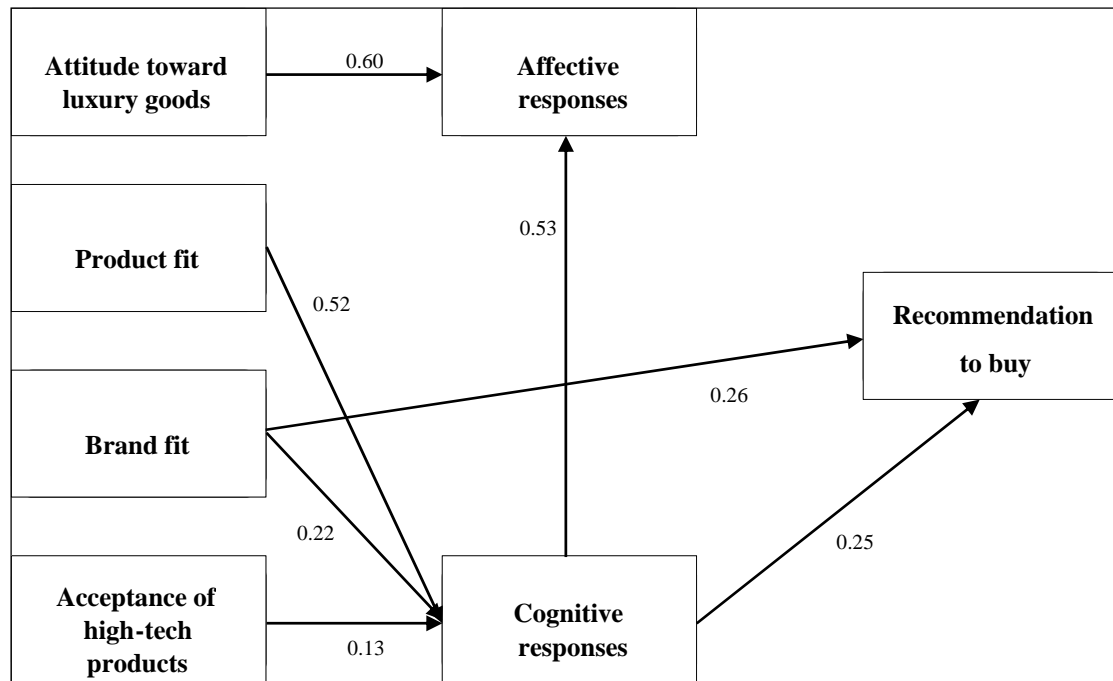


Figure 3
Empirical estimations: Taiwan



3.5 Conclusions

3.5.1 Discussion

We analyze the consumers' attitudes in two different countries – Spain and Taiwan – toward their recommendation of HLCPs and offer suggestions for marketing co-branded products with both attributes in high technology and luxury, HLCPs, in a cross-cultural context. Though co-branding strategy plays a significant role in the success of corporate brands, the cross-cultural comparison within such a context has not been explored yet. Consumers from diverse cultural backgrounds may have different perceptions toward the same products, leading to inconsistent behaviors on recommending products.

Our analyses show several similar results for both countries. We find that the effect of attitude toward luxury goods on affective responses, the effects of product fit and brand fit on cognitive responses, and the effect of cognitive responses on recommendation to buy are presented in both countries. This evidence is consistent with the fact that Spanish and Taiwanese consumers share some common opinions for the recommendation of HLCPs recommendations. However, we also find inconsistent results for both countries. The consumers' perceptions of product fit have a direct effect on both affective responses and recommendation to buy only in Spain. Brand fit has a

direct effect on consumers' recommendations to buy HLCPs only in Taiwan, but not in Spain. The acceptance of high-tech products affects consumers' cognitive responses in Taiwan. The affective responses directly affect cognitive responses in Spain while the relationship between those two responses has an opposite direction in Taiwan. Furthermore, the magnitude of the relationships varies in the two countries.

Consumer's attitudes toward luxurious attributes of HLCPs positively impact the affective responses in both countries. The reason for this finding may be because Europe is the region of origin of several luxury brands (e.g., LV, PRADA, BURBERRY and LOEWE) and Spanish consumers own and are eager to possess luxury goods. Meanwhile, recently Asia has become the most important market of luxury goods. For example, Gucci's regional sales in Asia are higher than Europe and America (Oh and Rugman, 2006). This finding is consistent with the fact that Asian consumers also possess a favorable and acceptable attitude toward luxury goods. The magnitude of the effect of attitude toward luxury good on affective responses for Spain (0.52) is larger than for Taiwan (0.16), and the difference between the two effects is significant ($|z| = 6.67, p < 0.05$). The implication of this result is that Spanish consumers perceive higher luxurious features of HLCPs than do Taiwanese consumers. Spanish consumers' affective responses impact their cognitive responses, hence it can be argued that Spanish consumers take their affective responses more than cognitive responses on luxury goods. This result is coincident with previous findings (Malhotra and McCort, 2001; McCracken, 1998; Wong and Ahuvia, 1998) that in individualistic Western culture consumers are more likely to base their behavioral intentions on their feelings.

The empirical results demonstrate that the acceptance of high-tech products affects consumer recommendations to buy HLCPs only in Taiwan. Taiwan has several leading producers of high-tech products, such as ACER, ASUS, HTC, etc. As a consequence, Taiwanese are imperceptibly used to the environment of high technology. Relatively, tourism is the most important industry in Spain (Blake, 2000) which may reduce Spanish consumers' acceptance of high-tech products.

Spanish consumers consider product fit more relevant than brand fit to the recommendation to buy HLCPs. Product fit directly affects recommendation to buy HLCPs as well as the relationship being mediated by affective and cognitive responses. In contrast, Taiwanese consumers consider product fit irrelevant to recommendations to buy HLCPs. Compared with Spanish consumers, Taiwanese consumers stress the importance of product fit toward cognitive responses and the effect is significantly different ($T_{PC} = 0.52 > S_{PC} = 0.22; |z| = 2.59, p < 0.05$). In terms of brand fit, Taiwanese consumers mainly base their decisions on brand fit in order to perceive the recommendation of HLCPs. Although the magnitude of the effects of brand fit on cognitive responses for Taiwan (0.22) is larger than for Spain (0.16), the difference

between the two effects is insignificant ($|z| = 0.50, p > 0.05$). This result explains that brand fits of two countries have equal prominence on cognitive responses to HLCPs. Overall, our study supports the view that compared with Eastern consumers, Western consumers place more importance on product fit (Han and Schmitt, 1997; Monga and John, 2010). This may arise from the specific attributes of HLCPs that combine very diverse features of high-technology and luxury simultaneously.

Finally, our results show that the behavioral process of Spanish consumers follows Affect-Beliefs-Behavior sequence in recommending to buy HLCPs (i.e., they adopt a “feeling” model of recommendation behavior). However, the behavioral process of Taiwanese consumers does not follow any sequences. Taiwanese consumers’ cognitive responses impact affective responses, but there is no relationship between affective responses and recommendation to buy HLCPs. We conclude that Taiwanese consumers mainly apply their cognitive responses to perceive HLCPs, which have a direct effect on recommendation to buy, mediate the effects of acceptance of high-tech products, and brand fit and product fit on recommendation to buy HLCPs. The collectivistic nature of Taiwanese culture may account for this result (Liñán and Chen, 2009). These findings suggest that a consideration of interaction effects from varied product attributes could be the key to explore the complexities of how consumers with different cultural backgrounds evaluate co-branding.

