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**SHOW ME YOUR FRIENDS AND I WILL TELL YOU WHO YOU ARE:
A CONSUMER EVALUATION OF COBRANDING EXTENSIONS
USING STRUCTURAL EQUATION MODELING**

by

COSTAS HADJICHARALAMBOUS

A dissertation submitted to the Graduate Faculty in Business
in partial fulfillment of the requirements for the degree of Doctor of Philosophy,
The City University of New York.

2001

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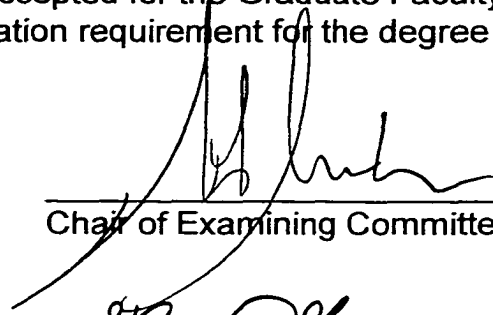
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This manuscript has been read and accepted for the Graduate Faculty in Business in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

April 19, 2001
Date



Chair of Examining Committee

April 24, 01
Date



Executive Officer

Dr. Steven Schnaars

Dr. Eleonora Curlo

Dr. Edward Wolf

Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

Abstract

SHOW ME YOUR FRIENDS AND I WILL TELL YOU WHO YOU ARE:

A CONSUMER EVALUATION OF COBRADING EXTENSIONS:

USING STRUCTURAL EQUATION MODELING

by

COSTAS HADJICHARALAMBOUS

Advisor: Professor Steven Schnaars

This study extends the brand extension-brand equity research by examining the relatively new, but pervasive, phenomenon of cobranding. Cobranding is defined as the use of two or more brands to name a new product (e.g., Compaq Fisher Price baby computer). Cobranding is positioned as a case of brand extensions, on one hand, and as a conceptual combination, on the other. Drawing from previous research in brand extensions and integrating into it elements of the conceptual combination literature, a conceptual model for evaluating cobranding extensions is proposed.

Consistent with previous research in brand extensions, the evaluation of cobranding extensions is modeled as a function of (1) the quality of each of the brands involved in the extension, and (2) the fit of each of the constituent brands with the co-branded product. However, unlike previous research, and a significant contribution of the study, the author's position is that the major effects

of fit of each of the constituent brands are indirect. The consumers' evaluation of the extension takes place, first, by assessing the degree of overall fit between the cobrand and the extension. In turn, the overall fit is determined by considering simultaneously the fit of each of the constituent brands with the extension and the compatibility between the brands, irrespective of the product featured in the extension. Taken collectively, the results of the main (n=228) and the replication (n=368) studies provide support for the model.

The contribution of the study goes beyond the theoretical and managerial implications related to the specific findings. The proposed conceptual model can be used to study other types of branding strategies, such as composite brand extensions, ingredient and component branding, brand bundling, co-promotion, and advertising alliances. Studying alternative branding strategies under the same conceptual framework will make it possible to organize existing knowledge better, unify alternative streams of research, and examine similarities and differences among alternative cobranding strategies. This should open new avenues for further research in the area of branding, brand equity, and brand management.

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CHAPTER 1

INTRODUCTION

Managers and product developers long ago realized that development and successful introduction of new brands cannot be done overnight (Aaker 1996). They understood that developing a new brand is time consuming, costly, and risky. In an attempt to reduce cost and minimize risks, they became heavily involved in brand extension. That is, they used an established brand to enter new market segments, new markets, or new product categories (Tauber 1988). Many factors contribute to the success or failure of such a strategy. The long term success of a brand (and, of course, brand extensions) depends on management's ability to select a brand meaning, operationalize that meaning in the form of an image, and maintain the brand's image over time (Gardner and Levy 1955).

The underlying rationale for brand extension is that brands are assets that are valuable only to the extent they can be used to generate positive cash flows for the firm in the future. Asset value is realized in existing products that carry the brand name and from future "new" products that might be introduced under the name of an established brand. The case of Ivory demonstrates this point. Introduced in 1880s as a one-product brand (bar soap), Ivory has been extended into many other product categories, e.g., liquid soap, powder detergent, liquid detergent, and shampoo. It is estimated that, since its introduction, the Ivory brand has generated profits of about \$2.5 billion (Aaker 1991).

1.1. PURPOSE OF THE STUDY

The present study attempts to expand the brand-extension equity research into a new area, that of cobranding. Cobranding can be defined as the use of two or more established brands to name a new product.

Cobranding has been around for years. For example, Betty Crocker paired with Sunkist Groves as early as 1961 to market a lemon chiffon cake mix (Cleland 1994). Cobranding has increased in recent years as a means of exploiting brand equity.

Manufacturers and retailers used to introduce their own credit cards. Recently, they have begun to cooperate with major credit card issuers and other banking institutions to jointly introduce credit cards carrying their names. "Ford Citibank Visa" and "Shell MasterCard from Chase" are only two of the numerous examples in the credit card business.

An example of what can be achieved by such a strategy is the case of the General Motor credit card. The GM credit card was launched in September 1992 through an agreement between GM and Household Credit Services (HCS). In less than a month, the GM card generated an industry growth record with more than one million accounts. After one year, the card had five million accounts and \$3.3 billion in outstanding balances. Furthermore, within one year about 55,000 GM credit card holders have purchased GM vehicles by using their GM credit cards (Colloquy 1995).

While common in the credit card business, cobranding has lately made its appearance in other product categories. Cobranding and other cooperative brand activities recently have enjoyed a 40% annual growth (Spethmann and Benezra 1994).

Cobranding can be used to identify product ingredients or components, or to give potential customers a quality assurance. For example, NutraSweet and its logo can be found in more than 3,000 products (Arnott 1994). Personal computer manufacturers include the "Intel Inside" logo in their promotional and advertising campaigns as well as on packaging. This conveys a message about the quality of the products. In other cases, as demonstrated by the "Orvis edition of Jeep Cherokee," cobranding is used to enrich existing associations or generate new ones (Serafin 1994).

Marketers appear to have recognized that, at least in some cases, using two or more brand names in the process of introducing new products offers them a competitive advantage. For example, ConAgra and Kellogg have joined efforts to market Healthy Choice adult cereals. In another cobranding effort, ConAgra has agreed to allow Nabisco to use the Healthy Choice brand in a new line of low fat, low cholesterol and low sodium snacks. From a signaling perspective (Wernerfelt 1988) the presence of a second brand on a product offers greater assurance about the quality of the product leading to higher product evaluations, market share, and retail prices. The purpose of this double appeal is to capitalize on the reputation of the partner brands in an attempt to achieve not only immediate recognition but also a positive evaluation from potential buyers

However, associating one brand with another involves risks that need to be addressed. Cobranding may also affect the partner brands negatively. One need only consider the problems experienced by Dell and Gateway when it was reported that the design of Intel Pentium processors was defective (Fisher 1994). Coke and Pepsi experienced similar problems when reports linked artificial sweetener aspartame (NutraSweet) to cancer. Furthermore, combining two brands together may cause brand meaning to transfer in ways that were never intended, or generate undesirable brand associations. Specifically, combining brands with seemingly inconsistent characteristics may cause confusion and, potentially, negative consequences.

Therefore, the potential benefits and risks associated with cobranding strategies must be explored and examined theoretically and empirically. In the case of single brand extensions, the problem is to choose the product category into which the brand will be extended. In the case of cobranding, choosing the right partner brand(s) is an additional problem. A wrong selection might lead not only to a failure of the cobranding extension, but also might dilute the brand equity of one or more of the brands involved in the extension.

These issues have been given significant attention in the case of single brand extensions. Most of the theoretical and managerial implications of single brand extensions have been addressed in the broader context of brand equity (Keller 1998). Cobranding phenomena, however, have been generally ignored. Cobranding goes beyond the credit card business and is far more pervasive than the current level of research interest suggests. As noted by Shocker, Srivastava,

and Ruekert (1994), cobranding is important and deserves more attention from academic researchers. While cobranding has recently received attention (e.g., Rao and Ruekert 1994; Park, Jun, and Shocker 1996; Simonin and Ruth 1998), a conceptual model for evaluating cobranding strategies and cobranded products has not yet been developed. This study is a step in that direction.

1.2. CONTRIBUTION OF THE STUDY

This dissertation treats cobranding as a case of brand extension. Such a view allows us to draw on a previous, and relatively rich, research (theories and methodology) on brand extensions. The study also emphasizes the latent value of brands and highlights the relationship between cobranding and brand equity. This suggests important questions to guide the inquiry into cobranding:

1. To what extent do consumer evaluations of cobranding extensions differ from evaluations of single brand extensions?
2. What are the bases, if any, for the different evaluations?
3. Under what circumstances do these different evaluations maximize the benefit of cobranding extensions as compared with the single brand extensions?
4. How do consumer knowledge and perceptions about the core brands affect evaluation of cobranding extensions? What kinds of beliefs about the original brands do consumers associate with cobranding

extensions? Under what circumstances do those beliefs have the largest impact?

5. Do any other aspects of an extension, such as the type of information provided in the extension context, affect the evaluation of a cobranding extension?
6. Under what conditions will cobranding cause dilution of brand equity?
7. Do ownership effects, documented for brand extensions, exist in the case of cobranding? To what extent are reactions from owners of each of the constituent brands similar to, or different from, reactions of non-owners?

The aim of this study is to develop a conceptual model for evaluating cobranding extensions. In doing so, the first four questions will be addressed. The proposed model and the conceptual framework developed by the study can be used in addressing the remainder.

To the academic researcher, answers to the above questions will provide a better understanding of the phenomena by highlighting the similarities and/or differences between cobranding and single brand extensions. In addition, the framework used in the study offers an opportunity to unify findings from different studies that examine alternative branding strategies.

To the practitioner/manager, the answers can provide guidelines for managing cobranding activities by addressing such issues as choosing partner

brands and evaluating potential success or failure of proposed cobranding extensions. The conditions under which cobranding is an effective strategy are also identified.

1.3. ORGANIZATION OF THE REMAINDER OF THE DISSERTATION

Chapter 2 reviews the available literature pertinent to branding, brand extension, and cobranding. Similarities and differences between brand extensions and cobranding are highlighted. Alternative theoretical frameworks potentially useful in studying cobranding are reviewed. The chapter concludes by positioning cobranding as a brand extension, on one hand, and as a novel conceptual combination, on the other. Integrating elements from both research streams provides a basis for a useful conceptual framework for studying cobranding. Based on this framework, Chapter 3 examines the factors that influence cobranding and presents a model for evaluating cobranding extensions. The salient points from the literature are explicated as they apply to the various hypotheses. Chapter 4 presents the methodology used to test the goodness of fit of the model and the hypotheses presented in Chapter 3. In addition, the chapter describes the procedures used to develop hypothetical cobranding extensions, as well as the measures of the underlying constructs. Chapter 5 explains the statistical methods used and reports the results of two studies. Finally, Chapter 6 highlights the contribution of the study, discusses the theoretical and managerial implications, the limitations of the study, and presents some suggestions for further research.

CHAPTER 2

LITERATURE REVIEW

This chapter reviews relevant literature and lays the foundation on which the study hypotheses are based. The chapter begins with a historical perspective on branding, followed by a general discussion of brand equity. As the discussion proceeds, the focus shifts towards brand extensions and cobranding. Problems with current conceptualizations are identified and commented upon. Alternative theoretical frameworks that may help overcome current problems are reviewed. Next, cobranding is positioned as a case of brand extension, on one hand, and as a novel conceptual combination, on the other. Integrating elements from research in brand extensions and conceptual combinations literature, a conceptual framework to study cobranding is developed.

2.1. THE VALUE OF BRANDS

The practice of branding by labeling a product with a symbol or by identifying the seller or the producer goes back centuries (Deck 1990). Modern branding has its origins in the nineteenth century. The industrial revolution and the consequent availability of a plethora of relatively new products made selection of a good brand name very important (Robertson 1989). "For consumers, branded products had clear and distinct identities. Their distinctive packaging made them identifiable on sight. If consumers' experience were

unsatisfactory, they knew what to avoid in the future." (Low and Fullerton 1994, p. 176).

According to Kotler (1991, p.442), a brand can be defined as "a name, term, sign, symbol, design or combination of them which is intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competitors." Kotler's definition implies that a brand has value (equity) beyond the tangible assets associated with the manufacturing or the physical characteristics of products that carry the brand.

2.1.1. Brand Equity

Aaker (1991) conceptualizes brand equity as the value of the brand. Brand equity is a function of awareness, esteem, loyalty, associations, and perceived quality. Brand equity is a set of brands assets and liabilities linked to a brand, its name, and symbol. Those assets/liabilities add to, or subtract from, the perceived value provided by a product or service to a firm and/or to that firm's customers.

Although interest in the concept of brand equity goes back to the 1950's (Biel 1993), researchers have only recently devoted significant attention to brand equity (Farquhar, Han, and Ijiri 1991; Keller 1993; Maltz 1991; Srivastava and Shocker 1991). The interest in brand equity arises from the need to increase performance and marketing efficiency. With more intense competition, mature markets, stagnant growth, increased power of channels of distribution (Shocker, Srivastava, and Ruekert 1994), and the cost of introducing a new national brand approaching \$100 million (Ourusoff et al. 1992), firms have sought new ways to

expand and grow. Instead of developing their own new brands, firms may enter into various types of alliances, such as merger and acquisition. They seek ways of leveraging their own brands by using them in naming new products.

In the case of potential mergers or acquisitions, the primary issue is estimating the financial value of the brand to the buyer and seller. This is the financial aspect of brand equity. However, the financial value of brand equity is too narrow and is limited primarily to purchase and sale of the brand. The limited usefulness of financial value of brand equity stems from the fact that it does not provide marketers guidance for first building, and then exploiting, brand equity.

Recognizing the importance of brand equity on one hand, and trying to avoid the difficulty of financial assessment on the other, marketers have attempted to develop their own definition of brand equity. Keller (1993) addressed the issue by conceptualizing brand equity from the viewpoint of the individual consumer. Keller offered a conceptual framework based on what consumers know about brands and what such knowledge implies for marketing strategies. The concept aims at improving brand strength and, hence, brand value.

Customer-based brand equity is defined as "the differential effect of brand knowledge on consumer response to the marketing of the brand. That is, customer-based brand equity involves consumers' reactions to the elements of the marketing mix for the brand in comparison with the reactions to the same marketing mix elements attributed to a fictitiously named or unnamed version of

the product or service” (Keller 1993, p.2). Keller points out that brand knowledge has two basic components: brand awareness and brand image. Brand awareness is defined as the consumer’s ability to either recall or recognize the brand. Brand image is the set of associations about the brand that consumers have stored in their memory (Keller 1993). Keller’s conceptualization of brand equity is consistent with Biel (1993), who distinguished between the financial and the marketing aspects of brand equity. Biel suggests that brand equity is basically a financial concept associated with the valuation of brands, but is driven by brand image, a customer based concept. While the definition of brand equity varies depending on the researcher’s particular interest, the common denominator is the significant role of the end user.

According to Keller (1993) high levels of brand awareness and positive brand image increase the probability of brand choice, consumer loyalty, and marketing communication effectiveness. This allows the brand to earn higher margins and at the same time makes the brand less vulnerable to competition. Thus, customer-based brand equity is the source for positive response to different alternatives of the marketing mix for the brand. Moreover, a well-known brand with positive image provides growth opportunities through extension of the brand into other products in the same or different product categories. Keller’s conceptualization is consistent with the brand strength and value model of brand equity proposed by Srivastava and Shocker (1991). The basic premise of this model is that brand equity enhances not only the current position of the brand but also its future positions through brand extensions.

2.1.2. Brand Extensions

Brand extension strategy is defined as the use of an existing brand name on a new product or service not previously associated with the brand name (Aaker and Keller 1990; Tauber 1988). Brand extensions can be done by the parent company either introducing its own new products or licensing the name to be used on someone else's products. To the consumer, these activities are indistinguishable. What matters is the use of an established brand name to identify a new product. Potential benefits of brand extensions include immediate name recognition and the transference of benefits or other associations related to the core brand.

Marketers are interested in brand extensions as a way of reducing both the cost of new product introductions and the probability of new product failure. The number of new product introductions that are extensions of established brands has grown so much that Liesse (1993) has characterized the 1990's as the decade of brand extensions.

Despite its popularity, the brand extension strategy has drawbacks. A well-known brand does not guarantee a successful extension. Leveraging the brand's equity by extending it into new products or new categories involves both opportunities and risks. Opportunities arise from the brand's growth potential in new product categories and the possible creation of additional brand equity. Risks arise not only from possible brand extension failure but also from the possibility of diluting existing brand equity.

Aaker (1990) distinguished three types of extensions: the good, the bad, and the ugly. Good extensions not only succeed but also enhance the core brand by reinforcing its image. Bad extensions fail, but do not damage the core brand. Finally, and worst of all, ugly extensions not only fail, or enjoy only moderate success, they also have negative reciprocity effects on the core brand by weakening existing brand associations or, even worse, creating undesirable associations. Ries and Trout (1986) argued that extending the brand to new categories may be damaging simply because the brand may lose its meaning. While this position has at least some merit, it is not generally true. Choosing carefully among potential extensions provides opportunities for growth but also enhances the core brand.

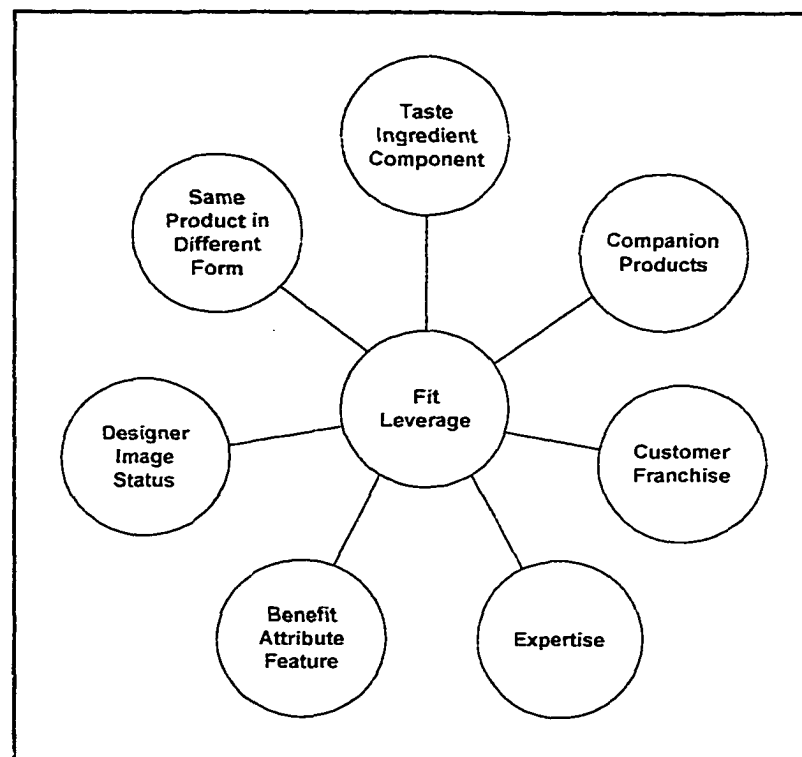
2.1.2.1. Brand Leverage

Tauber (1988) argued that a brand can be successfully extended when (1) the brand has a good fit, and (2) the brand provides some kind of leverage. Fit means that the consumer must be able to see the new product as a logical extension of the core brand. Leverage means that the consumer perceives the extension as a better alternative than competing products in the category of the extension. Based on a study involving 115 brands and 276 extensions, Tauber (1988) classified brand extension leverage into seven different types (see Figure 2.1):

1. Same products in a different form.
2. Distinctive taste/ingredient/component in the new item.

3. Companion products.
4. Same customer franchise.
5. Expertise.
6. Benefit/attribute/feature owned.
7. Designer image/status.

Figure 2.1
Dimensions of Brand Leverage



Tauber terms the first two types of leverage line extensions and the rest as brand extensions. The logic behind Tauber's classification of different types of leverage is that consumers see some form of consistency (fit) between the original brand and the new product carrying the name of that brand.

The Dunhill brand is an excellent example of a brand that enhanced its image by gradually entering new categories and capitalizing on one or more of

the above seven dimensions of leverage. Established originally as a cigarette brand, Dunhill was extended into high quality smoking accessories such as pipes and lighters. Capitalizing on the new positioning and some newly formed associations, Dunhill extended into other accessories such as belts, ties, and other leather-based products. Later, Dunhill launched fragrances and other fashion related items. Thus, Dunhill managed to enter the marketplace with a number of new products in different product categories without damaging or diluting the equity of the core brand. On the contrary, by extending into other product categories, Dunhill has improved both its strength and its value (Murphy 1990).

As the Dunhill case demonstrates, the strategy of sequential brand extensions can be very successful. In cases where the fit between the core brand and the target extension is low, the fit can be increased, by introducing a series of brand extensions. Each extension is designed to be intermediate between a current product and a target product until the brand reaches the target extension (Dawar and Anderson 1994; Keller and Aaker 1992). However, introducing a series of extensions in order to increase perceived fit between the core brand and a target extension is costly and time-consuming. While cost and other financial considerations of this strategy are important and should not be ignored, they are under the control and the assessment by the firm pursuing such a strategy.

Timing, however, is more difficult to control. If a market opportunity arises, the market will not wait for the firm to introduce a series of sequential brand

extensions in order to increase the fit between the core brand and the target extension. Thus, choosing the sequential brand extension strategy as a way to increase fit could cost the firm a market opportunity. A viable alternative strategy, one that can speed up the introduction of new products by overcoming problems of fit, is cobranding.

2.2. COBRANDING STRATEGIES

There are a number of cobranding strategies including ingredient branding, composite brand extension, brand alliance, advertising alliance, and joint promotion. Recently, cobranding strategies and other related activities have been growing at an annual rate of 40 percent (Spethmann and Benezra 1994).

Table 2.1 presents selected examples of recent cobranding strategies by different companies. The future potential for cobranding is even brighter. J. Walter Thompson has launched a new limited company called "*Brand Dating*" to help customers manage brand alliances and other cobranding activities (*Marketing Week* 1999).

However, despite the increasing use of cobranding strategies, little research has addressed cobranding strategies, examined the factors that determine the success of such a strategy, and assessed the impact of each of the partner brands on the other.

Table 2.1
Selected Examples of Different Cobranding Strategies

Brand "A"	Brand "B"	Cobranded Product	Type of Leverage	Cobranding Strategy
Compaq	Intel	Computer	Component	Component Branding
Coke	Nutrasweet	Soft Drink	Ingredient	Ingredient Branding
Jeep	Orvis	Orvis Edition of Jeep	Designer Image/Status	Composite Brand Extension
Ford Explorer	Eddie Bauer	Eddie Bauer Edition of Ford Explorer	Designer Image/Status	Composite Brand Extension
IBM	Apple	Power PC	Expertise	Composite Brand Extension
Compaq	Fisher Price	Baby Computer	Customer Franchise	Composite Brand Extension
Healthy Choice	Kellogg's	Cereal	Image/Attribute	Composite Brand Extension
Pampers	Baby Fresh	Baby Wipes	Attribute (Gentle)	Composite Brand Extension
GMC Suburban	Sony	Sony Limited Edition	Benefit/Feature Owned	Composite Brand Extension
General Mills	Hershey's	Cocoa Puffs Cereal	Distinctive Taste Ingredient	Ingredient Branding
Sony	Citibank	Sony-Citibank MasterCard	Customer Franchise	Composite Brand Extension
GM	MasterCard	GM MasterCard	Customer Franchise	Composite Brand Extension
Lexus	Coach	Coach Edition of Lexus	Image/Status	Composite Brand Extension
Aunt Jemima	Quaker	Waffles	Ingredient/Expertise	Composite Brand Extension
MasterCard	Sears	Sears MasterCard	Customer Franchise	Composite Brand Extension
Pillsbury	M&M's	Deluxe Bar Mix	Ingredient	Ingredient Branding
Baruch	Mount Sinai	Joint Program in Health Care Mgt.	Expertise	Composite Brand Extension
Kellogg's	Tropicana	Co-Advertising, Co-Promotion	Companion Products	Advertising Alliance
Tide	Oshkosh	Co-advertising	Attribute (Clean)	Advertising Alliance

2.2.1. Cobranding

Cobranding is defined as the use of two or more established brands to name a new product. Suppose that Fisher Price were to decide to extend its name to the marketing of a baby computer. Although Fisher Price manufactures high quality products for babies and young children and has an excellent reputation among potential customers, the technical competency for making high quality toys and other products for children is not transferable to making computers. In essence, Fisher Price would enter the baby computer market with no credible reputation for making any kind of computer. While the quality reputation of the core brand, Fisher Price, would probably remain intact, the positive evaluation and success of the proposed extension by potential customers is questionable.

To overcome the problem of fit between its core products and the target extension, Fisher Price might choose to introduce the baby computer as a cobranding extension in cooperation with a well-known computer brand, for example, Apple. A "Fisher Price Baby Computer by Apple" would probably gain immediate recognition and high levels of awareness among potential customers. In addition, the reputation for quality and other associations about Fisher Price and Apple, as well as the technological fit between them, would present to the customers a credible and high quality alternative. The potential for such a strategy can be seen by comparing the benefits of a cobranding extension to those of separate extensions, offered by each of the two constituent brands.

First, cobranding means easy access to distribution. Fisher Price could capitalize on its relationship with toy distributors. Thus, distributor resistance to adding a new product would be minimized. Second, cobranding would increase the probability of a positive evaluation because of the fit between the core brands and the extension. By following such a strategy, both Fisher Price and Apple could enter immediately into a relatively new, but growing, segment of their core markets. Fisher Price's lack of credentials and technical skills to produce a computer would no longer be a limitation. Its partner, Apple, has an excellent reputation in computer design and production.

Moreover, Apple not only could enter a new market with easy access to distribution but also would have a chance to create a base for potential future sales for its core products. Familiarity with the Apple brand would increase. Today's users of "baby computers" would be tomorrow's computer users. Apple might become their first choice when it comes to computer purchase and would be included in their primary consideration set. As demonstrated by Hauser (1978), the inclusion of the brand in the consideration set is an important determinant of brand choice. In addition, the presence of the brand in the consideration set, and the size of the consideration set can affect choice without altering brand evaluations (Nedungadi 1990). Finally, from a signaling point of view (Wernerfelt 1988), a cobranding extension may provide greater assurance about product quality than a single brand extension. The presence of a second brand name on a product signals to potential buyers that another firm is willing to place its reputation on the line. The Fisher Price-Apple Baby Computer is only a

hypothetical example. It was used to demonstrate that cobranding is an alternative viable strategy for introducing new products. The proposed extension probably would be a success not only because the fit among the two core brands and the extension is relatively high, but also because the consumer would perceive the extension as a better alternative than other competing products in the category.

Marketers believe that cobranding enhances performance by signaling product quality, leading to higher product evaluations, market share, and prices (McCarthy and Norris 1999). However, cobranding can affect negatively the two constituent brands involved in such a strategy. One has only to consider the problems experienced by Coca-Cola and Pepsi when it was reported that Aspartame was linked to cancer (Hileman 1996) or the problems encountered by major computer manufacturers when it was discovered that the Intel processor used by them was defective (Fisher 1994).

Recent developments indicate that there will be a significant increase in cobranding activities in the near future (Stewart 1995). According to Spethmann and Benezra (1994) cobranding related strategies are growing at an annual rate of 40 percent. Shocker, Srivastava, and Ruekert (1994) suggest that the cobranding phenomenon needs, and deserves, more attention from both practitioners and academic researchers.

While cobranding has recently received some attention (Hillyer and Tikoo 1995; Levin, Davis, and Levin 1996; Park, Jun, and Shocker 1996; Simonin and

Ruth 1998; Rao, Qu and Ruekert 1999; Rao and Ruekert 1994), a conceptual model for evaluating cobranding strategies and cobranded products has not been developed yet.

2.2.2. Cobranding Research

Most empirical research that has examined cobranding has focused on the impact of using branded ingredients or components in another brand's product (e.g., Levin et al.1996; Simonin and Ruth 1998). As suggested by recent developments (Samu, Krishnan, and Smith 1999), cobranding is more pervasive than, and goes beyond the use of, branded ingredients or components. The contribution of an established brand to the new product may be based on ingredients or components, but potentially a greater contribution may be the image, expertise, status, companion products, customer franchise, or any other customer perceived benefit (Tauber 1988).

Currently, there is no a conceptual framework of cobranding that captures the totality of Tauber's (1988) conceptualization. While the lack of a conceptual framework for studying cobranding offers individual researchers the freedom to study cobranding phenomena from different perspectives, the position taken in this study is that the lack of conceptual framework hinders cobranding research.

A conceptual framework will provide guidelines for studying cobranding phenomena and will offer researchers the opportunity to highlight similarities and differences among the different types of cobranding strategies, suggesting further research.

2.2.2.1. Ingredient or Component Branding

Ingredient or component branding strategy is the use of a branded ingredient or component on a product introduced by a brand (Norris 1992, 1993). A widely cited example of component branding strategy is the promotion of personal computers through the “Intel Inside” campaign. According to Aaker (1996) the “Intel Inside” campaign has generated more than ninety thousand pages of ads in a period of eighteen months totaling more than 10 billion exposures. Norris (1992) proposed that the ingredient branding strategy results in more efficient promotions, easier access to distribution, higher quality products, and higher profit margin. However, Norris didn’t empirically test these propositions.

More recently, Levin et al. (1996) in a taste test study found that adding a well-known branded ingredient improves product evaluations of both unknown and well known host brands more than when an unknown branded ingredient was added. In another experimental study, Vaidyanathan, Aggarwal, and Brown (1999) demonstrated that adding a well-known brand to a fictitious private label brand improves quality perceptions of the cobranded product.

The findings of these studies are important but are limited because in each study at least one of the two constituent brands involved in such a strategy was fictitious. The question remains unanswered as to whether, and when, the use of a well-known branded ingredient with a familiar host brand generates better results than the ones obtained by the host brand alone. Further, the use of

fictitious brands doesn't capture possible interactions between the images of the brands involved in such a strategy and the transfer of affect associated with each of the two constituent brands to the cobranded product.

Simonin and Ruth (1998, p.30) defined brand alliances as "the short- or long-term association or combination of two or more individual brands, products and/or other distinctive proprietary assets". Drawing upon information integration and attitude accessibility theories, they empirically tested the antecedents of brand alliance, possible spillover effects, and the effects of brand familiarity. The authors used the component branding context (real brands of microprocessors were matched with real brands of automobiles) and found that spillover effects are moderated by the familiarity and perceptions of each of the two constituent brands. In addition, Simonin and Ruth documented the importance of the attitudes toward each of the brands in evaluating cobranded products.

The Simonin and Ruth (1998) study was an important step forward in studying cobranding. However, their model did not account for the simultaneous impact of each of the constituent brands and its characteristics in evaluating the cobranded product, as suggested by the conceptual combination literature (Hampton 1987; Osherson and Smith 1981,1982). Since cobranding is the result of combining two brands to name a product, when evaluating that product, one has to consider the overall fit between the brand pair and the product.

2.2.2.2. Composite Brand Extensions

Park et al. (1996) incorporated elements of the conceptual combination literature into their research. In an experimental study, the authors evaluated a composite brand extension by using two real brands to name a new product (Slim-Fast chocolate mix by Godiva). They found that the evaluation of the composite extension depends on the favorability of the constituent brands and, more importantly, on the degree of complementarity between them. They also found that the positions (order) of the constituent brand names of a composite brand name is important in the formation of an attribute profile of the composite extension.

The results of the Park et al. (1996) study have promising implications for evaluating composite brand extension strategies. However, a number of limitations require discussion. First, Park and his coauthors limited the investigation to a single product category, thus limiting the generalizability of the results. Second, the authors defined complementarity in terms of whether attributes of the constituent brands had compensating relationships. Thus, the stimuli they used fits well with the ingredient branding strategy. However, leverage and complementarity may be based on an overall image (Eddie Bauer Edition of Ford Explorer), status (Rolex watch by Tiffany), customer franchise (American Airlines Visa), expertise-risk reduction (IBM-Apple Power PC), or usage situation (Nike-Coke sports drink) (See also Table 2.1). Finally, although Park et al. (1996) stated that the role of fit between each of the constituent

brands and the cobranding extension is important in evaluating the composite extension, they failed to test it empirically.

In their study, Hillyer and Tikoo (1995, p.123) defined cobranding as “the practice of double branding products, in which a product features more than one brand name”. Using the Elaboration Likelihood Model (ELM) (Petty and Cacioppo 1986) and the Heuristic-Systematic Model (HSM) (Chaiken, Liberman and Eagly 1989), Hillyer and Tikoo developed a series of hypotheses about the role of the primary and secondary brands in evaluating the cobranded product.

The Elaboration Likelihood Model (ELM) and the Heuristic-Systematic Model (HSM) that Hillyer and Tikoo (1995) utilized to develop their hypotheses are very rich models and can be useful in offering valuable insights in developing a conceptual framework for evaluating cobranding strategies. However, a limitation of their study (besides the fact that the hypotheses have not yet been empirically tested) is distinguishing between a primary and a secondary brand. Constituent brands involved in cobranding strategies may be equally important. A proposed model should treat both brands equally and at the same time be flexible enough to account for any brand asymmetry effects that consumers might perceive.

This review suggests that some important steps in studying cobranding have already been taken and that some basic questions have been answered. However, a conceptual framework that unifies research in the area is still lacking.

Since the phenomenon of cobranding is relatively new, researchers may choose an existing conceptual framework or develop a new one to guide their research. A conceptual framework will make it possible to organize existing knowledge better, unify alternative streams of research, examine similarities and differences among alternative cobranding strategies, and allow researchers to ask more interesting and complex questions.

2.3. ALTERNATIVE THEORETICAL FRAMEWORKS

A fruitful endeavor toward developing a conceptual framework is to review alternative theoretical frameworks and different streams of research that may be potentially useful in developing a conceptual model to study cobranding. The available models from the marketing literature include strategic alliances, bundling, and brand extensions. Their potential, as well as their limitations, in studying cobranding are reviewed and discussed next.

2.3.1. Cobranding as a Strategic Alliance

Rao and Ruekert (1994) treated cobranding as a strategic alliance. Drawing from the strategic alliance literature and economic perspectives, the authors developed a managerial decision template to analyze the cost and benefits of "joint branding". They discussed the implications for such decisions in different types of alliances and determined the value of each brand to the partners.

Strategic alliances have been defined as a partnership or long term relationship that permits partners to meet their goals (Cravens 1994). Cobranding is an alliance that creates a long-term relationship, permitting partners to achieve their goals; therefore, there is justification for using the strategic alliance framework to study the phenomena.

Using only the strategic alliance framework to study cobranding has an inherent limitation. Primarily, the strategic alliance framework concentrates on the supply side of the equation by considering organizational capabilities, strengths, and weaknesses and the strategic fit between allies (e.g., Shamdasani and Sheth 1995). Demand side effects are not fully considered. Strategic alliances can take place and, in fact, do take place without consumer knowledge.¹ Recently, however, there has been a growing recognition that the success of most marketing decisions depends as much on the response of competitors - supply side effects, as it does on the behavior of consumers - demand side effects (Kohli and Jaworski 1990; Slater and Narver 1995; Smith and Park 1992). In most cases of strategic alliances the consumer usually does not know, and does not have to know, that there is an alliance between the partners.

As noted by Bucklin and Sengupta (1993), who examined 98 alliances in the computer and semiconductor industries, many top executives are unwilling to

¹ An example is the alliance between Hewlett Packard and Canon, wherein Canon provides the main engine for Hewlett Packard printers.

identify their partners reportedly for strategic reasons. On the other hand, in the case of cobranding the role of the consumer is not just vital. It is indispensable. In other words, a cobranding form of strategic alliance can only be successful with consumer knowledge and involvement.

Without ignoring the potential contribution of the strategic alliance framework, the position taken in this study is that cobranding involves an exploitation of one of the most important assets of any firm - a brand name (Aaker 1991). Hence, the strategic alliances framework is inadequate. Since the value of the brands to be exploited comes mostly from one source, the consumer, (Aaker 1991; Keller 1993), cobranding should be studied from the consumer's point of view.

2.3.2. Cobranding Versus Product Bundling

As a marketing stimulus, cobranding can be compared to product bundling. Thus, examining how consumers evaluate bundling strategies may be helpful in studying cobranding ones. Product Bundling is "the practice of marketing two or more products and/or services in a single package for a special price" (Guiltinan 1987, p. 74).

Early research on product bundling drew from economic literature and presented primarily the seller's rationale of bundling with little emphasis on individual buyer behavior (e.g., Adams and Yellen 1976; Schmalensee 1982). According to the widely accepted additivity assumption (Schmalensee 1982), the

total utility of a bundle equals the sum of the individual utilities of items included in the bundle.

Goldberg, Green and Wind (1984) questioned the additivity assumption. Using hybrid conjoint analysis to evaluate a bundle, they concluded that the sum of individual utilities of items included in the bundle is not a good predictor of the overall utility of the bundle.