3.5.2 Managerial implication

The main finding of our study is that cultural aspects have a strong impact on consumers’ recommendation behavior of HLCPs. We provide managerial implications for HLCPs manufacturers who would like to operate business both in Asian and European markets. In cross-cultural co-branding strategy, marketers need to be sensitive to the differences between cultural contexts in consumers and product features since different cultures involve varied consumers’ attitudes.

Spanish consumers mainly base recommendation decisions on their own feelings while Taiwanese consumers pay more attention to functional attributes and cognitive responses. Different marketing strategies are required to target the varied groups of consumers. The main effort is to perform different advertising policies to the specific cultural context in which HLCPs are distributed. An advertising campaign designed for one country cannot be simply replicated in another without major targets applied to the advertising message. For instance, Western consumers perceive that HLCPs are related to hedonic products, while Eastern consumers regard HLCPs as utilitarian ones. The marketing strategies should emphasize luxury product images in Western countries, but meanwhile offer high-end product images in Eastern countries. Furthermore, the importance of product fit for Western consumers and brand fit for Eastern consumers

provides marketers with knowledge that the specific “fit” perception (brand fit or product fit) needs to be noticed. Marketers can propose successful marketing strategies through making appropriate advertising campaigns to satisfy requirements of consumers’ specific fit perception. It might be able to stimulate consumers’ recommendation intentions and eventually increase the sales of HLCPs.

3.5.3 Limitations and future research

This study has limitations that could be addressed by future research. First, we only considered two very specific HLCPs, even though there are many other HLCPs in the market. We could have employed other HLCPs in our survey to make the study more complete and representative. Furthermore, based on this idea, it might avoid the “country-of-origin” effect influencing consumers’ judgments. The generalizability of the cultural differences that we observe in our study could be assessed across various product categories

Second, in this study, we used the path analysis of structural equation modeling (SEM) to perform the analysis of cross-cultural differences. It is appropriate to use multivariate techniques (e.g., multivariate analysis of variance, MANOVA) to examine cross-cultural difference in co-branding research.

Third, the measurement scales of this study are originally designed to measure consumers’ responses in Western cultures. Additional research for developing cross-cultural scales to get the more appropriate scales across cultures could be a consideration.

Fourth, to expand the study of co-branding perception cross-culturally, it would be possible to perform empirical tests of the generalizability of a model. This model could be developed to predict consumers’ high-technology and luxury perception on a global level. Based on this idea, future works can examine whether the variables presented in this study are appropriate for explaining consumers’ recommendation intention.

In spite of the limitations and advanced works for future research, the principal contribution of our study lies in interpreting and developing a comprehensive model of consumers’ attitude toward co-branded products by involving the dimensions of fit conceptions, features of high-technology and luxury and consumers’ cognitive and affective responses.

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Appendix A

Tested Products

(LG PRADA cellphone & SAMAUNG ARMANI cellphone)



Compra de productos electrónicos-	
LG KF900 PRADA II-	
• Precio:-	630 €-
• Introducción:-	Panel Dactil y Teclado QWERTY -
• Red:-	GSM(850/900/1800/1900),EDGE, UMTS(900/2100), HSDPA 7.2 Mbps, Wi-Fi-
• Tamaño físico:-	3.00 pulgadas-
• Capacidad de división:-	240*400-
• Memoria:-	60MB-
• Expansion slot:-	microSD/microSDHC-
• Cámara:-	5 megapíxeles resolución-
• Conexión:-	USB, Wi-Fi, Bluetooth-
• Dimensiones:-	104.5 x 54.0 x 16.75mm-
• Peso:-	130g-



Compra de productos electrónicos-	
SAMSUNG B7620 GIORGIO ARMANI-	
• Precio:-	700 €-
• Introducción:-	Panel Dactil y Teclado QWERTY -
• Red:-	GSM(850/900/1800/1900),EDGE, UMTS(900/2100) ,HSDPA 7.2 Mbps, Wi-Fi, GPS y AGPS-
• Tamaño físico:-	3.50 pulgadas-
• Capacidad de división:-	400*800-
• Memoria:-	8GB de memoria interna ampliables a 32GB-
• Expansion slot:-	microSD/microSDHC-
• Cámara:-	5-megapíxeles resolución-
• Conexión:-	USB, Wi-Fi, Bluetooth-
• Dimensiones:-	118 x 58.3 x 16.4mm-
• Peso:-	164g-

Chapter 4

The Role of Gender in Consumers'

Attitudes in a High-tech Luxury Co-

branding Context

Abstract

This paper examines gender effects on consumers' attitudes towards co-branded products that result from the integration of high-tech and luxurious attributes – high-tech luxury co-branded products, HLCPs. Based on the ABC (affect, behavior and cognition) model of attitudes, this study explores how gender moderates the relationship between drivers of consumer behavior and consumers' behavioral intention toward HLCPs. Concerning male consumers' attitudes, our empirical results show that male consumers' recommendation to buy is higher the higher their acceptance of high-tech products and the perceived level of product fit. By contrast, gender differences have non-significant effects on consumers' cognitive responses and affective responses.

4.1 Introduction

Gender differences have been the object of much research effort in recent years. In the marketing field of research, several studies have discussed how gender differentiates and influences consumers' attitudes and behaviors. For example, biological sex has been considered as a good explanatory variable in explaining the differences in consumers' product use, brand choice, media use, product perception and sex typing (Gould and Stern, 1989). While traditional stereotypes see women as being passive and weak and men as aggressive and strong (Bem, 1981), society has evolved and so have sex roles and duties.

Among other relevant issues, it has been proven that men and women process information differently, mainly because women tend to engage in more detailed, elaborative and comprehensive information processing in comparison to men (Dubé and Morgan, 1996; Meyers-Levy, 1989; Meyers-Levy and Maheswaran, 1991). While men tend to rely on single or multiple messages with a single inference, women try to assimilate all available information (Kempf *et al.*, 2006). Furthermore, men seem to perform *item-specific processing*, meaning that they are less effortful and comprehensive, and focus on single attributes or message cues. In contrast, women tend to engage in *relational processing*, meaning that they have a higher sensitivity and look for interrelationships and similarities among different cues (Lau and Phau, 2010). In turn, such gender differences are reflected in different attitudes and behavioral intentions that consumers have towards brands and products.

In terms of brand consideration, it has been proven that women are able to establish a higher brand fit than men (Lau and Phau, 2010). This reflects women's greater sensitivity in recognizing brand images as well as personality dimensions that would match with their self-concept the most. Also, Parsons (2002) proves how males tend to prefer recognized, fun and functional brands, while females look for more prestigious, symbolic brands.

In the case of the product category considered in this study, gender has been proven to be a differentiating variable for high tech products and luxury products. As for high-tech products, many studies have demonstrated how males and females have different attitudes and intentions towards them (Brosnan and Davidson, 1996; Brosnan and Lee, 1998; Jeong, 2001; Yang and Lee, 2010). Male consumers experience lower levels of technophobia (Brosnan and Davidson, 1996; Whitley, 1997) and show a more positive and confidential attitude towards computers with respect to females (Tsai *et al.*, 2001).

As far as luxury products are concerned, Dubé and Morgan (1996) demonstrate how men and women own luxury products for different reasons. Fashion conscious women

tend to focus more on external appearance, and their public self-consciousness tends to be a good descriptor of themselves (Gould and Stern, 1989). Also, women are found to be more fashion-conscious than men. The latter tend to focus more on what they are and on private self-consciousness.