Applying the anchoring and adjustment model, Yadav (1994) found that people evaluate bundles by considering the relative importance of each item. Thus, the overall evaluation of the bundle is a function of the evaluation of the individual items. Based on the anchoring and adjustment model, the evaluation of a bundle can be smaller than, equal to, or greater than the sum of the evaluations of individual items. Thus, anchoring and adjustment can be used in developing a model of evaluating cobranded products where evaluation can be lower than, the same, or higher than the evaluation of the same product based only on one brand.

However, while bundling is similar to cobranding and one can borrow from the former to study the latter, one must also consider differences. The major difference between bundling and cobranding is that bundling is the combination of two (or more) products, whereas cobranding is the combination of two or more brands. In the case of product bundling, the components of a bundle can be separated and consumed at different times or by different consumers. However, since a cobrand is a combination of two or more brands, separation is

impossible. The consumption or use of one implies the consumption and use of the other.

Studies of bundling generally ignore the impact of brands on the evaluation of a bundle. However, consumer research has repeatedly demonstrated the importance of the brand in information processing, product evaluation, and decision-making (Lutz 1991; Montgomery and Wernerfelt 1992; Wernerfelt 1988). In addition, the role of a brand in evaluating brand extensions is undeniably important (Aaker and Keller 1990; Broniarczyk and Alba 1994) and one should expect this to be the case when consumers evaluate cobranded products. Bundling literature, thus, can offer some input and theoretical support in developing a framework to study cobranding. However, bundling is generally inadequate and falls short in accounting for all the aspects of the phenomenon.

2.3.3. Cobranding as a Case of Brand Extensions

In developing a model for evaluating cobranding products one has to consider (1) the components of the cobrand (i.e., constituent brands of the brand pair), (2) the product itself, and (3) the consumer that evaluates them.

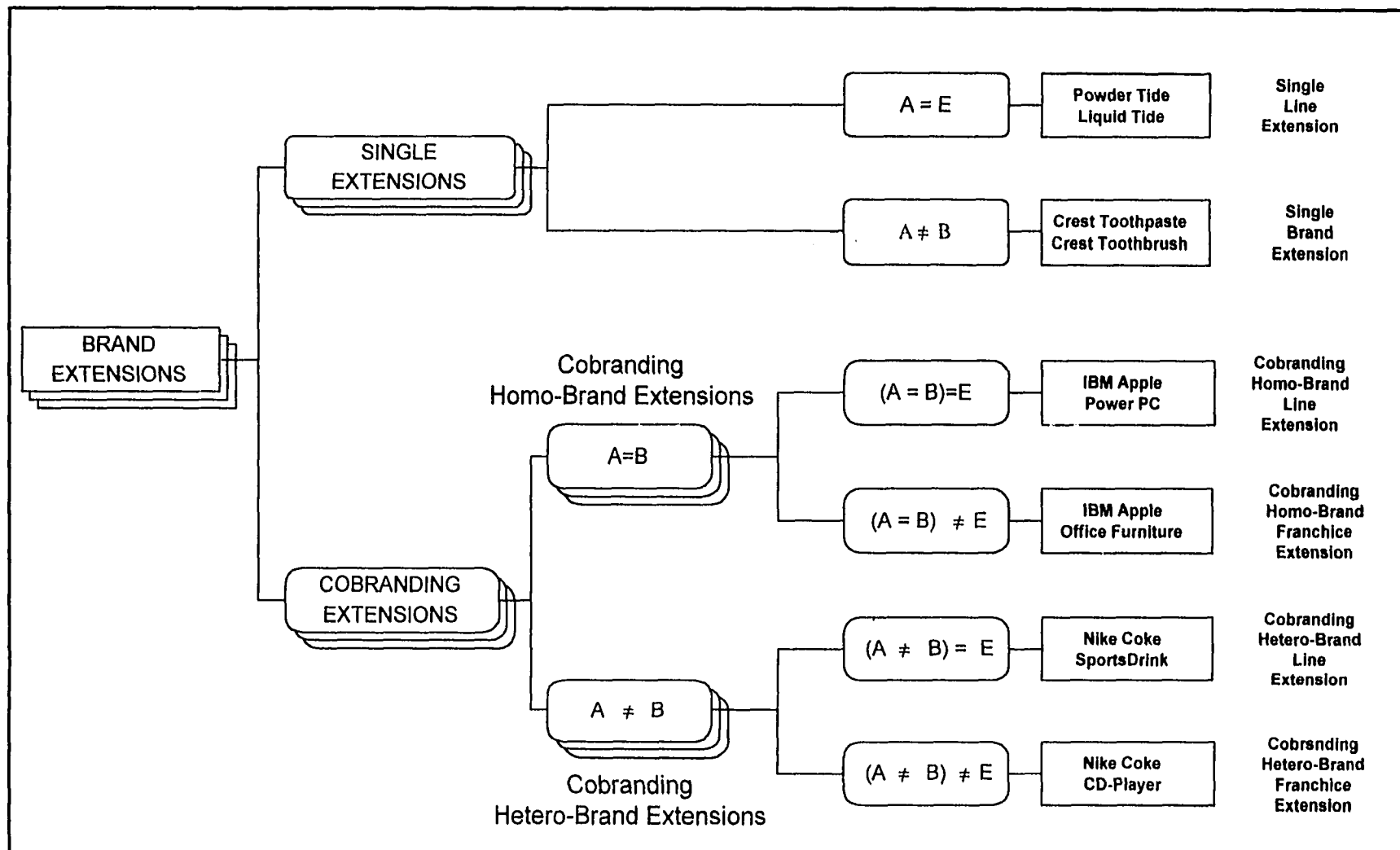
This study treats cobranding as a case of brand extensions and develops a typology of brand extensions, which incorporates cobranding. Despite all the attention and extensive research on brand extensions, no typology of brand extensions has yet been suggested. A typology, even a preliminary one, would help to organize existing knowledge better and to identify both potential gaps in the literature and other important phenomena that need further examination and

deserve more attention. Most research distinguishes between two basic strategies of brand extensions: (1) line extension (the brand is extended into the same product category) and (2) brand franchise extension (the brand is extended to a new product category) (Tauber 1981). This distinction is similar to what Kapferer (1994) refers to as associated (or continuity) extension and discontinuous extension. Different brand extension decisions have different possible outcomes (Aaker 1990). This initial classification allows for a better examination of different types of brand extensions. However, recent market developments include types of extensions not covered by the above classification. The important characteristic of these developments is that "new" products are introduced to the market by following strategies involving more than one core brands (Park et al. 1996), making the above classification of brand extensions at least incomplete.

2.3.4. Typology of Brand Extensions

Brand extension is defined as the use of an existing brand name on a new product or service, not previously associated with the brand name (Tauber 1988; Aaker and Keller 1990). For the purpose of this study, cobranding is defined as the use of two or more established brands to introduce a "new" product. If one extends the definition of brand extensions to allow more than one brand, cobranding can be classified as a case of brand extensions. Furthermore, it can be argued that cobranding is a more general case than a brand extension based only on one brand.

Figure 2.2
Typology of Brand Extensions*



*A, B: Constituent Brands, (=): Same Product Category, New Segment
 E: Brand Extension, (≠): Different Product Category, New Market

In Figure 2.2, brand extensions are classified according to (1) the number of brands involved in the extension and (2) the purpose of the extension. Extensions based on only one brand are classified as single brand extensions, whereas extensions based on more than one brand are classified as cobranding extensions.

Single brand extensions are classified either as line extensions or franchise extensions. Line extensions are used to introduce a new item (new size, new flavor) in a brand's present category [$A = E$] (for example, from Tide detergent to liquid Tide detergent). Brand franchise extensions are used to enter a new category [$A \neq E$] (for example, from Crest toothpaste to Crest toothbrush) by leveraging the consumer awareness, beliefs, attitudes, and other impressions or associations conveyed by the core brand name (Tauber 1988).

Cobranding extensions are classified either as homo-brand or hetero-brand extensions. In the case of a homo-brand extension both brands featured in the extension have products that belong to the same product category [$A = B$]. In a hetero-brand extension the brands featured in the extension do not have products that belong to the same product category [$A \neq B$]. Further, homo-brand, as well as hetero-brand, extensions are classified as cobranding line extensions when the extension belongs to a similar product category with at least one of the collaborating brands [$(A \text{ or } B) = E$] and cobranding franchise extensions when the extension belongs to entirely new product category [$(A \neq E) \text{ and } (B \neq E)$]. Thus, a "Computer by IBM and Apple" as well as a "Fisher Price Baby Computer by

"Apple" would be classified as cobranding line extensions, while "Office Furniture by IBM and Apple" and a "Soft Drink by Adidas and Sony" would be classified as cobranding franchise extensions.

2.3.5. The Importance of the Typology

While an argument can be made that the present typology of brand extensions is preliminary, incomplete, or even inadequate, the position taken here is that the typology is still beneficial. The purpose of developing the typology was not to develop a complete typology of brand extension per se but to position cobranding as a case of brand extensions.

The most important element of the typology is the distinction between single-brand and cobranding extensions. While research on single brand extension is voluminous, theory development and empirical verification of cobranding strategies is lacking. Recent trends suggest that there will be a significant increase of such strategies in the future (Shocker, Srivastava, and Ruekert 1994; Spethmann and Benezra 1994). Therefore, studying cobranding is a necessary and useful endeavor. Positioning cobranding as a case of brand extension and examining cobranding strategies from the customer's point of view will allow researchers to draw from a previously developed rich theoretical and methodological framework from the area of brand extensions.

2.4. BRAND EXTENSION RESEARCH

2.4.1. Major Findings

The rationale behind brand extension strategies is that affect associated with the brand used to name the extension is transferred to the extension (Keller 1998). Brand extensions are evaluated positively when the quality of the core brand is high and, at the same time, there is a perception of high fit between the product category implied by the core brand and the extension (Aaker and Keller 1990; Boush and Loken 1991; Consumer Behavior Seminar 1987; Park, Milberg, and Lawson 1991; Tauber 1988). Furthermore, it has been demonstrated that high quality brands can be stretched farther than average quality brands, although both have limits (Keller and Aaker 1992).

Most researchers have studied brand extensions by adopting a categorization perspective. Since a brand extension is a new stimulus, consumers should undergo the same processes as when exposed to any new stimulus. The critical process is categorization (Fiske, 1982; Fiske and Pavelchak 1986). Perceptions of a new stimulus are influenced by the congruity between the stimulus and its category schema (Hastie 1981; Sujan and Bettman 1989). That is, if the level of fit between the core brand and the extension is high and the overall attitude toward the core brand is high, then the extension will benefit because equity, affect, and other positive associations stored in memory will be transferred to the extension. On the other hand, if the attitude toward the core brand is negative the extension will be harmed.

2.4.2. Alternative Conceptualizations of Fit

As previously indicated, most researchers have relied on existing categorization metaphors to explain affect transfer from the core brand to the extension. The idea often advanced is that where there is a good fit between the extension and other products offered by the core brand, affect is transferred to the extension. However, the difficulty is that there is no standard definition of fit in the literature. The next section looks at the different definitions of fit and the limitations of those definitions.

2.4.2.1. Fit as Similarity

Some researchers have conceptualized and defined fit in terms of product feature similarity (Boush and Loken 1991; Consumer Behavior Seminar 1987). Defining fit in terms of product feature similarity restricts the type and the number of associations that consumers may infer about the brand extension. For example, Aaker and Keller (1990) demonstrate that associations such as usage situation or user's image may contribute to higher level of fit. Providing support for this point in an experimental study Park et al. (1991) found that product feature similarity does not adequately predict or explain brand extension evaluations. Furthermore, defining fit in terms of feature similarity creates difficulties with evaluating extensions of brands with multiple products. The question in such cases is which product better represents the meaning of the brand to be used as a base of comparison? For example, in the case of Sony, is

it the television set, the VCR, the CD player, the telephone, or any other product that carries the Sony name?

Notwithstanding the difficulties, the similarity-based definition of fit appears to be a good predictor in the case of line extensions when the brand is extended in the same product category (Tauber 1988).

2.4.2.2. Fit as a Set of Associations

To eliminate, or at least reduce, problems associated with the conceptualization of fit as feature similarity, a number of researchers have taken a different approach (Aaker and Keller 1990; Chakravarti, MacInnis, and Nakamoto 1990; Park et al. 1991). They conceptualized and measured fit in terms of brand associations by expanding the set of associations on which an extension may be matched from simple feature matching to other associations. Aaker and Keller (1990) conceptualized fit in terms of complementarity, substitutability, and transferability. *Complementarity* indicates the degree to which consumers view the two product classes as complements. *Substitutability* is the extent to which consumers view the two product classes as substitutes. *Transferability* is the extent to which consumers view synergies in designing and manufacturing the product.

Chakravarti, MacInnis and Nakamoto (1990) defined fit in terms of shared benefits. Their reasoning is based on the suggestion that when considering items linked by a common goal (e.g., things to eat on a diet), what determines category

judgments, is shared benefits rather than physical features (Barsalou 1982,1983).

Park et al. (1991) treated fit as a function of both product feature similarity and brand concept consistency (i.e., the ability of the brand to accommodate the product). Their position was that product feature similarity captures the fit of the functional elements of the brand whereas concept consistency captures fit of the symbolic elements of the brand.

In conclusion, defining fit as a set of associations is a better approach than defining it in terms of product feature similarity. However, this definition may be problematic because this conceptualization treats a brand as consisting of product-only associations. Extensions are evaluated in terms of their fit with existing products rather than with the meaning of the brand. The extension is compared with other products (not the brand) and is judged for fit on the basis of complementarity, substitutability, or synergies in manufacturing. This clearly emphasizes primarily product associations. However, brands are much richer concepts and their meaning may well go beyond products associated with the brand and product associations (Tauber 1988). For example, the Country Time Lemonade brand was so strongly associated with lemonade that consumers couldn't accept Country Time Apple Cider. The set of associations that consumers had for Campbell's resulted in the perception that Campbell's Spaghetti sauce would be orangy, runny, and not authentic Italian. Thus, at least in some cases, fit as a set of associations falls short of capturing the full and true

meaning of the brand. To address this problem, (Dawar and Anderson 1994) conceptualized and measured fit in terms of conceptual coherence.

2.4.2.3. Fit as Conceptual Coherence

Conceptual coherence considers categories as collections of objects, made coherent by theories (Murphy and Medin 1985). The theory-based approach to categorization assumes that people are naive scientists that evolve categorizations based on folk theories, just as scientists base their classification on theories.

The advantage of treating categories as theories is the flexibility to account for different categories without limiting the category coherence to similarity. This allows otherwise dissimilar objects to belong to the same category. This is possible because coherence of the category is based on some shared folk theory and not on shared features (Murphy and Medin 1985).

The flexibility of conceptual coherence explains not only membership in, but also the degree of membership among, ad hoc categories. In most cases, ad hoc categories violate the correlational structure present in natural categories, or categories based on shared features or similarity (Barsalou 1983, 1985). To the external observer (a person that doesn't share the folk theory), members of an ad hoc category may be nothing but a collection of dissimilar and disparate objects. For example, objects such as a pet, a photo album, and a wallet do not appear to fit together, since they don't share any common features and are not associated with any other relationship. However, all three belong to a very consistent and

cohesive category, labeled as, “things to be removed from a house during a fire” (Barsalou 1983).

Another implication of categories-as-theories is that category structures are not necessarily invariant. The most typical exemplar of a category may differ depending on context and the goal that the categorizer wants to achieve. For example, Roth and Shoben (1983) found that the most typical member of a category “beverage” was different depending on whether the context was specified as “librarians taking a break” or “truck drivers taking a break.”

To recapitulate, fit as conceptual coherence, considers categories as collections of objects made coherent by theories (Murphy and Medin 1985). This approach not only eliminates problems associated with other conceptualizations of fit, but also opens new doors for research in the area of brand extensions. First, the definition of fit as conceptual coherence takes place at a higher level of abstraction than every other definition of fit. This allows measures developed in one case to be used in other cases. Second, it offers the possibility of treating brands as cognitive categories and the products that carry the brand name as category members. This renders unnecessary the assumption made by many researchers that brands are necessarily members of product classes. In addition, this conceptualization is consistent with research that suggests that consumers organize information at the brand level (Park, Jaworski, and MacInnis 1986; Russo and Johnson 1980).

2.4.3. Brands as Categories

Brands can be conceptualized as cognitive categories made coherent by theories supplied by consumers (Murphy and Medin 1985; Park et al. 1991). If one conceptualizes brands as cognitive categories, then brand extensions can be considered as an attempt to expand the boundaries of the brand category. Brand extensions can be evaluated on the basis of coherence criteria provided by theories associated with the brand (Dawar and Anderson 1994). These theories provide coherence to the brand category by considering the logic of a collection of different products under the brand and by the sense it makes for the brand to introduce a new product under its name. For example, the coherence of the set of disparate products under the brand name "BIC" is evaluated by using criteria such as: "BIC is disposable", "BIC is simple", "BIC is convenient", "BIC saved the day", etc. Thus, using conceptual coherence a potential extension by BIC (e.g., an instant camera) would be evaluated on the basis of the above criteria, rather than on the basis of shared features (similarity approach) or the degree to which the instant camera is substitute or complementary (brand associations) to another BIC product.

Conceptualizing brands as categories is also consistent with Gardner and Levy (1955), and Park et al. (1986). The brand name operates as a mental category and as such carries the meaning and affect associated with the category. The affect associated with the brand may be the result of one product or the result of multiple products under the family brand name (Boush and Loken 1991).

2.5. COBRANDING BRAND EXTENSIONS AND CONCEPTUAL COMBINATIONS

In Section 2.3.4 cobranding was positioned as a case of brand extensions. Based on this position, one can attempt to develop a conceptual framework for evaluating cobranding extensions without considering a major difference between single extensions and cobranding ones. Single brand extensions are based on one brand, whereas cobranding extensions are based on two or more brands. In order to use the brand extension research to evaluate cobranding extensions, it is necessary to assess the level of fit between the cobrand and the cobranding extension. That is, the level of overall fit between the cobrand and the extension, and not the fit between the extension and the two constituent brands separately. In the case of single brand extensions, fit can be conceptualized as the degree of membership of the extension in the category implied by the core brand. In the case of cobranding, the problem is to determine the degree of membership of the extension in the category implied by the cobrand (brand pair). However, the brand extension literature falls short and does not offer any suggestions on how to model and measure overall fit.

The conceptual combination literature can be used to overcome the problem of modeling and measuring overall fit. In this instance, cobranding is treated not only as a case of brand extensions but also as a novel conceptual combination.

2.5.1. Cobranding as a Novel Conceptual Combination

A conceptual combination is the result of combining two (or more) concepts. The process of conceptual combination involves assessing two or more concepts to determine how they fit together to form a new concept (Wisniewski 1991, 1996).

Cobranding involves such a combination, the combination of the two constituent brands used to name the cobranding extension. Given that the combined category is the cobrand, the conceptual combinations literature provides a framework for determining the degree of membership (overall fit) between the cobrand and the product involved in the cobranding extension. Understanding how two concepts are combined to form a new concept, and what determines the degree of membership of an object in the newly formed category implied by the conceptual combination, is the cornerstone of modeling evaluations of cobranded products.

2.5.2. From the Degree of Membership to the Overall Fit

While there is no disagreement among researchers about defining conceptual combinations there is no agreement of how to determine the degree of membership of a new object in the newly formed category implied by the conceptual combination. However, understanding the process of measuring degree of membership of a new object in the conceptual combination is critical in measuring the overall fit between the cobrand and the cobranding extension.

An early attempt to solve the problem of determining the degree of membership and identifying exemplar members of the combined category used the Fuzzy Set Theory proposed by Zadeh (1965). According to Fuzzy Set Theory, the degree to which an exemplar belongs to a combined category (the conceptual combination) is a function of the degree to which it belongs to each of the constituent categories (concepts). For example, the degree to which something is a red apple is a function of its membership in the category "apples" and its membership in the category "things which are red" (Shoben 1991). To exclude things that are apples but not red and things that are red but not apples, Zadeh proposed the so-called minimum rule. That is, membership in the combined category is the lesser of the two constituent values. In other words, according to the minimum rule an object belongs in a conceptual combination if, and only if, it is a member of the two constituent concepts.

Zadeh's position is consistent with the Prototype Theory of Concepts proposed by Rosch (1975). According to prototype theory, the prototype for a category is a set of attributes that define the central tendency of members of the class, based on the family resemblance of members (Mervis and Rosch 1981; Rosch and Mervis 1975). Members of the category may vary in their similarity to the prototype depending on the number of matching attributes. To capture the notion that some members of a category are more representative than others, Rosch (1975) introduced the variable of typicality, a measure of the degree of membership of an object to the category.

However, Osherson and Smith (1981) questioned the consistency between Fuzzy Logic and the Prototype Theory. The authors demonstrated that there is no general function that will map the degree to which any object belongs in each of two concepts or the degree to which it belongs to their conjunction. As Osherson and Smith noted, while the Fuzzy Set Theory approach seems reasonable on the surface, there are at least some inherent problems associated with it. Specifically, one can name exemplars that would be better members of the combined category (more typical) than of either of the constituent categories. For example, a “guppy” or a “goldfish” are excellent examples of the category “pet fish”. However, a guppy and goldfish are relatively poor examples of the category fish and poor examples of the category pet. According to the Fuzzy Set Theory’s minimum rule such a result should not exist (Shoben 1991). Clearly, in this example the minimum rule is broken. Applying the second rule of Fuzzy Theory the result is even worse. The multiplicative rule predicts that an object’s typicality on a conjunction must always be lower than its membership in either of the constituent concepts (Hampton 1987).

To solve problems associated with the Fuzzy Set Theory, Osherson and Smith (1982) proposed that in determining the typicality of an object in a conjunction it is insufficient to consider only the typicality of an object with each of the constituent concepts. One must also consider a third parameter involved in the function. That is, the positive or negative contingency between the two constituent concepts. After reviewing relevant literature Hampton (1987, p.56) maintained the view that “... *it should be possible to find a function or set of*

functions that would predict how well an item fits a conjunction A&B, given the fit of the item in the constituent concepts A and B separately, and given access to other extensional information."² This point is important because, based on the view expressed by Hampton, a model can be developed to determine the degree of membership (i.e., the level of overall fit) between a conceptual combination and an object (i.e., the cobrand and the cobranding extension),

2.6. SUMMARY

This chapter reviewed relevant literature with the aim of developing a framework for the study. Alternative theoretical frameworks potentially useful in studying cobranding were reviewed. The chapter concludes with positioning cobranding as brand extension on one hand and as novel conceptual combination on the other. Integrating elements from both research streams provides a basis for a useful conceptual framework for studying cobranding. Based on this framework, the next chapter presents a model for evaluating cobranding extensions and offers a set of specific hypotheses.

² Emphasis added.

CHAPTER 3

HYPOTHESIS DEVELOPMENT

Using the conceptual framework developed in Chapter 2, this chapter proposes a model for evaluating cobranding extensions. Based on the proposed model a set of testable hypotheses is derived.

3.1. CONCEPTUAL FRAMEWORK

Cobranding extensions involve at least two brands and a product. Consumers evaluate cobranding extensions using a variety of criteria based on their knowledge and perceptions about the brands used to name the cobranding extension. Many cobranding extensions are the result of combining a primary and a secondary brand. In such cases, the role of each brand in evaluating the extension is expected to be different. However, no such distinction is made in the proposed model, which treats brands equally. At the same time, the model is flexible enough to account for any brand asymmetry effects that consumers might perceive.

Drawing from the brand extension research and integrating with it elements from the conceptual combination literature, the following model is hypothesized for evaluating cobranding extensions. Consumers evaluate cobranding extensions by:

1. Assessing the level of overall fit between the cobrand and the extension (Fiske 1982; Fiske and Pavelchak 1986), and
2. Considering the quality of each of the constituent brands, (QualA) and (QualB) (Aaker and Keller 1990).

If overall fit is conceptualized as the degree of membership then overall fit is a function of:

3. Brand fit, i.e., the fit between the brands involved in the extension, and
4. The level of fit between each of the two constituent brands and the extension (FitA and FitB) (Hampton 1987).

The definitions derived from the conceptual framework on which the proposed model is based are presented in Table 3.1. Definitions of the latent constructs used in developing the model are presented in Table 3.2. The proposed model itself is presented in Figure 3.1.

Table 3.1
Conceptual Definitions

Concept	Definition
Brand Extension	The use of one or more established brands to name a new product or service (Tauber 1988).
Conceptual Combination	The result of combining two or more simple concepts (Wisniewski 1991, 1996).
Cobrand "A&B"	A newly formed conceptual combination as the result of combining two brands A and B.
Cobranding	The use of two or more established brands to name a new product or service.
Cobranding Extension	The new product or service introduced jointly by two brands and carries the name of the cobrand.

Table 3.2
Definitions of Latent Constructs

Construct	Definition
Perceived Quality (QualA and QualB)	Customer perceptions of the overall quality, or superiority of a branded product or service relative to other alternatives and with respect to its intended purpose (Keller 1998).
Fit between each of the constituent brands and the cobranding extension (FitA and FitB)	The coherence between each of the constituent brands and the product mentioned in the cobranding extension (Lakoff 1987; Medin and Wattenmaker 1987; Dawar and Anderson 1994).
Brand Fit	The compatibility (consistency) between the images of the brands involved in the cobranding extension irrespective of the cobranded product (Keller 1993).
Overall Fit	The conceptual coherence between the cobrand and the cobranding extension. The degree to which the cobranding extension is considered member of the cobrand category (Lakoff 1987; Dawar and Anderson 1994).

3.1.1. The Simonin and Ruth Model

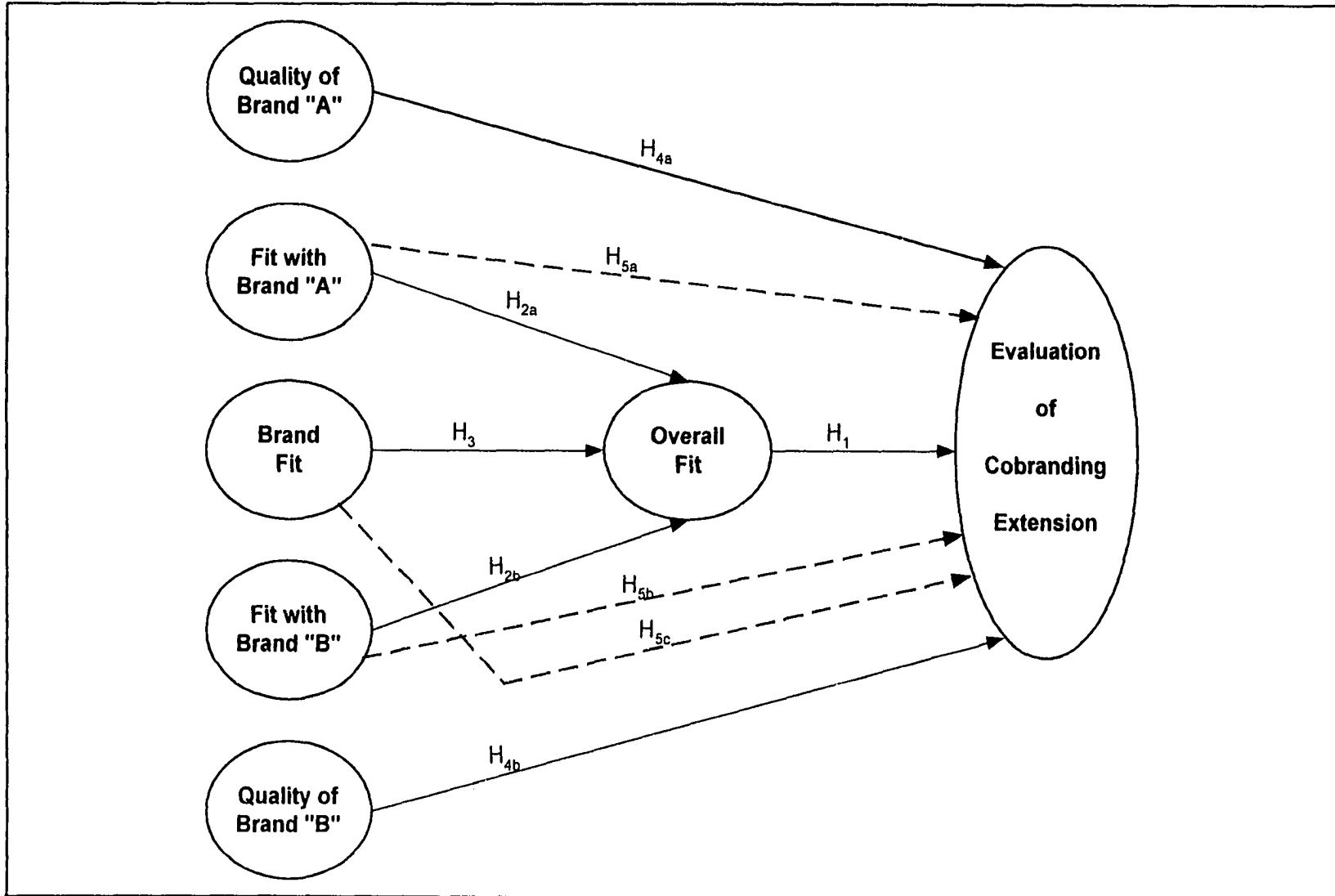
It should be noted that the model proposed in this study resembles, to some extent, the model of Simonin and Ruth (1998). Simonin and Ruth examined the evaluation of brand alliances in order to address possible spillover effects. They positioned their research in light of the literature on bundling and brand extensions. Simonin and Ruth modeled cobranding evaluations as a direct function of (1) consumer attitudes toward each brand, (2) product fit, and (3) brand fit. As noted by Simonin and Ruth (1998, p.33): "In contrast to brand

extensions, in brand alliances product fit refers uniquely to the relatedness of the product categories referred to or implied by the brand alliance, (e.g., ice cream with chocolate fudge), irrespective of the brands.”

Simonin and Ruth (1998) state that the attitudes toward the brand alliance will be enhanced when a relatively high degree of product fit exists. However, this definition of fit does not capture the relationship between the cobranded product and the brand-pair involved in the extension. In addition, Simonin and Ruth hypothesized that product fit and brand fit are directly related to the evaluation of the cobranding extension. With this assumption, their model may not capture the effects generated by the presence of the newly formed cobrand.

In contrast to the Simonin and Ruth (1998) model, the model proposed in this study incorporates the notion of fit as used in the brand extension research. In addition, the effects of product fit and brand fit are modeled differently in this study than in the model proposed by Simonin and Ruth. A major difference is that in the present study cobranding is treated as a conceptual combination. Thus, drawing from the conceptual combination literature, a new variable, overall fit is used in the model. Overall fit is modeled as a function of the fit between each of the constituent brands and the cobranding extension (FitA and FitB) and brand fit. Overall fit, in turn, influences the evaluation of the cobranding extension. Thus, whereas in the model of Simonin and Ruth (1998) one expects direct effects of product fit and brand fit on the evaluation of the cobranding extension, in the proposed model no such effects are expected.

Figure 3.1
Conceptual Model for Evaluating Cobranding Extensions



3.2. MODELING COBRANDING EXTENSIONS

Figure 3.1 presents the proposed model. In the figure, each arrow represents a hypothesized relationship. For clarity and completeness, the theoretical background and support for each hypothesis are discussed separately. The validity of the model was tested by assessing all the hypothesized relationships simultaneously.

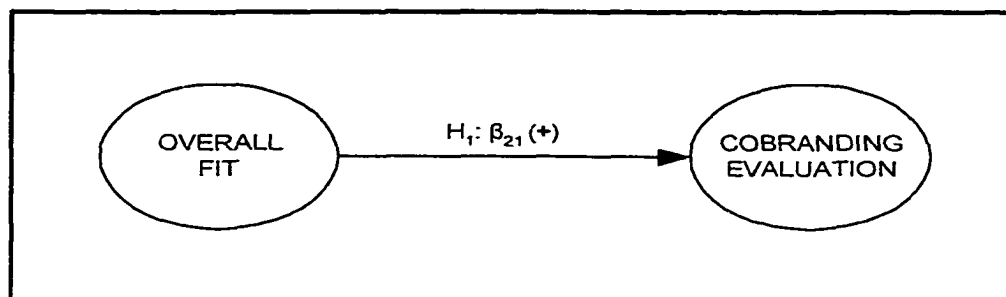
3.2.1. Overall Fit: Fit Between the Cobrand and the Extension

In the case of single brand extensions, consumers first assess the level of fit between the original brand and the extension. If the fit is high, affect associated with the brand is transferred to the extension (Aaker and Keller 1990; Consumer Behavior Seminar 1987; Park et al. 1991). Thus, in the case of extensions based on one brand, the higher the level of fit between the core brand and the extension, the higher the evaluation of the extension.

Applying this reasoning to the case of cobranding, one infers that the higher the level of overall fit between the cobrand and the extension, the higher the evaluation of the extension (see Figure 3.2).

However, this reasoning does not exclude any effects of the individual fits (FitA and FitB) in evaluating the extension. The position taken in this study is that the major effect of each of the individual fits in evaluating cobranding extensions is an indirect one.

Figure 3.2
Effect of Overall Fit



Cobranding extensions involve at least two brands. Cobrands should be viewed as conceptual combinations. Consumers simultaneously consider the fit between the extension and each of the constituent brands and assess the overall fit, that is, the fit between the cobrand “A and B” and the cobranding extension. Thus, the assessment of each of the individual fits, without simultaneous consideration of the other, is insufficient to determine the overall fit between the cobrand and the extension (Hampton 1987; Osherson and Smith 1981). If consumers perceive that the cobranding extension (instance) fits the category (schema) implied by the cobrand, the extension will receive the affect linked to that category (Fiske 1982). In other words, to the extent that the extension is considered a good member of the cobrand category, affect associated with that category is transferred to the extension.

Brand extension research has found that the higher the fit between the brand and the extension, the higher the evaluation of the extension (Aaker and Keller 1990; Park et al. 1991). When fit is perceived to be low, favorable attitudes about the brand might not be transferred to the extension. Thus, the higher the overall fit between the cobrand and the cobranding extension, the more the affect

associated with the cobrand is transferred to the extension and the cobranding extension is rated favorably. Based on this reasoning, it is hypothesized that:

H₁: The higher the level of overall fit between the cobrand and the cobranding extension, the higher the evaluation of the extension.

3.2.2. Antecedents of Overall Fit

To overcome the problem of determining overall fit, the study borrows from the conceptual combination literature. Osherson and Smith (1982) demonstrated that the typicality of the conjunction of the two concepts is not just a simple function of the two constituent typicalities. Osherson and Smith argued that a third parameter is involved in the function, i.e., the positive or negative contingency between the two constituent concepts.

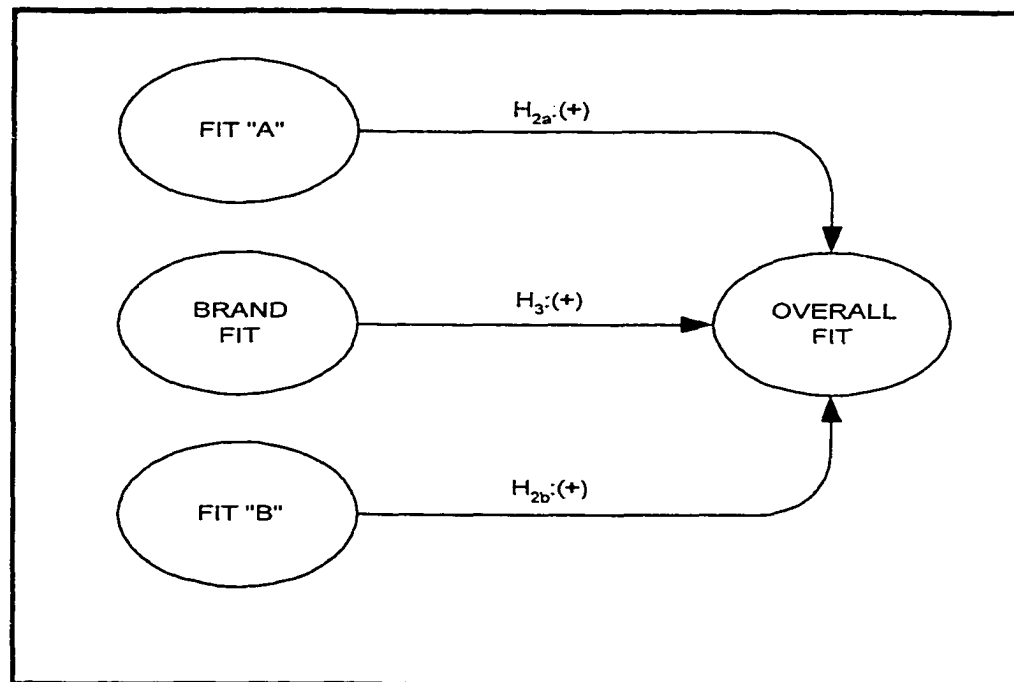
Hampton (1987) takes the position that the extent to which an item fits a conceptual combination is a function of the degree to which the item fits each of the combining concepts separately and the relationship between the combined concepts.