But what happens to male vis-à-vis female attitudes and behavioral intentions when high-tech and luxury products team up to form high-tech luxury co-branded products like HLCPs? This represents a challenging question which has not been explored by previous works that have investigated co-branding in the high-tech industry or that have explored the association of high-tech and luxury brands (Sengupta and Perry, 1997; Stuart, 1998).

Our attention to HLCPs is mainly due to the fact that they represent an interesting case of brands that are characterized by both functional attributes in which cognitive aspects are predominant, and symbolic attributes where affective aspects are key. Provided that men and women seem to assign different importance to both aspects, HLCPs represent a perfect setting to explore the differences in consumer behavior between men and women.

This study contributes to the literature on gender differences by attempting to answer questions like: will gender differences influence consumer attitude and behavior toward HLCPs? If so, is it likely that males are more attracted to high-tech features than females, and that females are more attracted to luxury features than males in the case of HLCPs? To address these issues, we extended traditional co-branding research (Simonin and Ruth, 1998) to include the ABC model of attitudes formation. In this extended model, gender can then be viewed as a moderating variable between key drivers of consumers' attitudes and their behavioral intentions.

The paper is organized as follows. Section 4.2 reviews relevant literature and presents the main hypotheses. Section 4.3 discusses the empirical methodology and describes the data. Section 4.4 presents the results. Section 4.5 concludes with a discussion of the findings and managerial implications of the study.

4.2 Literature review and hypotheses

4.2.1 Consumer attitude

According to the theory of planned behavior (TPB)⁶, any social behaviors or behavioral intentions could be interpreted by the behavior of antecedents such as

⁶ In psychology, the theory of planned behavior (TPB) is extended from the theory of reasoned action (TRA) (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975) and designed to explain social behavior (Ajzen, 1991).

attitude toward the behavior, subjective norm and perceived behavioral control (PBC). Behavior is interpreted by intention to perform. Here, attitude toward the behavior is “the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question” (Ajzen, 1991, p. 188). Subject norm is “the perceived social pressure to perform or not to perform the behavior” (Ajzen, 1991, p. 188). Perceived behavioral control is defined as “the perceived ease or difficulty of performing the behavior” (Ajzen, 1991, p. 188). Hence, it is obvious that behavior is affected by internal (consumers’ minds) and external (society) environments.

Besides TPB, Solomon *et al.* (1996) provide the ABC model of attitudes. In their model, an attitude is composed of three components: affect, behavior and cognition. The definition of “affect” includes mental status exclusively characterized by experienced feelings, emotions and moods such as happiness, anger, depression, gladness and fear. An affective response is based on feelings towards a special stimulus related to cognitive effort, and the result of an affective judgment is typically a crucial determinant for daily consumption experiences (Anand *et al.*, 1988; Westbrook, 1987). Cognitive responses, in general, generate knowledge, awareness, thought, opinion, perception and beliefs in consumers’ minds. The cognitive factor is important for future owning motivations (Martinez Caro *et al.*, 2007). Several researchers conclude that both dimensions of attitude – affect and cognition – influence consumers’ behaviors (Dubé *et al.*, 2003; Laurent and Kapferer, 1985; Putrevu and Lord, 1994). It is widely recognized that affect and cognition are the bases on which consumer attitudes are formed and from which various consumer responses are determined (Dubé *et al.*, 2003; Laurent and Kapferer, 1985; Putrevu and Lord, 1994; Smith and Reynolds, 2009). Subsequent studies have shown that, even though both dimensions take part in consumers’ assessment of intrinsic and extrinsic product characteristics (Compeau *et al.*, 1998; Da Silva and Syed Alwi, 2006), the affective dimension seems more relevant in the evaluation of hedonic products (Mano and Oliver, 1993) while the cognitive dimension is associated more with the evaluation of utilitarian products (Hirschman, 1980). Given that HLCPs present the features of two types of products, both cognitive and affective responses should be relevant to consumers’ behavioral intention - recommendation to buy.

4.2.2 Gender differences on consumer behavior

Consumer researchers have measured the influence of gender on consumer behavior. In order to appreciate the relevance of gender differences, first, it is important to clarify the distinction between sex, gender and gender role. *Sex* refers to biological categories of male and female. *Gender* describes psychological features associated with sex (Arnold and Bianchi, 2001). Therefore, gender is one of the aesthetic and ethic

invariants that organizes and defines brand identity leading to strong associations with the brand (Aaker, 1996). *Gender role* distinguishes attitudinal differences about roles, rights and responsibilities between men and women and can be described as “the cultural definition of behavior defined as appropriate to the sexes in a given society at a given time. It is a set of cultural roles” (Lerner, 1986).

Concerning the term “gender differences,” several studies have used the term to refer to behavioral differences between males and females (Bhagat and Williams, 2008; Dubé *et al.*, 1996; Meyers-Ley and Maheswaran, 1991). However, other studies have used the term differently. Regardless of the varied differences which have been named in prior studies, throughout this study, the terminology “gender differences” is used to refer to the psychological differences between males and females.

Men and women can either share or have different conceptions. Concerning the similarities between consumer behaviors of men and women, taking shopping as an example, both men and women emphasize on reasonable price, quality of products, respectable reception and a comfortable shopping environment. Concerning the differences between consumer behaviors of men and women, a big difference in their purchasing behavior is that women enjoy the shopping process, while men shop out of necessity. Studies by Falk and Campbell (1997) suggest that women have a higher desire to shop in comparison to men, but spend less money than men do. Men view shopping as effeminate, focusing on their immediate needs when shopping and care more for the satisfaction provided by those products and services, meaning the momentary feeling (Pentecost and Andrews, 2010). Therefore, men tend to find their sexual identity in the material products they buy and tend to constantly define this phenomenon in terms of their external material possessions. In contrast to men, the idea of shopping for women is the opposite. Women tend to engage in detailed information elaboration, meaning that they give more attention to things that they believe to have greater significance. They also expect a long-term consideration and benefit (Dubé and Morgan, 1996; Meyers-Levy and Maheswaran, 1991). Hence, they anticipate merchandise they could use repeatedly (Meyers-Levy, 1989). Women also give importance to the shopping experience. Since during those moments, they can have their own personal space, sense of self and are able to gain an identity when doing so (Falk and Campbell, 1997; Fischer and Gainer, 1991).

4.2.3 Co-branding

Co-branding is one of the strategic forms of brand alliance (Geylani *et al.*, 2008; Rao *et al.*, 1999; Simonin and Ruth, 1998) and a theory to brand extension (Washburn *et al.*, 2000; Walchli, 2007). Geylani *et al.* (2008) define co-branding as a combination of two existing brand names to form a separate and single product with a composite brand

name.

Exercising co-branding strategies presents firms with both advantages and disadvantages. Co-branding offers established brands an opportunity to increase sales of existing products and add immediate credibility to existing brands. Nevertheless, the alliance between two brands may confuse consumers in terms of brand image of both brands and consequently damage brand equity of each brand (Park *et al.*, 1996). Therefore, understanding which conditions determine the success of co-branded products is crucial.