A cobrand is the result of combining two concepts, the two brands involved in the cobranding extension, brand "A" and brand "B". Considering the statements made by Osherson and Smith (1982) and Hampton (1987) and adapting them to the case of cobranding extensions, where two brands are combined to introduce a cobranding extension, it follows that the degree of

overall fit between the cobrand "A and B" and the cobranding extension is a function of:

- (1) the fit between brand "A" and the cobranding extension (Fit A),
- (2) the fit between brand "B" and the cobranding extension (Fit B), and
- (3) the relationship between brand "A" and brand "B", (Brand Fit) (See Figure 3.3).

Figure 3.3
Antecedents of Overall Fit



3.2.2.1. Effects of Individual Fits FitA and FitB on Overall Fit

Given the above reasoning, it is hypothesized that:

H_{2a}: The higher the level of fit (FitA) between brand “A” and the extension, the higher the level of the overall fit.

H_{2b}: The higher the level of fit (FitB) between brand “B” and the extension, the higher the level of the overall fit.

3.2.2.2. Effect of Brand Fit on Overall Fit

The relationship between the two constituent brands “A” and “B” requires further discussion. The effect of that relationship on the overall fit is captured in the model by brand fit (the degree to which the image of brand “A” is compatible with the image of brand “B”). Brand image is defined as the consumer’s perceptions about the brand and is reflected in the brand associations held in the consumer’s memory (Keller 1993). If the images of the two constituent brands are compatible, the coherence of the cobrand is increased. On the other hand, if the images of the two brands are incompatible and the cobrand makes no sense, then no matter what the level of (individual) fit between each of the constituent brand and the extension, the coherence of the cobrand will be weak, resulting in low overall fit. Thus, the higher the brand fit, the higher the overall fit.

The role of brand fit in determining the overall fit between the cobrand “A and B” and the cobranding extension is also supported by research done in the

area of cognitive consistency (Heider 1958; Osgood and Tannenbaum 1955). If consumers have a positive image of one of the brands involved in the extension and negative image of the other, that mismatch can be expected to have a negative effect on the perceived level of overall fit.

This argument was reinforced by preliminary results obtained from qualitative research conducted as part of this study. In small group discussions, participants were presented with hypothetical cobranding extensions and were asked to discuss the process and the factors they consider in evaluating them. When participants were asked to evaluate different cobranded products, to be introduced jointly by Coke and Pepsi, their reaction was strong and spontaneous. Comments such as "it doesn't make sense", "it's not logical" were their first reaction. When participants were reminded that both Coke and Pepsi are high quality brands with excellent reputations, their reaction was even stronger. Their comments included "Exactly! ... what has Coke got to gain from Pepsi? ...these two guys can't live together. no, no...it doesn't make any sense".

Aaker and Keller (1990) found that an easily accomplished extension is less likely to be accepted. Their explanation was that consumers might view the introduction of an easily done extension as an effort to capitalize on the reputation of the core brand merely to command higher-than-justified prices. Similarly, if consumers perceived that the two brands involved in a cobranding extension are not compatible, they may interpret cobranding as an exploitation attempt. When the proposed cobrand is seen as incongruent, consumers may activate a causal or attributional search (Folkes 1988). Should the consumers

feel that the brands involved in the extension are unfairly attempting to capitalize on reputation or to limit competition and command higher prices, the consumers will experience reactance (Brehm 1966).

In conclusion, a cobranding extension involves two or more brands. Success or failure of the extension depends on the images of those brands. When the images of the two brands are inconsistent, the coherence of the cobrand will be questionable and the meaning of the cobrand will be unclear to consumers. Then, consumers evaluating a proposed cobranding extension will not have a clear basis for comparison, and the perceived fit between the cobrand and the proposed cobranding extension will be low. Thus, incompatible images lead to low brand fit. In turn, low brand fit leads to low perceived overall fit between the cobrand and the extension. On the other hand, highly compatible images result in high brand fit, and high brand fit leads to high overall fit. Based on the above reasoning it is hypothesized that:

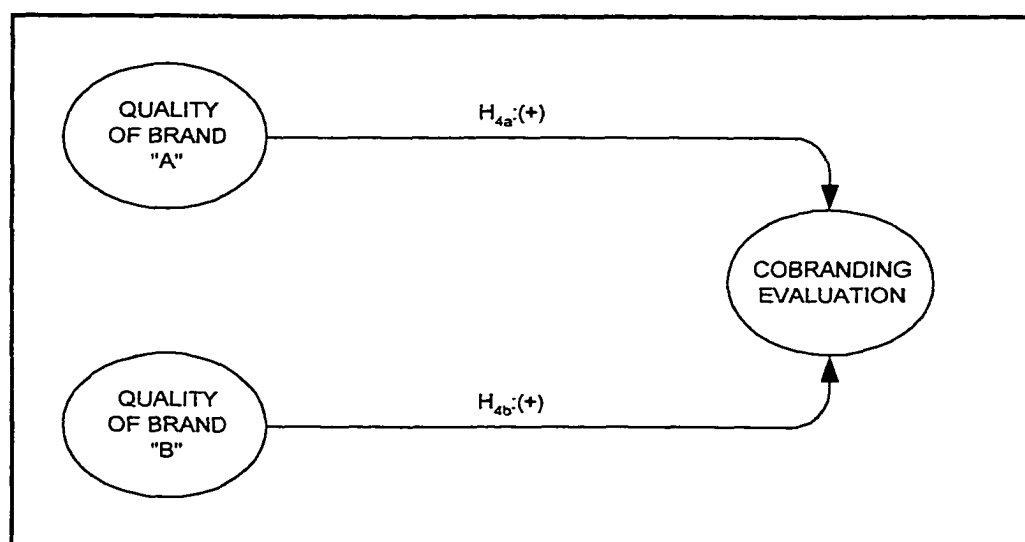
H₃: The higher the level of brand fit between the two constituent brands, the higher the level of the overall fit.

3.2.3. Perceived Quality of Each of the Constituent Brands

Research done in the area of single brand extensions provides empirical evidence that positive association and favorable quality perceptions are transferred to the extension (Consumer Behavior Seminar 1987; Aaker and

Keller 1990). In addition, Smith and Park (1992) argue that high quality, strong brands benefit extensions more than do low quality, weak brands. After analyzing data collected from both product/brand managers and consumers, Smith and Park found a positive relationship between the quality of the core brand and the success of the brand extension. For that reason, it is logical to assume that cobranding extensions based on relatively high quality brands are more likely to be evaluated favorably, than cobranding extensions based on low quality brands.

Figure 3.4
Effects of Perceived Quality



Thus, if consumers have an overall favorable attitude toward a constituent brand, that attitude will influence positively the evaluation of cobranding extension (see Figure 3.4).

A similar positive effect also has been demonstrated when consumers evaluated multi-product bundles. Although cobranding is conceptually different

from bundling, Gaeth et al. (1990) found that evaluation of multi-product bundles is more favorable when products included in the bundle are favorably evaluated. Yadav (1994) found that people evaluate bundles by considering the relative importance of each item. The overall evaluation of the bundle is a weighted average of the evaluation of the individual items.

Brands facilitate consumer decision-making by providing information that serves as a vehicle for reducing perceived risk (Montgomery and Wernerfelt 1992; Wernerfelt 1988). In turn, perceived risk is a function of the consumer's confidence about the quality of the brand. The higher the perceived quality of the brand, the higher the consumer confidence, and the lower the perceived risk associated with that brand. Thus, the higher the quality of the brand, the higher the evaluation of extensions carrying the brand's name.

Finally, a number of studies have examined how brand names operate as a cue to product quality (Dodds, Monroe, and Grewal 1991; Rao and Monroe 1989; Richardson, Dick, and Jain 1994). When exposed to such a cue, consumers activate knowledge stored in memory (Anderson 1981). The information retrieved from memory and the attitudes toward each of the two brands influence information processing and evaluation of the cobranded product. The direction of evaluation is implied by the magnitude of these attitudes. Quality perceptions of the cobranding extension are a positive function of the overall attitude toward each of the two constituent brands.

Following Aaker and Keller (1990) who conceptualized attitude in terms of overall quality, it is hypothesized that:

H_{4a}: The higher the quality of brand “A”, the higher the evaluation of the extension.

H_{4b}: The higher the quality of brand “B”, the higher the evaluation of the extension.

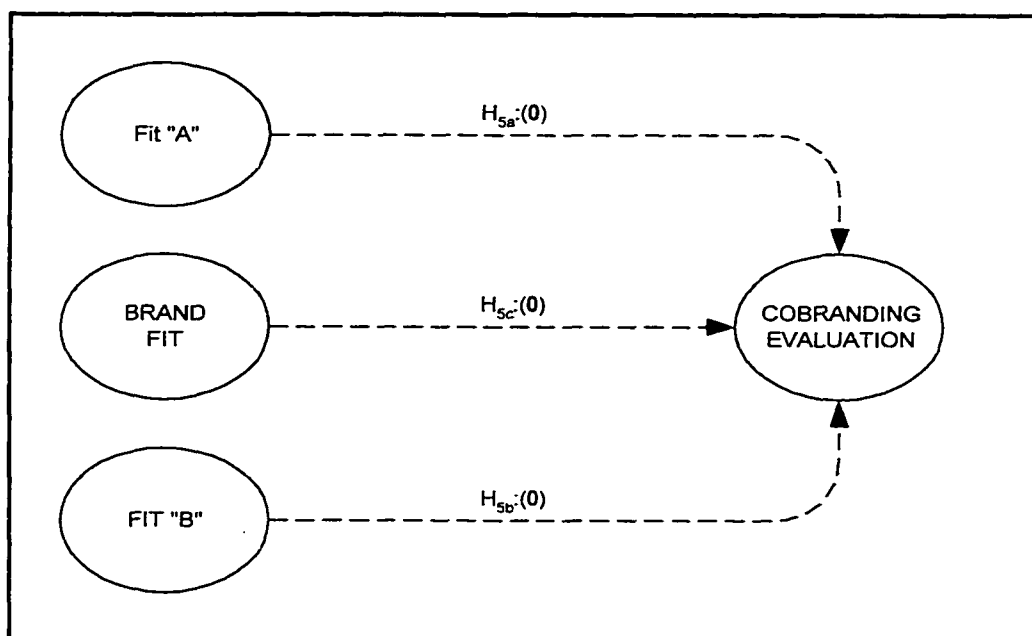
3.2.4. Direct Effects of Each of the Two Individual Fits

Brand extension research has demonstrated that fit, between the core brand and the extension, has a positive effect on the evaluation of the extension (Aaker and Keller 1990; Consumer Behavior Seminar, 1987). In the case of cobranding, where two or more brands are combined to introduce a cobranded product, the levels of each of the two individual fits influence the evaluation of the extension indirectly through the overall fit. These are indirect effects and were discussed previously in Section 3.2.2. Individual fits, together with brand fit, influence the overall fit. In turn, the overall fit has a positive effect on the evaluation of the extension.

An interesting question is whether or not are there any direct effects. That is, does the level of fit between each of the constituent brands and the extension directly influence the evaluation of that extension? Consumers evaluate cobranded extensions after assessing the overall fit between the cobrand and the extension (Hampton 1987). If this is indeed the case, then the level of each of the

individual fits is not expected to have a direct effect on the evaluation of the extension (see Figure 3.5).

Figure 3.5
Direct Effects of FitA, FitB and Brand Fit



Osherson and Smith (1981) support this position. They hold that it should be possible to identify items that would be more typical members of the conjunction than of the constituent categories. In such cases, the item's degree of membership in the conceptual combination is higher than the degree of the item's membership in either of the constituent concepts. Then, affect associated with the brands involved in the extension is transferred through the overall fit and not through the individual fits of each of the two constituent brands with the cobranding extension. Based on that reasoning it is hypothesized that:

H_{5a}: The level of fit between brand “A” and the extension (FitA) has no direct effect in evaluating the extension.

H_{5b}: The level of fit between brand “B” and the extension (FitB) has no direct effect in evaluating the extension.

The rationale used to support H_{5a} and H_{5b} also can be used to examine the direct relationship between brand fit and the evaluation of the cobranding extension. Thus, it is hypothesized that:

H_{5c}: The level of Brand Fit has no direct effect in evaluating the extension.

3.3. SUMMARY

This chapter examined the factors influencing the evaluation of cobranding extensions. The chapter draws on the brand extension and conceptual combination literatures to develop a conceptual model for evaluating cobranding extensions. More specifically, this chapter developed a set of hypotheses concerning the evaluation of cobranding extensions based on the overall fit, the fit of the extension with each of the constituent brands (FitA and FitB), brand fit, and the quality of the brands involved in the cobranding extension. Definitions of the latent constructs are summarized in Tables 3.2. The proposed model and the depicted hypotheses are presented in the Figure 3.6. A summary of the hypotheses is presented in Table 3.3. The methodology used to assess the statistical goodness of fit of the model and to test the hypotheses is the subject of the next chapter.

Figure 3.6
Proposed Model and Hypotheses

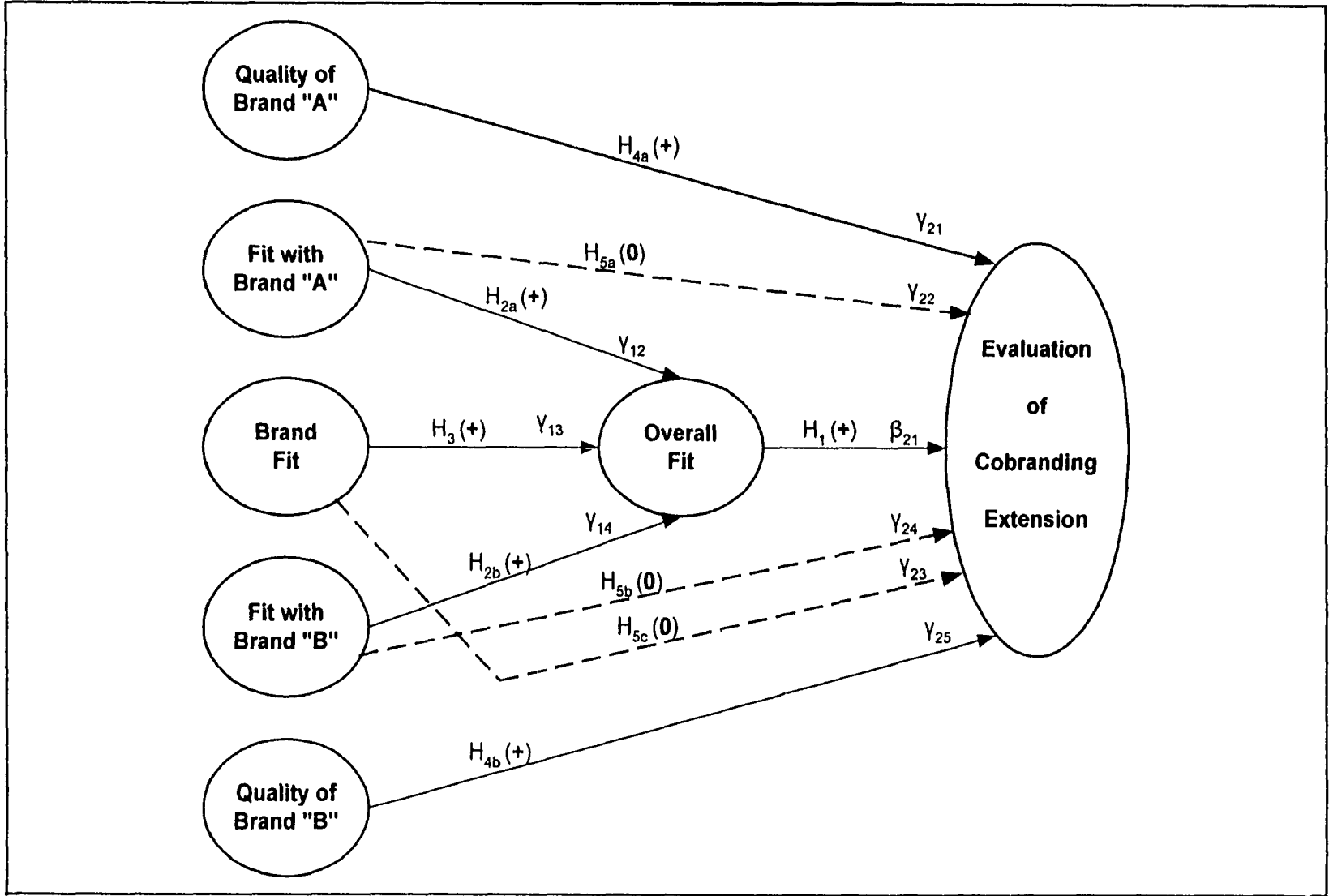


Table 3.3
Summary of Hypotheses

Hypotheses		Coefficient
H_1	The higher the level of overall fit between the cobrand and the cobranding extension, the higher the evaluation of the extension.	$\beta_{21} > 0$
H_{2a}	The higher the level of fit (Fit A) between brand "A", and the extension, the higher the level of the overall fit.	$\gamma_{12} > 0$
H_{2b}	The higher the level of (Fit B) fit between brand "B" and the extension, the higher the level of the overall fit.	$\gamma_{14} > 0$
H_3	The higher the level of brand fit between the two constituent brands, the higher the level of the overall fit.	$\gamma_{13} > 0$
H_{4a}	The higher the quality of brand "A", the higher the evaluation of the extension.	$\gamma_{21} > 0$
H_{4b}	The higher the quality of brand "B" the higher the evaluation of the extension.	$\gamma_{25} > 0$
H_{5a}	The level of fit between brand "A" and the extension (Fit A) has no direct effect in evaluating the extension.	$\gamma_{22} = 0$
H_{5b}	The level of fit between brand "B" and the extension (FitB) has no direct effect in evaluating the extension.	$\gamma_{24} = 0$
H_{5c}	The level of brand Fit has no direct effect in evaluating the extension.	$\gamma_{23} = 0$

CHAPTER 4

METHODOLOGY

This chapter describes the methodology used to assess the goodness of fit of the proposed model and to test the hypotheses developed in the previous chapter. The chapter begins by discussing the pre-testing procedures employed to develop hypothetical cobranding extensions to be used in the main study. Then, the chapter describes the design of the main study and concludes by presenting the scales used to measure the latent variables incorporated in the model.

4.1. PRETEST

The purpose of the pretest was first, to identify brands to form cobrands and second, to match selected products with each of the cobrands to develop hypothetical extensions to be used in the study.