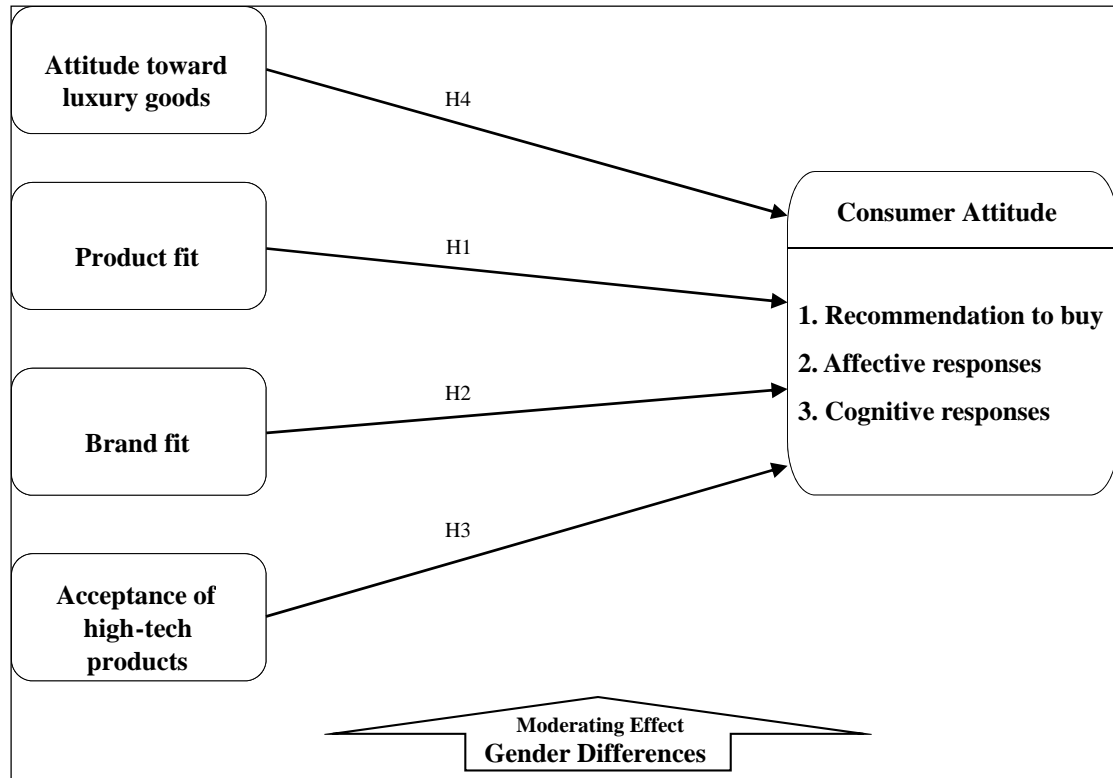
4.2.4 Introduction to the basic model's components

In traditional co-branding contexts (Simonin and Ruth, 1998), consumers' prior attitudes toward the original brands and partner companies influence their post-exposure attitudes toward the same original brands and brand alliance, respectively. Besides consumers' prior attitudes playing an important role, brand fit and product fit also play essential roles in influencing consumers' attitude toward brand alliance. Here, "product fit" is consumers' perception of the extent of compatibility of two (or more) product categories, and "brand fit" is the degree of consistency of brand images of each partner (Simonin and Ruth, 1998; Park *et al.*, 1991).

We based our study on the framework developed by Simonin and Ruth (1998), with some minor alterations. Since HLCPs combine high-tech attributes and luxurious attributes simultaneously, it is necessary to consider consumers' *attitude toward luxury goods* and *acceptance of high-tech products*. We, thus, changed *pre-attitude towards brands A and B* into *attitude toward luxury goods* and *acceptance of high-tech products*. We also replaced *attitude toward brand alliance, post-attitude toward brands A and B* with the three components of the ABC model of attitudes. This is the contribution of this paper, because previous studies only consider simple attitude variable to approach consumers' attitudes (i.e., Simonin and Ruth, 1988).

However, high-tech and luxurious attributes are two main attributes of HLCPs. In general, consumers use their cognitive responses to consider utilitarian attributes of products (Hirschman, 1980) and use affective responses to consider hedonic attributes of products (Mano and Oliver, 1993). If we only use a simple variable to analyze consumers' attitudes, it would be difficult to understand which responses consumers would take first when they face HLCPs. Through applying the ABC model of attitudes, it helps to give a deeper insight into understanding consumers' attitudes. The three components of the ABC model of attitudes are (1) affect (2) behavior and (3) cognition. This theoretical model would help to explain some important antecedents of consumers' attitudes towards HLCPs. The theoretical model is presented in Figure 1.

Figure 1
Conceptual model of Consumer Attitude



4.2.5 Product fit and brand fit

In co-branding, two fit concepts, which are product fit and brand fit, are considered as critical elements of consumers' evaluation. Both "fits" play significant roles, because "the transfer of the perceived quality of a brand will be enhanced when the two product classes in some way fit together" (Aaker and Keller, 1990, p. 29). Therefore, the similarity of product features and the consistency of brand concepts as perceived by consumers become critical when two firms aim at collaborating in the development of a co-branded product (Park *et al.*, 1991; Simonin and Ruth, 1998). A high degree of fit can induce a positive evaluation on the co-branded product (Aaker and Keller, 1990; Bhat and Reddy, 1998; Boush and Loken, 1991) by increasing the likelihood of success of a co-branded product (Helmig *et al.*, 2007; Menon and Kahn, 2003; Simonin and Ruth, 1998). It implies that if brand fit and product fit of two constituent brands are inconsistent, co-branded products will negatively affect consumers' affective and cognitive responses; consequently generate unpleasant beliefs and judgments in consumers' mind and eventually lead to a negative impact on recommendation to buy HLCPs.

Concerning gender differences, Jung and Lee (2006) demonstrated how gender stereotypes can influence consumers' perceptions and judgments, for instance, on

products and brands. Studies have shown that women are more motivated by non-economic goals, while men engage more in risky behaviors (Akhter, 2003). It has been proven that women (1) are more critical in sex-role stereotyping, (2) have a higher brand involvement, (3) engage in more relational behavior with brands, and therefore, will have a greater perception of brand image fit and of overall fit (Jung and Lee, 2006). Women also seek prestigious brands (Anchor and Kourilová, 2009). On the other hand, men pay more attention to recognized, fund and functional brands (Parsons, 2002). Female consumers exercise hedonic feelings when evaluating products, but men assess utilitarian values of products (Yang and Lee, 2010). Therefore, men and women are supposed to relate to products and brands differently.

In the case of HLCPs, where the constituent brands originate from very diverse product categories, the impact of brand fit and product fit on the likelihood of success of the co-branded product is more complex. Previous studies show that men care about more practical attributes of products (Venkatesh and Morris, 2011), while women are more sensitive to evaluating the extension of prestigious brands (Lau and Phau, 2010). We argue that brand fit and product fit affect male and female attitude in different ways, generating different cognitive, affective and behavioral responses. Consequently, we formulate the following hypotheses:

H1: Compared to female consumers, attitudes of male consumers toward HLCPs are more relevantly affected by product fit.

H2: Compared to male consumers, attitudes of female consumers toward HLCPs are more relevantly affected by brand fit.

4.2.6 Acceptance of high-tech products

Given that HLCPs are based on a high-tech product with an additional luxury attribute, a basic element to consider is consumers' acceptance of high-tech products in general. Shopping for high-tech products involves a big challenge for consumers in several ways. First, with the development of science and technology, high-tech products have become more delicate and complex, integrating many advanced functions into one device. Since a significant amount of technobabble terminology has been created by high-tech companies and the technical jargon used by trained salespeople may confuse consumers, the evaluation of products' attributes is not an easy task. Second, a common perception of high-tech products is that they bring in conveniences for people as well as problems (Hawkins *et al.*, 2001). For example, one may experience pleasure in using computers to perform word processing. However, the user may feel frustrated sometimes due to the inability to fully use all functions. This paradox causes users

anxieties and frustrations toward high-tech products. Due to this complexity of high-tech products, it is appropriate to assess consumers' acceptance of high-tech products.