4.1.1. Criteria for Developing Appropriate Cobranding Extensions

Path analysis and structural equation modeling was used to test the proposed model and the hypotheses developed in Chapter 3. In structural equation models, exogenous variables are those whose variability is assumed to be determined by causes outside the causal model. On the other hand, variables whose variation is explained by the variability of exogenous variables or other variables in the model are called endogenous. Thus, in structural models,

variation in the endogenous variables is explained by the variation in the exogenous ones (Dillon and Goldstein 1984). In the proposed model (see Figure 3.6), exogenous variables are the quality of brand "A" (QualA), the fit of the extension with brand "A" (FitA), brand fit (BraFit), the fit of the extension with brand "B" (FitB) and the quality of brand "B" (QualB). Endogenous variables are overall fit (OvrFit) and the evaluation of the cobranding extension (ExtEvl). Thus, in selecting brands to form cobrands and products to be introduced as extensions considerable care was taken to increase the variability within the exogenous variables. This was achieved by: (1) selecting brands of sufficiently different quality to form cobrands and (2) identifying products of different levels of fit with the selected brands, to be used as cobranding extensions.

Furthermore, considering the external validity of the proposed model, it was necessary to identify cobranded products that were reasonable extensions of cobrands and relevant to participants in the study. It was critical to use relatively familiar and real, rather than fictitious, brands for several reasons. First, real brands activate brand effects, whereas fictitious brands activate product category effects rather than brand effects (cf. Broniarczyk and Alba 1994). Second, the use of real brands made it possible for the respondents to use folk theories and other brand related knowledge stored in memory. Thus, participants are able to assess the different types and levels of fit postulated in the model in terms of conceptual coherence. Third, positive or negative affect and other brand associations activated naturally, and not induced fictitiously, by each of the constituent brands can be considered in evaluating cobranding extensions.

Finally, a decision was made to use multiple brands and multiple products to generate hypothetical cobranding extensions. In doing so, an argument could be made that the results would not be dependent on any specific brand pair or any selected product used in the study. This provides additional evidence for the generalizability of the model.

Given the above criteria, selecting brands to form cobrands and products to be used as cobranding extensions in the main study was a challenging task. The challenge was met with a series of qualitative techniques and small surveys. Participants rated the quality of different brands and assessed the fit of potential products with each of the constituent brands used in forming the hypothetical cobranding extensions.

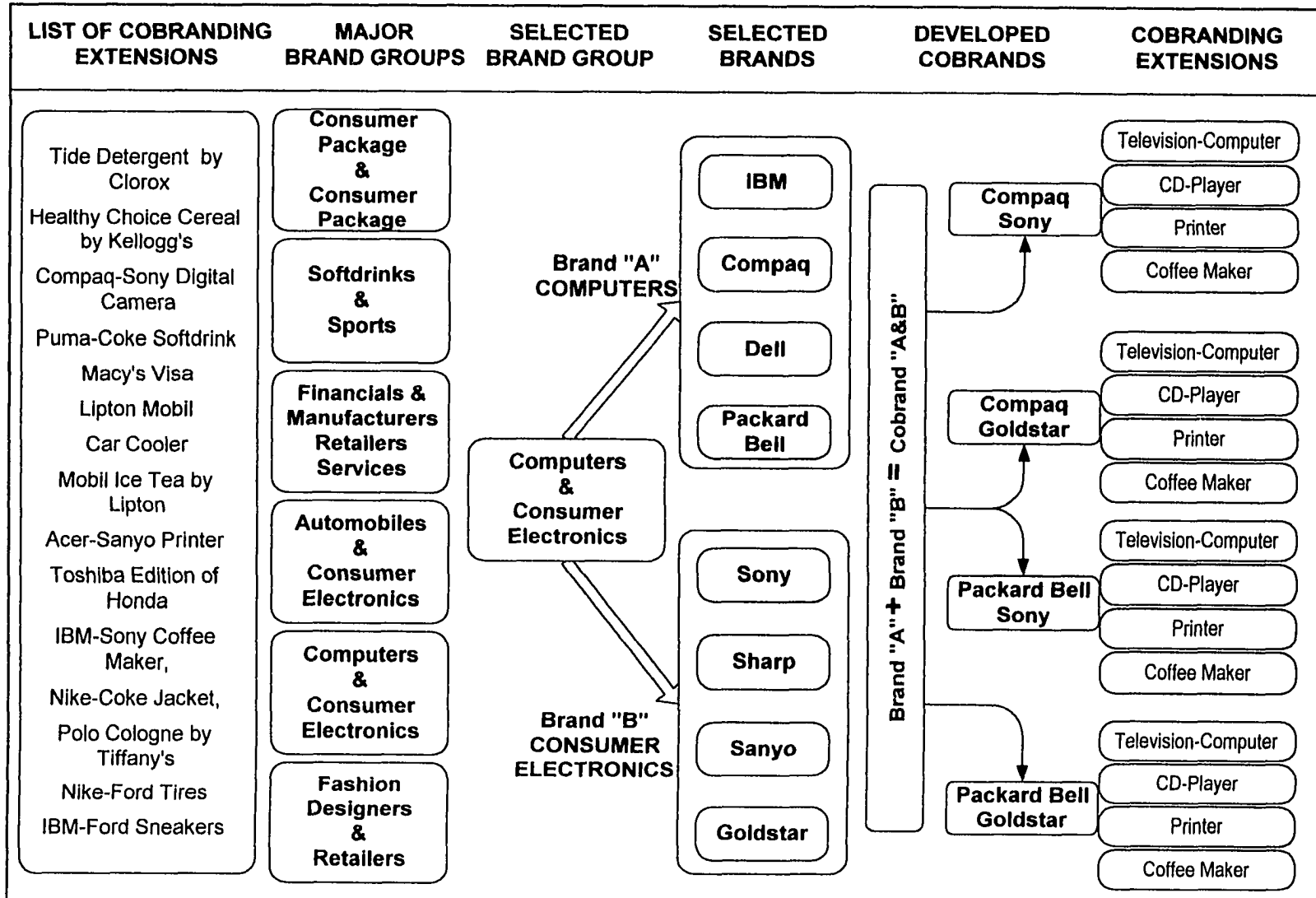
4.1.2. Choosing Hypothetical Cobranding Extensions

The pretest procedure used to select hypothetical cobranding extensions was structured in five sequential steps. An overview of this procedure is presented in Figure 4.1. A discussion of each step follows next.

4.1.2.1. Generating a List of Cobranding Extensions

An initial list of cobranding extensions was generated by a series of tests using qualitative techniques and small-scale surveys of a group of respondents whose characteristics were similar to those that would be participating in the main study. Specifically, all participants during the pretest procedure were undergraduate students in a large northeastern university.

Figure 4.1
Overview of Pretesting Procedures



The pretest and screening procedure began by explaining the concept of brand extensions and the rationale behind cobranding to a marketing class of 39 students. Real and hypothetical examples of cobranding extensions were used to explain cobranding but also to demonstrate potential positive and negative spillover effects of different cobranding strategies.

Next, participants were instructed to form small groups. Their task was to consider familiar brands and to generate a list of plausible cobranding extensions. Partial course credit was given for their participation. Additional credit was given to each group, based on the total number of cobranding extensions generated by the group. At this stage, participants were completely free to choose any brands they wanted to use to form cobrands and match the cobrands with any product they chose. This procedure lasted about 30 minutes and resulted in a very diverse set of hypothetical cobranding extensions. Hypothetical extensions such as Tide Detergent by Clorox, Lipton Car Cooler by Mobil, Mobil Ice Tea by Lipton, Coke–Pepsi Soft drink, and Nike–Ford Tires were found in that set. A combined list of all the cobranding extensions generated at this stage was created. Cobranding extensions that seemed completely illogical (IBM–Ford Sneakers) or did not meet the criteria mentioned in Section 4.1.2 (i.e., they involved unfamiliar brands) were eliminated from further consideration.

About a week later, the same respondents were instructed to evaluate the remaining cobranding extensions as logical or not (on a 7-point Likert scale, where 1=not at all logical, 7=very logical). Each respondent evaluated all the

cobranding extensions generated by groups other than that of which he was a member. The purpose of the evaluation at this point was not to draw any conclusions about the fit of each extension but rather to encourage participants to consider fit when performing the next task. Thus, after rating all the cobranding extensions as logical or not, the respondents were asked to generate additional cobranding extensions. In this instance, they were instructed to use, primarily, the same cobrand pairs but different products. The purpose of this task was to obtain hypothetical examples of cobranding extensions with increased variability in both the fit between each of the constituent brands and in overall fit. The objective was to generate an extensive list of cobranding extensions from which a subset could be selected for the main study. A combined list of all the cobranded products was generated.

After completing the above task, an open discussion took place to give the participants an opportunity to express their thoughts and offer other qualitative comments that might be useful for further development of the study. The major contribution of this discussion was to highlight the importance of overall fit in evaluating cobranding extensions.

4.1.2.2. Classifying Cobranding Extensions

The cobranding extensions generated by the above procedure were classified into different groups based on the characteristics of the cobrands used to name the extension. Thus, cobrands were classified in seven major groups:

- (1) consumer package goods brands paired with other package good brands,
- (2) soft-drinks brands with sports related brands,
- (3) financial institutions (banks and credit card issuers) with major manufactures retailers and other service providers,
- (4) automobile brands with consumer electronics brands,
- (5) fashion designers with major retailers,
- (6) computer related brands with consumer electronics, and
- (7) all others.

Cobrand and cobranding extensions from the last group were eliminated from further consideration. The “all others” group was created to accommodate cobrand that clearly could not fit in one of the other groups. It was considered not to be beneficial for the further development of the study to use an “all others” group. Table 4.1 presents the six major groups, a subset of brands belonging to each group, examples of cobrand, and a selected subset of the associated cobranding extensions.

Qualitative research (i.e., in-depth interviews and small group discussions) with another group of similar respondents revealed that participants were familiar with all the brands and brand pair categories. The groups with which participants had the most experience were the computer-consumer electronics, soft drinks-sports, and fashion designers-major retailers.

Table 4.1
Major Groups of Cobrands and Selected Examples of Cobranding Extensions Within Each Group

Major Group of Cobrands [Brand A + Brand B]	Brand A	Brand B	Examples of Cobranding Extensions
<p>Group 1 Consumer Package Goods pairing with other Consumer Package Goods</p>	Healthy Choice, Breyers, Sara Lee, Aunt Jemima, Maxwell House, Folgers, Dannon	Kellogg's, Oreo, Hershey's, M&M's, Nestle, Quaker Coke, Pepsi Häagen-Dazs	Healthy Choice Cereal by Kellogg's Breyers Ice Cream with Oreo Cookies Aunt Jemima Waffles by Quaker Folgers Coffee Soda by Pepsi Sara Lee Frozen Cake by Häagen-Dazs Dannon Frozen Yogurt by Häagen-Dazs
<p>Group 2 Sports Brands pairing with Soft drink Brands</p>	Nike Puma L A Gear Adidas Fila Reebock	Coke Pepsi Sunkist Snapple RC Sprite Gatorade	Cobranded Sportsdrinks Cobranded Softdrinks Cobranded Casual Cloths Nike Coke Sportsdrink Puma Coke Soda Nike Coke Jacket
<p>Group 3 Financial Institutions pairing with Manufactures, Retailers and other Service Providers</p>	Citibank Chase Bank One MasterCard Visa	Ford, GM Sony WalMart Macy*s Mobil, Shell American Airlines AT&T	Cobranded Credit Cards Macy*s Mastercard Sony Visa by Citibank Ford Visa by Chase Mobil Mastercard by Bank One Visa Credit Card by AT&T

Table 4.1 (Continued)
Major Groups of Cobrands and Selected Examples of Cobranding Extensions Within Each Group

Major Group of Cobrands [Brand A + Brand B]	Brand A	Brand B	Examples of Cobranding Extensions
<p>Group 4 Automobile Brands</p> <p>pairing with</p> <p>Consumer Electronics</p>	<p>Jeep Cherokee Ford Explorer Lexus Honda BMW Audi VW</p>	<p>Sony Sanyo RCA Panasonic JVC Philips Audiovox</p>	<p>Automobiles Equipped with Branded TVs, VCRs, CD-Players, Game Consoles Radio Cassette Players, and other products</p>
<p>Group 5 Major Fashion Designers</p> <p>pairing with</p> <p>Major Retailers</p>	<p>Calvin Klein Polo Ralph Lauren Levis Nautica Tommy Hilfiger Claiborne Perry Ellis</p>	<p>Macy*s Bloomingdale's Tiffany Sears WalMart K-Mart</p>	<p>Calvin Klein Cologne by Macy*s Polo Sunglasses by Bloomingdale's Polo Ties by Bloomingdale's Levi's Jeans by WalMart Nautica Perfume by Tiffany Tommy Shirts by Sears</p>
<p>Group 6 Computer Brands</p> <p>pairing with</p> <p>Consumer Electronics</p>	<p>Compaq, IBM, Apple, Dell, Acer, Hewlett Packard, Packard Bell, Zenon, Micron, Magitronics, Quintex</p>	<p>Sony, Toshiba, Sharp, Sanyo, RCA, Panasonic, JVC, Philips, Goldstar, Magnavox, Samsung</p>	<p>Compaq Sony Television Computer IBM Sony Computer Monitor Compaq Goldstar Video-Phone Packard Bell Sanyo CD-Player Acer Sharp Printer HP Panasonic Vacuum Cleaner Dell Philips Juice Extractor</p>

4.1.2.3. Selecting Brands of Sufficiently Different Quality

Next, the identified brands used to form cobrands within the computer-consumer electronics group were rated in terms of quality. Data were gathered using a self-administrated questionnaire. Participants (n=33) indicated the level of their familiarity with each brand on a 7-point scale from 1 (not at all familiar), to 7 (very familiar). In addition, participants were instructed to write any product or products related to the brand under consideration in a blank space provided in the right margin of the questionnaire. Identification of products associated with the brand was interpreted as another indication of familiarity with the brand. In addition, this provided information for identifying products with high fit with each brand. It was assumed that participants would identify the most typical product or products associated with that brand (Boush and Loken 1991).

In the next section of the questionnaire, participants were asked to indicate, on a scale from 1 (low quality) to 7 (high quality), the level of the overall quality of each brand. The questionnaire used is presented in Appendix A. Results are presented in Table 4.2. Based on these results, two brands of different perceived quality from the computer-related brands (Compaq, X= 5.48, and Packard Bell, X= 4.75) were combined with two other brands also of different quality from the consumer-electronics category (Sony, X=6.27, and Goldstar, X=3.51). The result of this combination was (2 x 2) four hypothetical cobrands: Compaq-Sony, Packard Bell-Sony, Compaq-Goldstar and Packard Bell-Goldstar.

At this point, adding some additional products enriched the list of products associated with each of the four selected brands.

This was achieved by asking participants to name as many products as possible as potential extensions of the already four selected brands. The research instrument used for this task is presented in Appendix B.

Table 4.2
Familiarity and Quality Ratings for Selected Brands

Brand A	Familiarity	Quality	Brand B	Familiarity	Quality
Compaq	5.98	5.48	Sony	6.74	6.27
Packard Bell	4.84	4.75	Goldstar	4.61	3.51
IBM	6.75	5.52	Toshiba	4.24	5.22
Dell	4.19	4.96	RCA	3.97	3.62
Acer	4.14	4.73	Philips	2.10	3.89
Gateway	3.45	4.77	Sanyo	1.83	2.96
Micron	3.52	3.92	Sharp	3.86	4.69

4.1.2.4. Selecting Products of Sufficiently Different Levels of Fit

In order to select products of different levels of fit, participants were asked to assess the fit of each of the products identified earlier as possible cobranding extensions with each of the four brands that were combined to create the cobrands. In this instance, four groups of 16 respondents in each group rated the fit of each potential extension with the corresponding core brand. The task for each group was to rank order these products on the basis of "how much sense

does it make for the 'particular' brand to introduce such products". Rank ordering that gives ordinal data was chosen rather a 7-point scale because rank ordering excludes the possibility of equivalent ratings of fit of each product with each of the corresponding brands. Each respondent ranked ten potential extensions. The "how much sense" measure provides an indication of the perceived fit based on coherence (Lakoff 1987; Medin and Wattenmaker 1987). These rankings can be interpreted as the distance of the product from the brand category (Dawar and Anderson 1994). Thus, the higher the ranking, the shorter is the distance, and the higher the fit. Results are presented in Table 4.3.

Table 4.3
Perceived Fit Between Products and Selected Brands*

Products	Brand A		Brand B	
	Compaq	Sony	Packard Bell	Goldstar
TV-Computer	2	3	2	1
CD-Player	5	1	6	2
Printer	1	5	1	6
Coffee Maker	9	8	8	8
Blender	8	9	9	9
Calculator	6	6	4	5
Microwave	7	7	7	7
Soft-drink	10	10	10	10
Video games	3	2	3	3
Video phone	4	4	5	4

* Lower number indicates higher level of fit

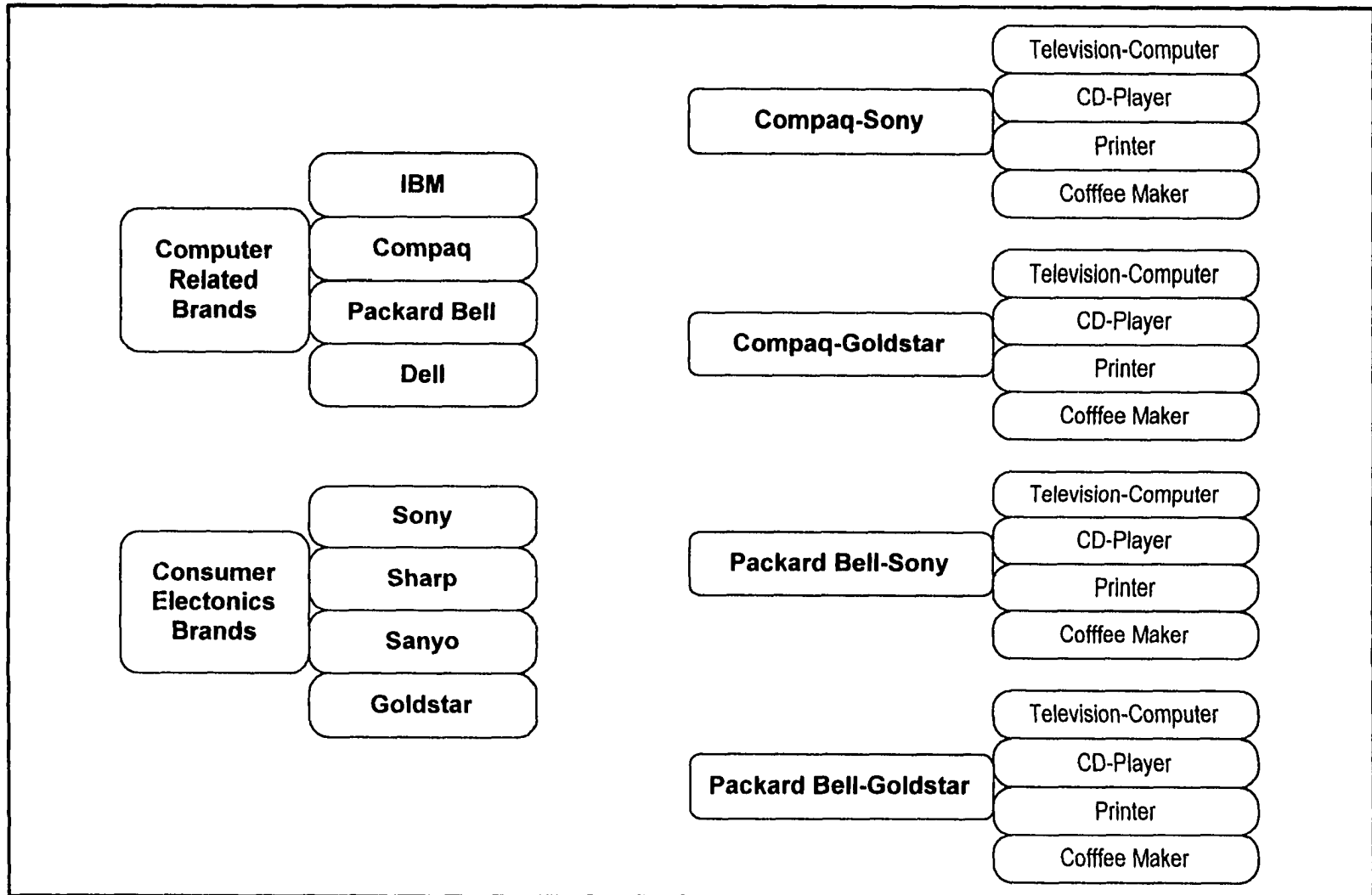
The questionnaire used and the instructions to participants are presented in Appendix C. The completely unrelated product soft drink was used as filler to check whether participants pay the appropriate attention in performing this task. As expected, it received the lowest ranking (fit) by all the participants.