Previous studies have revealed that technology anxiety and acceptance of high tech products correlate with demographic variables, mostly gender (Gilbert, *et al.*, 2003). Specifically, sex role typing has an influence on various aspects of consumer behavior (Bem, 1981). Concerning high-tech products, men expect to get more utilitarian value than women do (Geser, 2006). This is because men have long been associated with technology, while women have often been depicted as somewhat passive users (Van Slyke *et al.*, 2002). Additionally, females are shown to have higher levels of technology anxiety in comparison to males, given the *masculinity* nature of high-tech products (Gilbert *et al.*, 2003). Therefore, the acceptance of high-tech products (i.e., the ability to appraise their characteristics) represents a key determinant of a consumer's behavioral intention of HLCPs. We expect male consumers to be more acceptable and familiar with high-tech components of HLCPs. Following this reasoning, we specify:

H3: Compared to female consumers, attitudes of male consumers toward HLCPs are more relevantly affected by the acceptance of high-tech products.

4.2.7 Attitude toward luxury goods

The other component of HLCPs is luxury. A major characteristic of luxury goods is that they lure consumers to pay high prices for luxury goods (Ait-Sahalia *et al.*, 2004; Mason, 1981). Consumers usually buy luxury goods in order to advertise their wealth and communicate their higher social status. These consumers focus more on the intangible attributes (e.g., vanity or satisfaction) of luxury products rather than the tangible attributes (e.g., functional features). The main motivations for such a behavior are due to the desire to (1) impress others with luxury goods which represent a symbol of money, and (2) to distinguish oneself from other ordinary people in order to convey a higher social status (Mason, 1981). Other motivations to possession of luxury goods exist and have also been identified. They are conformity, social recognition (Park *et al.*, 2008), parental influence (Prendergast and Wong, 2003), and social acceptance (Summers *et al.*, 2006)

Wilcox *et al.* (2009) studied consumers' attitudes towards luxury brands. They identified that the attitudes are determined either by consumers' social-adjustive function – which provides social status – or their value-expressive function – which is a self-expression of personality and values (Wilcox *et al.*, 2009). With social-adjustive function, consumers buy luxury goods, because they want to show others that they are rich or they have resources to purchase such expensive products. With value-expressive function, consumers buy luxury goods, because they want to satisfy their inner needs.

Besides these two functions determining consumers' attitudes towards luxury goods, consumers' cognitive and affective responses are also important in helping us to better understand what drives their attitudes (Wiedmann *et al.*, 2007). However, firms' ability to influence consumers' attitude towards luxury goods alone is not enough, because positive and negative attitudes affect their recommendation behaviors differently. Phau *et al.* (2009) and Phau and Teah (2009) show that consumers with favorable attitudes toward luxury goods will buy luxury goods, while consumers with unfavorable attitudes are against buying luxury goods. Therefore, a positive attitude towards luxury goods is needed for the success of the sales of luxury goods.

Gender has also been demonstrated as an important determinant of attitudes towards luxury goods. Women purchase luxury goods more often than men, for the simple reason that women's shopping action is explained by their desires towards fashion and to follow fashion trends (Phillips, 1997). Compared with men, women like to use luxury goods to build close relationships with their friends (Parsons, 2002). Women were also found to be more involved with fashion products, whereas men were more involved with cars (O'Cass, 2004). Furthermore, since males and females have different ways of processing information, they are likely to evaluate luxury goods differently. For example, the study of Gould and Stern (1989) show that, regarding fashion consciousness, women pay more attention to their external appearance, as reflected by positive relationship between fashion consciousness and public self-consciousness; while men emphasize more on who they are, as reflected by the positive relationship between fashion consciousness and private gender-consciousness.

In the case of HLCPs, irrespective of the functions of the products that prevail in consumers' minds, a positive attitude toward luxury goods should represent a pre-condition for the development of a subsequent positive attitude towards HLCPs. Thus, we expect differences in gender to influence consumers' attitude towards luxury goods and we draw the following hypothesis:

H4: Compared to male consumers, attitudes of female consumers toward HLCPs are more relevantly affected by attitude toward luxury goods.

4.3 Empirical methodology

4.3.1 Products

In the survey, we analyzed consumers' responses toward HLCPs that already exist in the marketplace. They are co-branded cell phones by "SAMSUNG GIORGIO ARMANI" and "LG PRADA". We chose to study cell phones as they are one of the

common electronic products among consumers, representing an appropriate example of co-branded products for our study. Moreover, consumers could evaluate these products easier than other HLCPs such as Chanel Segway.

We need to test consumers' brand familiarity toward HLCPs, because when respondents are familiar with the products, they could easily evaluate the "equal" contributions of the co-branding strategy of these HLCPs (Simonin and Ruth, 1998). We tested brand familiarity using a seven-point Likert scale with 7 representing "highly familiar" and 1 representing "highly unfamiliar." The results show respondents' high familiarity towards these four brands: SAMSUNG ($M_{\text{Male}} = 5.90$; $M_{\text{Female}} = 5.91$), LG ($M_{\text{M}} = 5.97$; $M_{\text{F}} = 5.96$), GIORGIO ARMANI ($M_{\text{M}} = 5.35$; $M_{\text{F}} = 5.19$) and PRADA ($M_{\text{M}} = 5.20$; $M_{\text{F}} = 5.09$). The results also show that male and female consumers have insignificant differences in attitudes between two high-tech brands (male: $t = 0.18$, $df = 192$, $p = 0.85$; female: $t = 0.39$, $df = 289.38$, $p = 0.70$) and two luxury brands (male: $t = -0.95$, $df = 192$, $p = 0.35$; female: $t = -0.77$, $df = 297$, $p = 0.44$).

4.3.2 Respondents

This study explores the influences of gender differences on consumer behavior toward the possession of HLCPs. All respondents were Spanish undergraduate students from one major university in Madrid. They completed the surveys as a partial fulfillment of one of their university courses, a Marketing Management course. Two different versions of the questionnaire were used for each HLCP combination and respondents were randomly assigned to one of the two questionnaires.

University students, instead of random respondents, were used to increase the homogeneity of the sample and to minimize the random error caused by selecting the general public (Calder *et al.*, 1981). In general, students with higher educational level will usually have higher salaries and social status in the future. For some students, even though they do not have the ability to purchase HLCPs, they will still have the ability to evaluate products and could recommend others to buy these products.

Original responses were five hundred and sixty-six. After excluding invalid answers and surveys where students expressed low brand familiarity toward products⁷, we were left with four hundred and ninety-three responses (87%). Thirty-nine percent of the total sample was male ($n_{\text{Male}} = 193$) and sixty-one percent of the total sample was female ($n_{\text{Female}} = 300$). The ratios of sample size to survey items (30 items) for the sample satisfies the minimum requirements specified by both Gorsuch (1983) and Thompson (2000).

⁷ Each testing question for brand familiarity (high-tech brand and luxury brand) has three items (7-point Likert scale). Only when a respondent chose each item larger than 2 and the sum is larger than 7, is this survey considered a valid response.

4.3.3 Measures and procedures

Participants completed the online survey. When completing online surveys, the product information sheet consisting of three parts – product name, picture of the product, and a set of product features including price – was available for the respondents (See Appendix A).

All measures employed in the surveys were 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). We translated our questionnaires into Spanish using a back-translation to assure comparability and equivalence in the meaning of questionnaires (Brislin, 1970; Hult *et al.*, 2008). We adopted these items from previous studies. To measure affective responses (reliability coefficient – Cronbach alpha, $\alpha_{A(Male)} = 0.78$; $\alpha_{A(Female)} = 0.72$) and cognitive responses ($\alpha_{C(Male)} = 0.83$; $\alpha_{C(Female)} = 0.83$), we used the items from Ratchford (1987). To measure the acceptance of high-tech products ($\alpha_{H(Male)} = 0.92$; $\alpha_{H(Female)} = 0.91$), we used the items by Roehm and Sternthal (2001). To measure the attitude toward luxury goods ($\alpha_{L(Male)} = 0.92$; $\alpha_{L(Female)} = 0.92$), we followed the scale developed by Wilcox *et al.* (2009). To measure the product fit ($\alpha_{P(Male)} = 0.86$; $\alpha_{P(Female)} = 0.83$) and brand fit ($\alpha_{B(Male)} = 0.76$; $\alpha_{B(Female)} = 0.73$), we used the scale of Simonin and Ruth (1998). Lastly, to measure the recommendation to buy ($\alpha_{R(Male)} = 0.87$; $\alpha_{R(Female)} = 0.88$), we adopted the scale developed by Baker and Churchill (1977). Our Cronbach's alphas for all the scales were above 0.6. This is considered an acceptable Cronbach's alpha cutoff according to Bagozzi and Yi (1988).

In this study, we adopt ANOVA (analyses of variance) to test the relationships depicted in Figure 1. Based on the ABC model of attitudes, the three components of consumer attitude – affect, cognitive and behavioral intention – are individually affected by four factors, which are (1) attitude towards luxury goods, (2) product fit, (3) brand fit, and (4) acceptance of high-tech products. We performed twelve 2 (gender: male, female) \times 2 (factors: high, low) ANOVA tests in order to obtain results that can give more detailed and interesting results than just one-way ANOVA. We sorted the four factors into *high* and *low*, with respect to the median of the sum of the items. Then, we also used one-way ANOVA to test for the interaction effects of each component specified in our hypotheses.

Table 1 shows the mean and standard deviations (SD) of each scale. The median of *acceptance of high-tech products* is 42. This means that if one respondent's sum of the items of *acceptance of high-tech products* is larger than 42, then this respondent's attitude toward *acceptance of high-tech products* is *high acceptance of high-tech products*. The median of *product fit* is 10, *brand fit* is 10, and *attitude toward luxury goods* is 25.

Table 1. Mean values and standard deviations of items

Items		Male		Female	
		High	Low	High	Low
AccHiTech (8 items)	(High:>42)	48.91(3.46)	35.91(5.12)	48.59(7.27)	34.11(3.83)
ProdFit (3 items)	(High:>10)	13.66(2.01)	7.17(2.07)	13.85(2.72)	7.78(1.86)
BrandFit (3 items)	(High:>10)	13.45(2.28)	7.43(2.01)	13.55(2.38)	7.48(1.86)
AttLuxury (8 items)	(High:>25)	36.26(7.29)	17.97(4.50)	36.23(7.60)	16.75(4.80)

Note: (1) Standard deviations reported in parentheses.

(2) Each survey item is 7-point Likert scale

4.4 Results

4.4.1 Product fit as an independent variable

Table 2 describes the relationships among *product fit*, *gender differences*, *recommendation to buy*, *affective responses* and *cognitive responses*. The results show that the interaction effect between *product fit* and *gender differences* only affect *recommendation to buy* ($F(1, 489) = 3.23, p < 0.10$), but not *affective responses* ($F(1, 489) = 0.50, p = 0.48$) nor *cognitive responses* ($F(1, 489) = 1.05, p = 0.31$). The significant interaction effect means that (1) consumers' perception of *product fit* on consumers' *recommendation to buy HLCPs* are affected by *gender differences*, and (2) *gender differences* on consumers' *recommendation to buy HLCPs* are affected by consumers' perception of *product fit*.

One-way ANOVA showed two significant and two insignificant results. First, in *high product fit*, attitude of male consumers toward *recommendation to buy* is higher than those of female consumers ($F(1, 226) = 3.58, p < 0.10$; $M_{\text{Male}} = 7.43 > M_{\text{Female}} = 6.63$). Figure 2 shows that male consumers show more favorable attitudes toward *recommendation to buy* in *high product fit* than females. Female consumers' *recommendation to buy* mostly maintain similar level no matter in the *low* or *high product fit*. Second, with male consumers, the effect of *high product fit* on *recommendation to buy* is higher than the effect of *low product fit* ($F(1, 187) = 4.58, p < 0.05$; $M_{\text{HPR}} = 7.44 > M_{\text{LPR}} = 6.45$). Third, in *low product fit*, the effect of attitudes of both male and female consumers on *recommendation to buy* is insignificant ($F(1, 260) = 0.40, p = 0.56$). Last, with female consumers, the effect of *high or low product fit* on *recommendation to buy* is insignificant ($F(1, 302) = 0.01, p = 0.86$).

Concerning affective and cognitive responses, the interaction effect does not exist. Moreover, the direct effect only exists for *product fit*, but not for *gender*. Results show that *product fit* affects both *affective responses* ($F(1, 489) = 28.74, p < 0.01$) and

cognitive responses ($F(1, 489) = 29.76, p < 0.01$). H1 is supported only for the dependent variable of *recommendation to buy*.

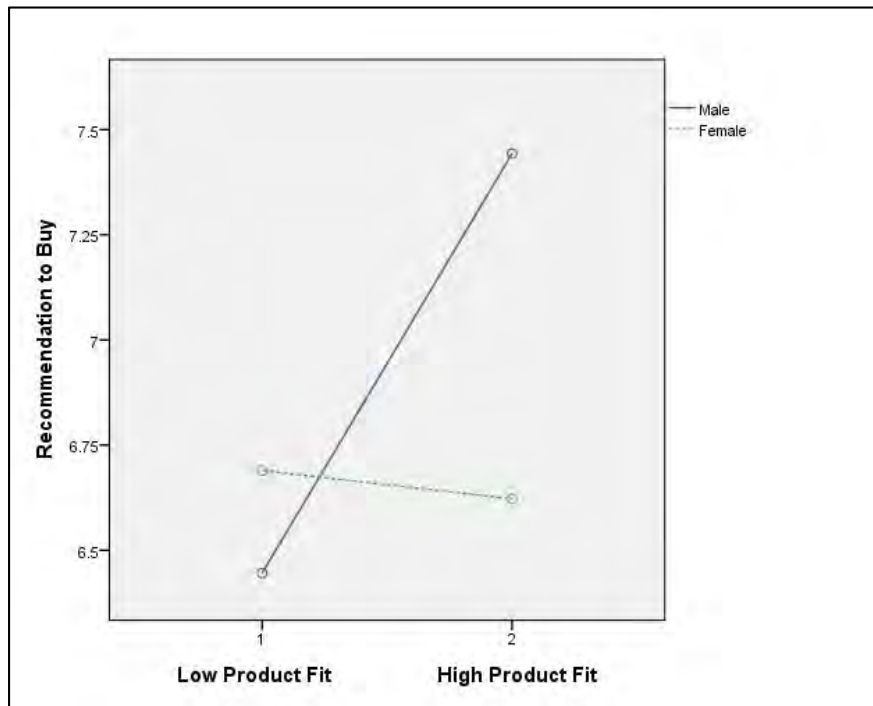
Table 2. ANOVA results of Independent variable as *Product fit*

Factors Source	Recomm to buy		Cognitive responses		Affective responses		
	df	<i>F</i>	<i>p-value</i>	<i>F</i>	<i>p-value</i>	<i>F</i>	<i>p-value</i>
Product fit (<i>C</i>)	1	2.46	0.12	29.76	0.00*	28.74	0.00*
Gender (<i>B</i>)	1	0.98	0.33	0.00	0.99	0.29	0.59
<i>C</i> × <i>B</i>	1	3.23	0.07**	1.05	0.31	0.50	0.48
Error	489						