As in the case of quality, an effort was made to identify and select products, which would have different levels of fit with each of the two constituent brands to ensure enough variability within each fit construct. After considering results presented in Table 4.3 four products were selected as hypothetical cobranding extensions, a television-computer, a CD player, a printer, and a coffee maker.

4.1.2.5. Developing Hypothetical Cobranding Extensions

Hypothetical cobranding extensions were developed by matching each cobrand with each of the products selected in the previous section. Specifically, each of the four cobrands was associated with each of the four products, resulting in a total of (4 x 4) sixteen hypothetical cobranding extensions. The selection of brands, cobrands, and the hypothetical cobranding extensions to be used in the main study are presented in Figure 4.2.

Figure 4.2
Hypothetical Cobranding Extensions for the Main Study



4.2. DESIGN AND PROCEDURE FOR THE MAIN STUDY

The procedures used and the testing during the pretest stage ensured that the selected hypothetical extensions were based on familiar real brands, relevant to participants, and the result of combining brands of sufficiently different levels of quality. Furthermore, the products used in the study exhibit sufficiently different levels of fit with each of the constituent brands involved in the extension. Thus, the variability within the exogenous variables of the model was assured and the criteria discussed in Section 4.1.1 were met.

4.2.1. The Data and the Sample

Data about perceptions and evaluations of the four real brands, the four cobrands, and the 16 cobranding extensions were gathered from 116 undergraduate marketing students who participated in a survey for partial course credit. Two participants omitted major parts of the questionnaire making their responses unusable. Hence, a total of 114 usable questionnaires were available for analysis. Each participant evaluated two cobranding extensions yielding a sample of $n=228$ observations. Instructions distributed with the questionnaire stated that the focus of the study was on consumers' opinions about different brands and products.

4.2.2. Measures

A self-administered questionnaire (see Appendix D) was used to collect data about:

1. the perceived quality of each of the two constituent brands,
2. the fit between each of the two brands and the products involved in the cobranding extension,
3. the brand fit (fit between the two brands comprising the cobrand),
4. the overall fit, and
5. the evaluation of the cobranding extension.

Since the study was positioned as a case of brand extensions, it was possible to measure latent constructs with measures and scales used in previous brand extension research³ (Aaker and Keller 1990; Keller and Aaker 1992; Park et al. 1991).

4.2.2.1. Perceived Quality of Constituent Brands

The perceived quality of each of the constituent brands was measured by using a two-item, 7-point Likert scale (1=low quality, 7=high quality). First,

³ Preliminary analysis of a small sample during pretest provided evidence that scales have adequate levels of reliability.

participants directly assessed the level of quality of each brand (1=inferior, 7=superior). Second, they were asked to assess the quality of products to be introduced by each of the constituent brands separately (1=low, 7=high) (Aaker and Keller 1990; Oliver 1994).

4.2.2.2. Fit between Each Constituent Brand and the Extension

The fit of the cobranding extension with each of the constituent brands was defined in terms of conceptual coherence (Murphy and Medin 1985) and was measured on a two-item, 7-point Likert scale (Dawar and Anderson 1994). Respondents were asked to assess each cobranding extension by answering two questions:

- (1) how logical is the cobranding extension (1= not very logical, 7=very logical), and
- (2) how much sense would it make for the brand to introduce the underlying product (1=no much sense, 7=very much sense).

4.2.2.3. Brand Fit

Brand fit was measured with a two-item scale similar to those used for the other fit measures. Respondents were asked to assess how logical it would be, and how much sense it would make, for the two constituent brands to jointly introduce cobranded products. To be consistent with the conceptual definition of brand fit, no product was mentioned. That is, brand fit was assessed without reference to any product.

4.2.2.4. Overall Fit

The degree of overall fit was measured by asking respondents how logical it would be, and how much sense it would make, for each of the constituent brands to introduce the specific cobranding extension. Note that in measuring overall fit, in contrast to the case of brand fit, the extension product associated with the cobrand was mentioned. Thus, whereas brand fit captures the fit between the two constituent brands irrespective of any product, overall fit captures the coherence of the cobrand with the proposed cobranding extension.

4.2.2.5. Cobranding Extension Evaluation

Evaluation of cobranding extensions was conceptualized in terms of perceived quality and was measured using a two-item, 7-point scale (Aaker and Keller, 1990; Oliver, 1994).

First, respondents rated the overall quality of the cobranding extension (1=low quality, 7=high quality). Then, respondents were asked to assume that they were in the market for the product mentioned in the extension and to assess the probability that they would buy the cobranding extension (1=low, 7=high).

In addition, participants expressed their familiarity with the brands involved in each of the cobranding extension they considered (1=not familiar, 7=very familiar). Participants also had the opportunity to evaluate the products mentioned in the study as single brand extensions based on only one brand.

4.3. SUMMARY

This chapter presented the methodology used to test the goodness of fit of the model and the hypotheses developed in Chapter 3. The chapter described the procedures used to develop hypothetical cobranding extensions, as well as the measures of the underlying constructs. The set of brands, cobrands, and cobranding extensions to be used in the main study are presented in Figure 4.2. The next chapter discusses the method of data analysis and the results.

CHAPTER 5

DATA ANALYSIS AND RESULTS

This chapter discusses the method of data analysis and presents the results. The goodness of fit of the proposed model and the hypotheses were tested using data collected by evaluating the sixteen hypothetical cobranding extensions presented in Figure 4.2. The generalizability and robustness of the postulated model were assessed with a replication study utilizing a set of different cobranding extensions based on a set of different brands.

5.1. MAIN STUDY

Data about perceptions and evaluations of the four real brands, the four cobrands, and the sixteen cobranding extensions were gathered from 116 undergraduate business students who participated in a survey for partial course credit. Two participants omitted major parts of the questionnaire making their responses unusable. Thus, a total of 114 usable questionnaires were available for analysis. Data were gathered by utilizing eight different versions of the same questionnaire. Each respondent evaluated two cobranding extensions based on the same cobrand resulting in a sample of $(114 \times 2) n=228$ observations.

Instructions distributed with the questionnaire stated that the focus of the study was on consumers' opinions about different products and brands. The questionnaire used is shown in Appendix D.

5.1.1. Preliminary Analysis

Before assessing the goodness of fit of the model and testing the hypotheses, a preliminary analysis was performed to assess the level of familiarity of the respondents with the brands used in naming the hypothetical cobranding extensions. Results showed that respondents had adequate levels of familiarity with all the brands featured in the study $X_{(COMPAQ)}=6.23$, $X_{(PACKARD-BELL)}=4.95$, $X_{(SONY)}=6.74$, $X_{(GOLDSTAR)}=4.52$. In addition, because each participant had evaluated two cobranding extensions the existence of possible order effects was a concern. An ANOVA test shows that order effects are insignificant. The F-value for order is $F=0.31$ ($p>0.81$) and the F-value for the first level interaction (order x extension) is $F=1.33$ ($p>0.19$).

5. 2. DATA ANALYSIS

A maximum likelihood estimation procedure for examining linear structural equation systems (LISREL 8) was used as a method of data analysis (Jöreskog and Sörbom 1996). The use of multiple indicators of unobservable variables in structural equation models allows measurement error to be accounted for in the explicit representation of constructs (Aaker and Bagozzi 1979; Anderson, Engledow, and Becker 1979). LISREL has the advantage of assessing, simultaneously, the adequacy of the measures used in the study (measurement model) and the significance of the path coefficients implied by the hypotheses (structural model).

Table 5.1
Means, Standard Deviations and Correlations of the Observed Variables of the Main study

Variables	Y₁	Y₂	Y₃	Y₄	X₁	X₂	X₃	X₄	X₅	X₆	X₇	X₈	X₉	X₁₀
Means	3.952	3.864	4.632	3.847	4.934	5.140	4.180	4.189	4.535	4.465	4.202	4.193	5.184	5.377
S.D	1.762	1.729	1.693	1.939	1.138	1.141	2.109	2.101	1.515	1.643	2.051	2.084	1.658	1.504
OvrFit Y ₁	1.000													
OvrFit Y ₂	.920**	1.000												
ExtEvl Y ₃	.750**	.738**	1.000											
ExtEvl Y ₄	.764**	.815**	.797**	1.000										
QualA X ₁	.207**	.190**	.241**	.247**	1.000									
QualA X ₂	.209**	.182**	.232**	.225*	.804**	1.000								
FitA X ₃	.415**	.436**	.445**	.415**	.218**	.211**	1.000							
FitA X ₄	.400**	.420**	.408**	.391**	.228**	.208**	.930**	1.000						
BraFit X ₅	.457**	.482**	.410**	.423**	.159*	.084	.224**	.206**	1.000					
BraFit X ₆	.361**	.469**	.366**	.408**	.214**	.172**	.200**	.200**	.870**	1.000				
FitB X ₇	.505**	.512**	.548**	.466**	.132*	.090	.286**	.259**	.157*	.082	1.000			
FitB X ₈	.540**	.544**	.525**	.471**	.122	.091	.273**	.283**	.182**	.137*	.954**	1.000		
QualB X ₉	.204**	.245**	.327**	.303**	.144*	.024	.135*	.116	.378**	.269**	.344**	.354**	1.000	
QualB X ₁₀	.228**	.260**	.378**	.322**	.169*	.103	.177**	.146*	.344**	.292**	.351**	.366**	.862**	1.000

** significant at $p < .01$, *significant at $p < .05$.
n=228

Thus, unlike other path analysis or causal methods, this procedure simultaneously evaluates the hypothesized system relationships in terms of both measurement and structural characteristics.

5.2.1. The Measurement Model

The measurement model specifies how the latent variables are measured in terms of the observed variables. The means, standard deviations, and correlations among the observed variables used in the analysis are presented in Table 5.1.

Table 5.2
Reliabilities of Latent Constructs for the Main Study*

Scale	# of Items	Mean	S.D	Reliability
Overall Fit	2	7.81	3.42	.96
Extension Evaluation	2	8.48	3.44	.89
Quality of Brand A (QualA)	2	10.08	2.16	.89
Fit with Brand A (FitA)	2	8.37	4.13	.96
Brand Fit	2	9.00	1.64	.93
Fit with Bran B FitB	2	8.39	4.08	.98
Quality of Brand B (QualB)	2	10.56	3.05	.92

*(n=228)

In terms of quality of the measurement model, the constructs display satisfactory levels of reliability with reliability indices ranging from 0.89 to 0.98, (see Table 5.2). All of the factor loadings are significant, t-values range from 6.54

to 31.89 (see Appendix F). In addition, the factor loadings are highly related to their respective constructs in support of convergent validity.

Initial evidence for discriminant validity was obtained by examining the correlation matrix among the latent constructs. Constructs are not perfectly correlated, an indication of discriminant validity.

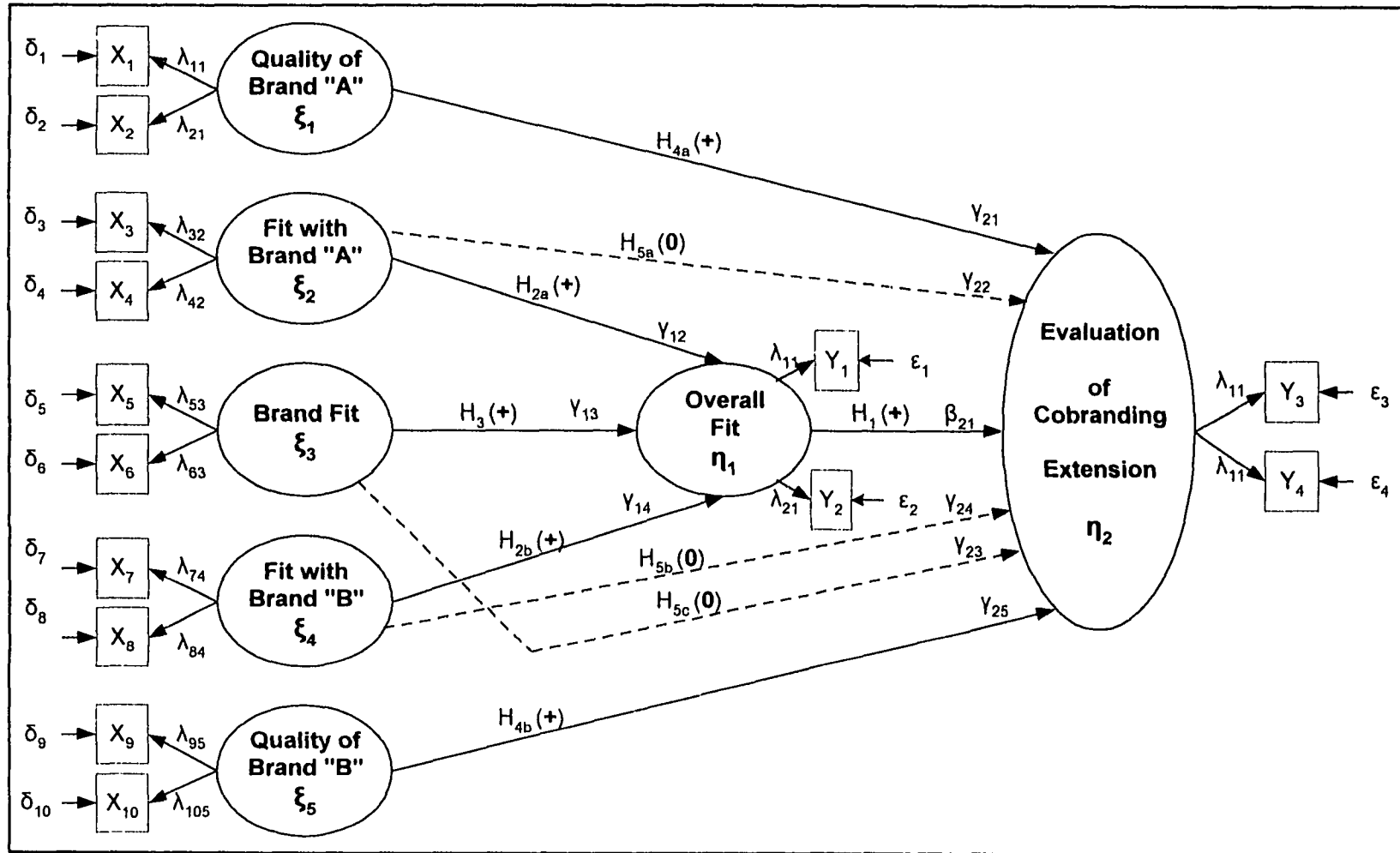
Furthermore, a series of chi-square differences tests on the factors correlations provide evidence of discriminant validity among all the constructs.⁴ Specifically, the significant $\chi^2_{d1}=19.62$ ($\Phi_{\text{FitA, FitB}}$), $\chi^2_{d1}=17.35$ ($\Phi_{\text{FitA, BrandFit}}$) and $\chi^2_{d1}=25.97$ ($\Phi_{\text{FitB, BrandFit}}$) indicate that FitA, FitB, and Brand Fit, which are measured in very similar terms, are not perfectly correlated and that discriminant validity is achieved among them (Anderson and Gerbing 1988; Bagozzi and Philips 1982).

5.2.2. The Structural Model

The structural equation model specifies the causal relationships among the latent, unobserved variables. In Figure 5.1 each arrow expresses a linear relationship between the corresponding constructs. The expected value of each parameter to be estimated is shown as + or 0.

⁴ Discriminant validity between two constructs is assessed by constraining the estimated correlation parameter Φ_{ij} between them to 1.0 and then performing a chi-square difference test on the values obtained for the constrained and unconstrained models (Jöreskog 1971).

Figure 5.1
Evaluation of Cobranding Extensions: Structural and Measurement Models



*The two-way arrows depicting correlations among the exogenous latent constructs are omitted from the diagram for clarity purposes. However, in fitting the model these correlations were considered and accounted for.

Note the expected value of parameters γ_{22} , γ_{23} and γ_{24} . They represent direct effects between the latent constructs ξ_2 , ξ_3 , ξ_4 and η_2 . As stated in Chapter 3, these parameters were all hypothesized to be zero. For clarity and readability, the two-way arrows depicting correlations among the exogenous latent constructs are omitted from the diagram. However, in fitting the model these correlations were considered and accounted for. They are the elements of the covariance matrix Φ (see Appendix E) among the unobservable latent constructs ξ ; the estimates for the elements of the Φ covariance matrix are presented in Appendix F.

5.2.3. Model Evaluation

When evaluating LISREL models, one relies on the chi-square statistic for testing the goodness of fit of the entire model. Assuming a good fit, t-values are used to assess the significance of the individual coefficients suggested by the hypothesized relationships. However, chi-square is sensitive to sample size and to departures from multivariate normality of observed variables. Large sample sizes and departures from multivariate normality tend to increase chi-square beyond the value expected from specification error in the model (Bagozzi 1980; Bollen 1989; Mueller 1996).