** $p < 0.10$; * $p < 0.05$

Figure 2

Interaction effect of gender differences and product fit



4.4.2 Brand fit as an independent variable

Table 3 describes the relationships among *brand fit*, *gender differences*, *recommendation to buy*, *affective responses* and *cognitive responses*. The results show that the interaction effect is insignificant overall. Thus, H2 is not supported. However, *brand fit* significantly affects *recommendation to buy* ($F(1, 489) = 4.20, p < 0.05$; $M_{HBR} = 7.46 > M_{LBR} = 6.66$), *cognitive responses* ($F(1, 489) = 24.62, p < 0.01$; $M_{HBC} = 1.55 > M_{LBC} = 1.33$) and *affective responses* ($F(1, 489) = 23.79, p < 0.01$; $M_{HBA} = 1.57 > M_{LBA} = 1.35$). From the results of mean comparison, *high brand fits* have higher impacts than *low brand fits* on three dependent variables.

Table 3. ANOVA results of Independent variable as *Brand fit*

Source	Factors	Recomm to buy		Cognitive responses		Affective responses	
	df	<i>F</i>	<i>p-value</i>	<i>F</i>	<i>p-value</i>	<i>F</i>	<i>p-value</i>
Brand fit (<i>C</i>)	1	4.20	0.04*	24.62	0.00*	23.79	0.00*
Gender (<i>B</i>)	1	1.01	0.32	0.01	0.95	0.29	0.59
<i>C</i> × <i>B</i>	1	1.71	0.19	0.04	0.84	0.68	0.41
Error	489						

* $p < 0.05$

4.4.3 Acceptance of high-tech products as an independent variable

Table 4 describes the relationships among *acceptance of high-tech products*, *gender differences*, *recommendation to buy*, *affective responses* and *cognitive responses*. The results show that the interaction effect between *acceptance of high-tech products* and *gender differences* only affect *recommendation to buy* ($F(1, 489) = 4.16, p < 0.05$), but not *affective responses* ($F(1, 489) = 0.15, p = 0.70$) nor *cognitive responses* ($F(1, 489) = 0.20, p = 0.66$). Furthermore, the direct effect of *acceptance of high-tech products* is significant on *recommendation to buy* ($F(1, 489) = 4.25, p < 0.05$) and *affective responses* ($F(1, 489) = 10.12, p < 0.05$), but not on *cognitive responses* ($F(1, 489) = 0.11, p = 0.66$). Thus, H3 is partially supported.

One-way ANOVA showed two significant and two insignificant results. First, in *high acceptance of high-tech products*, attitudes of male consumers toward *recommendation to buy* are higher than those of female consumers ($F(1, 187) = 6.72, p < 0.05$; $M_{\text{Male}} = 7.37 > M_{\text{Female}} = 6.66$). Figure 3 shows that male consumers show more favorable attitudes toward *recommendation to buy* in *high acceptance of high-tech products* than females. Female consumers' *recommendation to buy* mostly maintains a similar level no matter in the *low* or *high acceptance of high-tech products*. Second, with male consumers, the effect of *high acceptance of high-tech products* on *recommendation to buy* is higher than the effect of *low acceptance of high-tech products* ($F(1, 288) = 3.53, p < 0.1$; $M_{\text{HHR}} = 7.37 > M_{\text{LHR}} = 6.66$). Third, in *low acceptance of high-tech products*, the effect of attitudes of both male and female consumers on *recommendation to buy* is insignificant ($F(1, 201) = 1.22, p = 0.27$). Last, with female consumers, the effect of *high* or *low acceptance on high-tech products* on *recommendation to buy* is insignificant ($F(1, 302) = 0.00, p = 0.99$).

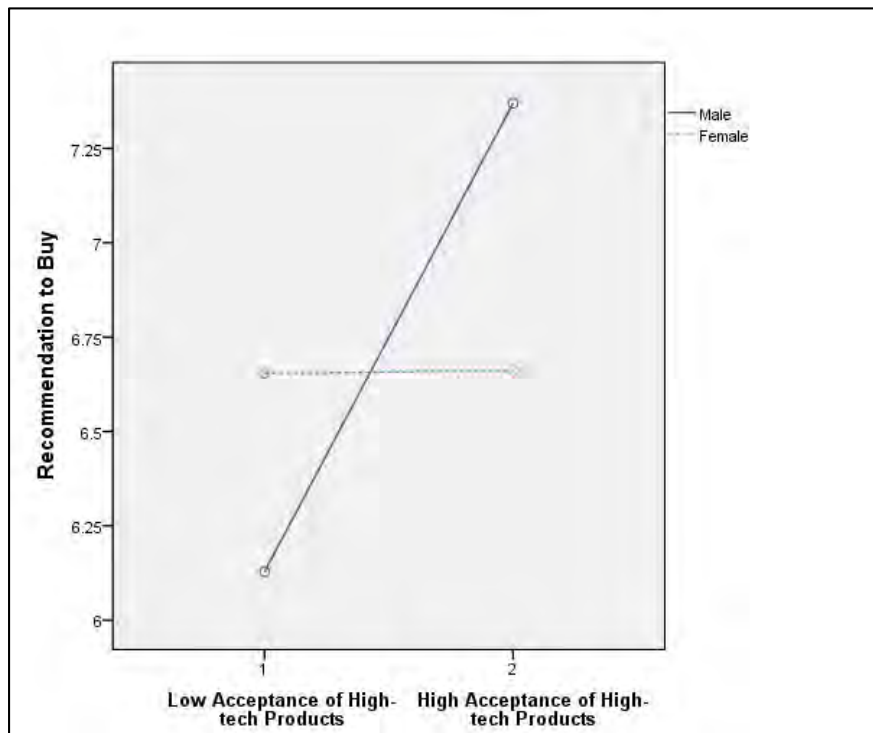
Table 4. ANOVA results of Independent variable as *Acceptance of high-tech products*

Factors Source	Recomm to buy		Cognitive responses		Affective responses		
	df	F	p-value	F	p-value	F	p-value
AccHiTech (C)	1	4.25	0.04*	0.11	0.66	10.12	0.01*
Gender (B)	1	0.09	0.76	0.01	0.97	0.62	0.43
C × B	1	4.16	0.04*	0.20	0.66	0.15	0.70
Error	489						

* $p < 0.05$

Figure 3

Interaction effect of gender differences and acceptance of high-tech products



4.4.4 Attitude toward luxury goods as an independent variable

Table 5 describes the relationships among *attitude towards luxury goods*, *gender differences*, *recommendation to buy*, *affective responses* and *cognitive responses*. The results show that the interaction effect is insignificant overall. Thus, H4 is not supported. However, *attitude toward luxury goods* significantly affect *affective responses* ($F(1, 489) = 110.6, p < 0.01; M_{HLA} = 1.69 > M_{LLA} = 1.25$), *cognitive responses* ($F(1, 489) = 14.12, p < 0.01; M_{HLC} = 1.52 > M_{LHC} = 1.35$), but not *recommendation to buy* ($F(1, 489) = 0.18, p = 0.68$). From the results of mean comparison, *high attitude toward luxury goods* have stronger impacts than *low attitude toward luxury goods* on two dependent variables.

Table 5. ANOVA results of Independent variable as *Attitude toward luxury goods*

Factors Source	Recomm to buy		Cognitive responses		Affective responses		
	df	<i>F</i>	<i>p-value</i>	<i>F</i>	<i>p-value</i>	<i>F</i>	<i>p-value</i>
AttLuxy (<i>C</i>)	1	0.18	0.68	14.12	0.00*	110.6	0.00*
Gender (<i>B</i>)	1	0.74	0.39	0.03	0.86	0.06	0.80
<i>C</i> × <i>B</i>	1	0.02	0.89	1.84	0.18	0.07	0.79
Error	489						

* $p < 0.05$

4.5 Conclusions

4.5.1 Discussion

The goal of this study is to explore how gender differences influence consumer's attitude toward recommendation to buy HLCPs. Most previous research on co-branding mainly deals with analyzing the impact of antecedents on conative attitude without untangling the different paths through which the various drivers of co-branding success impact consumer attitude. Therefore, we help to fill the gap in the literature by employing the ABC model of attitudes that splits attitude into three components: affective, behavior and cognition. By decomposing consumer attitude into three main components, this paper sheds light on the subtle routes underlying consumer behavior in the case of co-branded products.

Though co-branding plays a significant role in the success of corporate brands, the effect of gender differences has not been explored yet. Our analysis also helps to fill the gap here by presenting marketers the following interesting results.

Concerning the results which present significant interaction effect, gender only plays an interacting role in the relationships between (1) product fit and recommendation to buy, and (2) acceptance of high-tech products and recommendation to buy. In the case of product fit, high product fit is more critical in order to attract male consumers than female consumers to recommend others to buy HLCPs. Our result is consistent with the work of Aaker and Keller (1990) which demonstrates that a perceived high fit will lead to a favorable evaluation of co-branded products. Concerning acceptance of high-tech products, male consumers have stronger willingness than female consumers to recommend HLCPs under the context of high preferences toward acceptance of high-tech products. High acceptance of high-tech products invokes male consumers to have stronger motivations to recommend HLCPs to others. This indicates that when male consumers perceive high-tech features of HLCPs as more advanced, they will recommend these products to others. Our result is consistent with the work of Geser

(2006) in which high-tech features of products are perceived by male consumers more than female consumers.

Concerning the results which present insignificant interacting effect, gender does not play an interacting role in the relationships between (1) brand fit and the three components of attitude, and (2) attitude toward luxury goods and the three components of attitude. It means gender differences neither affect consumers' responses nor produce interactive synergies with each of the three tested components of attitude. The possible explanation might be that our tested products are cell phones. They are generally regarded as high-tech products. Our empirical results show that male consumers emphasize the importance of product fit and acceptance of high-tech products. Female consumers highlight the prominence of brand fit and attitude toward luxury goods. In addition, females present higher anxious attitudes toward high-tech products than males do (Gilbert *et al.*, 2003). Therefore, female consumers are probably less engaged when considering the perception of brand fit and attitude toward luxury goods of HLCs. Regarding affective and cognitive responses, a plausible explanation of this insignificance of gender differences can be that both male and female consumers do not distinguish between hedonic and utilitarian features of HLCs. This might also be caused by the characteristics of our tested products, which are cell phones that generally attract male consumers more than female consumers.

4.5.2 Managerial implications

The main critical finding of our study is that gender differences do influence consumer attitude toward HLCs. Male and female consumers base their behavioral decisions on their own preferences. On the basis of recommendation to buy HLCs, marketers should focus more on male consumers. Even though HLCs combine high-tech and luxurious attributes together, consumers still perceive the high-tech attribute as stronger than luxurious attributes. Additionally, male consumers have higher acceptance towards high-tech products. Therefore, marketers should not only focus on male consumers, but also emphasize more on the high-tech features of HLCs, along with high-tech product fit with luxury brand names.

In terms of marketing strategies, advertisements of high-tech companies targeting high-end consumers of luxury goods should enhance the exclusive features of luxury goods. This change would invoke consumers to change their inherent concept toward HLCs, which are not only high-tech products, but also very attractive luxury goods. In addition, high-tech companies could cooperate with well-known luxury brands to enhance the visibility of products. This is consistent with the suggestion of Venkatesh *et al.* (2000), who proposed that alliances are (easily) successful when teaming up with a comparable brand. Both high-tech features of HLCs and product fit are critical keys

toward ensuring success of HLCPs. As there are no significant effects of gender on affective and cognitive responses, marketers do need to select the key components to emphasize the features of HLCPs.

In general, firms should adapt their communication and advertising policies to target different genders to which HLCPs are distributed. The empirical results of this study show that males have strong recommendation to buy HLCPs more than females do. Therefore, the advertising campaign could focus on the promotion and advertisement on male-dominated channels such as male fashion magazines, male radio and TV programs. This advertising campaign that pays more attention to male consumers, displaying images and communicating values that are related to male imaginary, aiming at this specific consumption group, will eventually increase the performance of co-branding when putting the attitudes towards HLCPs of different gender into practice. Through analyzing gender differences, marketing managers and advertisers not only can realize what consumers' preferences are, but can also enhance consumers' positive evaluation of products.

4.5.3 Limitations and future research

This study has several limitations which suggest several opportunities for future research in the field of gender differences. First, it uses a convenience sample of university students as respondents. Although student samples reduce the problems of heterogeneity, future research could test this model with a general public for generalizability purpose. In addition, consumers with different age have different attitudes, preferences and opinions (Hawkins *et al.*, 2001). The respondents of this study are university students who are less than 30 years old. The study might be extended to different age groups (i.e., from 31 to 40 years, from 41 to 50 years, and more than 51 years) to measure if men and women in different age groups do behave differently.

Second, we only considered two very specific HLCPs, even though there are several others HLCPs in the market. Future research could employ other types of HLCPs to make the study more complete and representative for other product categories.

Finally, our study is based on responses to an on-line questionnaire of potential consumers, but not on the investigation of actual possessing behavior of real consumers. Future research could strive to examine consumers who really have intentions to buy HLCPs in order to assess the determinants of their attitude.

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Appendix A

Tested Products

(LG PRADA cellphone & SAMAUNG ARMANI cellphone)



Compra de productos electrónicos-	
LG KF900 PRADA II-	
• Precio:-	630 €-
• Introducción:-	Panel Dactil y Teclado QWERTY
• Red:-	GSM(850/900/1800/1900),EDGE, UMTS(900/2100), HSDPA 7.2 Mbps, Wi-Fi-
• Tamaño físico:-	3.00 pulgadas-
• Capacidad de división:-	240*400-
• Memoria:-	60MB-
• Expansion slot:-	microSD/microSDHC-
• Cámara:-	5 megapíxeles resolución-
• Conexión:-	USB, Wi-Fi, Bluetooth-
• Dimensiones:-	104.5 x 54.0 x 16.75mm-
• Peso:-	130g-



Compra de productos electrónicos-	
SAMSUNG B7620 GIORGIO ARMANI-	
• Precio:-	700 €-
• Introducción:-	Panel Dactil y Teclado QWERTY
• Red:-	GSM(850/900/1800/1900),EDGE, UMTS(900/2100) ,HSDPA 7.2 Mbps, Wi-Fi, GPS y AGPS-
• Tamaño físico:-	3.50 pulgadas-
• Capacidad de división:-	400*800-
• Memoria:-	8GB de memoria interna ampliables a 32GB-
• Expansion slot:-	microSD/microSDHC-
• Cámara:-	5-megapíxeles resolución-
• Conexión:-	USB, Wi-Fi, Bluetooth-
• Dimensiones:-	118 x 58.3 x 16.4mm-
• Peso:-	164g-