To overcome the limitations of the chi-square statistic, alternative evaluation methods have been proposed (Bagozzi and Yi 1988; Bollen 1989; Gerbing and Anderson 1992). The logic of the alternative approach is that, instead of evaluating the model in isolation, the evaluation takes place in

reference to another model, usually a highly restricted one. This highly restricted model is called the independence or null model. The null model assumes correlation only between the X's (the measurement model of the exogenous variables). Furthermore, the null model assumes zero correlation between the Y's (measurement model of endogenous variables) and zero correlations between X's and Y's. In essence, the null model is the hypothetical worst-case scenario. Based on the null model, several fit indices are calculated. These indices indicate how a proposed model fits the data versus the null case scenario or, alternatively, how much improvement one gets by adopting the proposed model rather than the independence-null model (Kelloway 1998).

LISREL version 8 directly reports the indices needed for assessing the goodness of fit of the model (Jöreskog and Sörbom 1996). Once the goodness of fit of the model is established, the significance of the structural relationships depicted by the individual linear paths is examined.

5.2.4. Fitting the Model

Alternative fit indices for the proposed and the less restrictive, competing models are presented in Table 5.3. The only difference between the proposed and the less restricted competing models is the existence of three direct paths between FitA, FitB, and Brand Fit, for the less restricted model, suggesting direct effects between the above constructs and the evaluation of the cobranding extension. In the proposed model, no direct effects were hypothesized. Thus, in the proposed model coefficients γ_{22} , γ_{23} , and γ_{24} , of the Gamma (Γ) matrix (see Appendix E) were fixed to zero, while in the competing model these coefficients

remained free to be estimated. The comparison, between the proposed and the competing models, is necessary for testing the existence of direct effects between FitA, FitB and Brand Fit and the evaluation of the cobranding extension.

Assessment of the goodness of fit of the proposed model was based on the fit indices presented in the second column of Table 5.3. Taken collectively, the reported goodness of fit indices suggest that the proposed model has good fit. For completeness, major alternative fit indices will be briefly discussed.

5.3. ALTERNATIVE FIT INDICES

The fit of structural equation models is assessed by examining three different types of fit indices:

1. absolute fit,
2. comparative fit, and
3. parsimonious fit.

A short description of the meaning of each type of fit and the corresponding indices used to assess the proposed model is presented next. For a detailed discussion of assessment of the goodness of fit of LISREL models see Bollen (1989).

Table 5.3
Fit Indices for the Proposed and the Competing Models of the Main Study*

Statistic - Fit Index	Restricted Proposed Model	Less Restricted Competing Model
	Absolute Fit	
Degrees of Freedom	61	58
Chi-square	147.56	144.22
p-value	0.00	0.00
Degrees of Freedom (null)	91	91
Chi-square (null)	3235.85	3235.85
p-value (null)	0.00	0.00
RMR	0.032	0.032
Standardized RMR	0.032	0.032
RMSEA	0.080	0.082
GFI	0.91	0.92
AGFI	0.85	0.85
	Comparative Fit	
NFI	0.95	0.96
NNFI	0.96	0.96
CFI	0.97	0.97
IFI	0.97	0.97
RFI	0.93	0.93
	Parsimonious Fit	
PGFI	0.53	0.51
PNFI	0.64	0.61

* n=228, chi-squared difference test ($X^2_{d3}=3.34$)

5.3.1. Absolute Fit Indices

Tests of absolute fit are concerned with the ability of the model to reproduce the correlation/covariance matrix. Absolute fit indices indicate how much improvement one gets by adopting the proposed model as opposed to the null model. The major absolute fit indices are chi-square, root mean square residual, root mean square error of approximation, goodness of fit index and the adjusted goodness of fit index.

5.3.1.1. The Chi-Square Test

The single test statistic to test the null hypothesis is chi-square. Sigma (Σ) is the population covariance matrix and $\Sigma(\Theta)$ is the covariance matrix implied by the model (Bollen and Long, 1993). A non-significant chi-square suggests that there is no significant discrepancy between the covariance matrix implied by the model and the population covariance matrix. Thus, a non-significant chi-square indicates that the model fits the data and that the model adequately reproduces the population covariance matrix.

The chi-square for the proposed model ($X^2_{61}=147.56$) is much lower than the chi-square of the null model ($X^2_{91}=3236$) (see Table 5.3). However, as expected, despite the improvement of the chi-square, this value is still significant.

Based solely on the chi-square test ($X^2_{61}=147.56$, $p<0.001$), the null hypothesis that the proposed model fits the data is rejected. That is, if the null hypothesis is true, there is a very low probability of obtaining the given results.

However, because of the limitations of the chi-square test, additional criteria are used in assessing the goodness of fit of the model.

5.3.1.2. Root Mean Square Residual (RMR)

RMR is the simplest index of fit provided by LISREL. Root Means Square Residual is the mean of the squared differences between the implied and the observed covariance matrixes. The lower bound of the index is zero (0). Low values of RMR are evidence of good fit. However, the index is sensitive to the scale of measurement of the latent constructs. Therefore, it is difficult to determine what is the appropriate low value. To overcome this problem, the standardized RMR, which has a lower bound of 0 and an upper bound of 1, is used. When all the observed variables are standardized, as in the present case where the matrix to be analyzed is the correlation matrix, RMR and standardized RMR are identical. For the standardized RMR any value less than 0.05 is an indication of good fit.

For the proposed model both the RMR and standardized RMR are equal to 0.03. Clearly this magnitude of $RMR=0.03$ is interpreted as an indication of good fit.

5.3.1.3. Root Mean Square Error of Approximation (RMSEA)

The root mean square error of approximation also is based on analysis of residuals. Smaller values of RMSEA indicate good fit. Steiger (1990) suggests that values below 0.10 indicate good fit. The RMSEA for the proposed model is

0.08, which is below Steiger's (1990) critical value 0.10, suggesting good fit of the model.

5.3.1.4. Goodness of Fit Index (GFI)

The goodness of fit index (GFI) is based on a ratio of the sum of the squared discrepancies of the observed variances. The range of GFI is 0 to 1. Values higher than 0.9 indicate good fit of the model to the data. The GFI for the proposed model is 0.91, suggesting good fit.

5.3.1.5. Adjusted Goodness of Fit Index (AGFI)

Although AGFI is an absolute fit index, it can be thought as a parsimonious index. AGFI is the GFI adjusted for the degrees of freedom of the model. A good fit for a restricted model yields relatively high values for both GFI and AGFI. Whereas a good fit achieved by a less restricted model (a model with more paths, leaving fewer degrees of freedom) will produce a relatively high GFI and lower AGFI. Taken together the value of AGFI=0.85 and the corresponding value of GFI=0.91 suggest that the fit of the proposed model is adequate.

5.3.2. Comparative Fit Indices

Comparative fit indices are used to avoid problems inherent to measures of absolute fit. The comparative fit indices assess whether or not the model under consideration is better than another alternative model. Comparative fit indices are based on a comparison of the theoretically derived proposed model with a baseline model (Kelloway, 1998). The most frequently used comparative fit

indices are the Normed Fit Index, Non-Normed Fit Index, Comparative Fit Index, Incremental Fit Index, and the Relative fit Index.

5.3.2.1. Normed Fit Index (NFI)

The Normed Fit Index (NFI) ranges from 0 to 1. Values higher than 0.90 indicate a good fit. Bentler and Bonett (1980) point out that NFI indicates the percentage improvement in fit over the baseline independence model. Thus, the reported $NFI=0.95$ means that the model is 95% better fitting than the independence model.

5.3.2.2. Non-Normed Fit Index (NNFI)

The Non-Normed Fit Index (NNFI) is the same as the NFI adjusted for the number of degrees of freedom in the model. The NNFI reduces the problem of underestimating fit, which is present in estimating NFI, but it may result in values outside the range 0 to 1. The lower bound is 0. The upper bound may be greater than 1. Values above 0.90 suggest a good fit. Based on the NNFI, the proposed model has a good fit since $NNFI=0.96$.

5.3.2.3. Incremental Fit Index (IFI), Comparative Fit Index (CFI) and Relative Fit Index (RFI)

The Incremental Fit Index (Bollen 1989), Comparative Fit Index (Bentler 1990) and the Relative Fit Index (Marsh, Balla and MacDonald 1988) were proposed in order to avoid the problem of indices ranging outside the 0 and 1 range. They are scaled so that values range between 0 and 1. Values greater than 0.90 indicate a good fit to the data. For the proposed model, $IFI=0.97$,

CFI=0.97, and RFI=0.93. Clearly, the magnitude of all three indices suggests a very good fit.

5.3.3. Parsimonious Fit Indices

Parsimonious fit indices are concerned primarily with the trade-off between fit and degrees of freedom. Several of the fit indices can be calculated by adjusting other fit indices for model complexity. Frequently used parsimonious fit indices are the Parsimonious Goodness of Fit index and the Parsimonious Normed Fit index.

5.3.3.1. Parsimonious Goodness of Fit Index (PGFI) and Parsimonious Normed Fit Index (PNFI)

Parsimonious Goodness of Fit Index (PGFI) and Parsimonious Normed Fit Index (PNFI) range from 0 to 1. Higher values denote a better parsimonious fit. However, unlike other indices there is no standard for how high either index should be to indicate good parsimonious fit. Neither PGFI nor PNFI are expected to reach the 0.90 cut-off criterion used for other fit (Kelloway 1998). Rather, both indices are used to compare two competing theoretical models. An index of parsimonious fit is calculated for each competing model. If both competing models are theoretically sound, the model with the higher parsimonious fit is chosen. For the proposed model, PGFI=0.53 and PNFI=0.64.

5.3.4. A Global Assessment of the Goodness of Fit of the Model

The conclusion, from the above discussion and the alternative goodness of fit indices reported in Table 5.3, is that the fit of the proposed model is good. All of the criteria used in assessing the goodness of fit are consistent with this conclusion.

The validity of the model was tested, by assessing all the hypothesized relationships simultaneously. Next, the significance of the path coefficients suggested by the hypothesized relationships, is examined.

Jöreskog (1993) suggests that one must move beyond the assessment of goodness of fit to truly evaluate relationships implied by the structural model. For clarity and completeness, each hypothesis is discussed separately.

5.4. HYPOTHESIZED RELATIONSHIPS

Table 5.4 summarizes, the coefficient estimates and corresponding t-values for each hypothesis. A brief discussion of each hypothesis follows.

5.4.1. Effects of Overall Fit (H_1)

The postulated relationship between overall fit and the evaluation of the cobranding extension is positive and significant ($\beta_{21}=0.77$, $t=16.03$). Hypothesis H_1 (Overall Fit \Rightarrow Evaluation of the Extension) is supported. The higher the level of overall fit, the higher the evaluation of the cobranding extension.

Table 5.4
Structural Relationships and Coefficient Estimates for the Proposed Model of the Main Study

Hypotheses	Structural Paths		Structural Coefficients		t-value	Support
			Expected	Estimated		
H ₁	Overall Fit	⇒ Extension Evaluation	$\beta_{21} > 0$	$\beta_{21} = 0.77$	16.03	Yes
H _{2a}	Fit with Brand A	⇒ Overall Fit	$\gamma_{12} > 0$	$\gamma_{12} = 0.24$	4.76	Yes
H _{2b}	Fit with Brand B	⇒ Overall Fit	$\gamma_{14} > 0$	$\gamma_{14} = 0.42$	8.40	Yes
H ₃	Brand Fit	⇒ Overall Fit	$\gamma_{13} > 0$	$\gamma_{13} = 0.39$	7.34	Yes
H _{4a}	Quality of Brand A	⇒ Extension Evaluation	$\gamma_{21} > 0$	$\gamma_{21} = 0.07$	2.00	Yes
H _{4b}	Quality of Brand B	⇒ Extension Evaluation	$\gamma_{25} > 0$	$\gamma_{25} = 0.14$	3.54	Yes
H _{5a}	Fit with Brand A	⇒ Extension Evaluation	$\gamma_{22} = 0$	$\gamma_{22} = 0$	N.A.	Yes*
H _{5b}	Fit with Brand B	⇒ Extension Evaluation	$\gamma_{24} = 0$	$\gamma_{24} = 0$	N.A.	Yes*
H _{5c}	Brand Fit	⇒ Extension Evaluation	$\gamma_{23} = 0$	$\gamma_{23} = 0$	N.A.	Yes*

* Support comes from the overall goodness of fit of the model. Corresponding coefficients were fixed to be zero.

5.4.2. Antecedents of Overall Fit (H_{2a} , H_{2b} , H_3)

Hypotheses H_{2a} , H_{2b} , and H_3 state that FitA, FitB, and Brand Fit are positively related with Overall Fit. The t-values of the corresponding coefficient estimates (FitA \Rightarrow Overall Fit, $\gamma_{12}=0.24$, $t=4.76$; FitB \Rightarrow Overall Fit, $\gamma_{14}=0.42$, $t=8.40$; and Brand Fit \Rightarrow Overall Fit, $\gamma_{13}=0.39$, $t=7.34$) provide support that γ_{12} , γ_{14} , and γ_{13} , are positive and significant. Thus, hypotheses H_{2a} , H_{2b} , H_3 are supported.

As suggested by the conceptual combination literature, the overall fit between the cobrand and the cobranding extension is a function of FitA, FitB and Brand Fit.

5.4.3. Effects of Quality of Constituent Brands (H_{4a} , H_{4b})

Hypotheses H_{4a} and H_{4b} state that the quality of the constituent brands (QualA and QualB) has a positive direct effect on the extension evaluation. The estimated coefficients and the corresponding t-values (QualA \Rightarrow Extension Evaluation, $\gamma_{21}=0.07$, $t=2.00$; QualB \Rightarrow Extension Evaluation, $\gamma_{25}=0.14$, $t=3.54$) provide support for both hypotheses.

Thus, earlier research findings in brand extensions (cf. Aaker and Keller 1990; Keller and Aaker 1992), that the higher the quality of the core brand, the higher the evaluation of the extension, are replicated in the case of cobranding.

5.4.4. Direct Effects of Fit A, Fit B, and Brand Fit on the Extension

Evaluation

Hypotheses H_{5a}, H_{5b}, and H_{5c} state that there are no direct effects between FitA, FitB, Brand Fit and the evaluation of the cobranding extension. This requires that coefficients for the three direct paths γ_{22} , (FitA \Rightarrow Extension Evaluation), γ_{24} (FitB \Rightarrow Extension Evaluation), and γ_{23} (Brand Fit \Rightarrow Extension Evaluation) are not statistically different from zero. Initial support, that the above three path coefficients are equal to zero, implying no direct effects, was established from the good goodness of fit of the proposed model. Since the fit of the model is good, one may conclude that no other paths exist. However, to get additional evidence, an alternative competing model was fitted to the data (Jöreskog 1993). The competing model was specified so as to account for direct effects that are not accounted for by the proposed model. As mentioned, this became possible by freeing the corresponding elements, γ_{22} , γ_{23} , and γ_{24} , of the Gamma (Γ) matrix. A statistically significant estimate of any of these coefficients implies a direct relationship among the underlying constructs.

Table 5.3 presents the goodness of fit indices for both the proposed and the less restricted competing models. Using the criteria used to assess the goodness of fit of the proposed model, the fit of the competing less restricted model is considered to be adequate. However, a close comparison of the two models is needed to choose the one with the better fit and to test the significance or non-significance of the direct effects of FitA, FitB, and Brand Fit.

Note that the competing model has fewer degrees of freedom than the proposed model since three more degrees of freedom were lost in estimating the three additional parameters. Hence, the competing, less restricted model is more complex. While the greater complexity is expected to increase the goodness fit of the model, the fit indices reported in Table 5.3 suggest that this is not the case. A comparison of the corresponding indices for the two models shows that the fit of the proposed restricted model is as good as, or even better than, the fit of the competing model. Whereas, most of the fit indices of the two models are identical the greater values of AGFI, PGFI and PNFI (see Table 5.3) for the proposed model suggest a more parsimonious fit. If both models are theoretically sound the model with the higher parsimonious fit should be chosen (Kelloway 1998).

Further support for the position that the three additional paths, expressing direct relationships, have not increased the goodness of fit of the model was gathered by a chi-square difference test. Generally, a more restricted model has higher chi-square (X^2) values than a less restricted one. Since the former is nested within the latter, their goodness of fit can be compared statistically with a chi-square difference test (X^2_d). The chi-square difference between the two models is distributed as the chi-square statistic, with degrees of freedom equal to the difference between degrees of freedom of each of the two models. If the X^2_d is not statistically significant, the more restricted model should be chosen as the better, more parsimonious representation of the structure underlying the observed variables (Mueller, 1996). The chi-square difference between the proposed and the competing models with three degrees of freedom is 3.34 ($X^2_{d3}=3.34$). This difference is not significant ($p>0.05$).

Table 5.5
Coefficient Estimates for the Proposed and Competing Models of the Main Study

Hypotheses	Structural Paths Expected			Proposed Model		Competing Model		Support
				Coefficients	t-value	Coefficients	t-value	
H ₁	Overall Fit	+	Extension Evaluation	$\beta_{21} = 0.77$	16.03	$\beta_{21} = 0.75$	12.31	Yes
H _{2a}	Fit with Brand A	+	Overall Fit	$\gamma_{12} = 0.24$	4.76	$\gamma_{12} = 0.23$	4.60	Yes
H _{2b}	Fit with Brand B	+	Overall Fit	$\gamma_{14} = 0.42$	8.40	$\gamma_{14} = 0.42$	8.38	Yes
H ₃	Brand Fit	+	Overall Fit	$\gamma_{13} = 0.39$	7.34	$\gamma_{13} = 0.39$	7.41	Yes
H _{4a}	Quality of Brand A	+	Extension Evaluation	$\gamma_{21} = 0.07$	2.00	$\gamma_{21} = 0.06$	1.77	Yes*
H _{4b}	Quality of Brand B	+	Extension Evaluation	$\gamma_{25} = 0.14$	3.54	$\gamma_{25} = 0.15$	3.40	Yes
H _{5a}	Fit with Brand A	0	Extension Evaluation	$\gamma_{22} = 0$	N.A.	$\gamma_{22} = 0.06$	1.66	Yes
H _{5b}	Fit with Brand B	0	Extension Evaluation	$\gamma_{24} = 0$	N.A.	$\gamma_{24} = 0.01$	0.25	Yes
H _{5c}	Brand Fit	0	Extension Evaluation	$\gamma_{23} = 0$	N.A.	$\gamma_{23} = -0.03$	-0.064	Yes

*p-value for the competing model is $p < 0.10$.

Thus, the fit of the less restricted competing model is not an improvement over the fit of the proposed model. This provides additional evidence and support for the lack of direct effects postulated by H_{5a} , H_{5b} and H_{5c} hypotheses.

In addition, support for the lack of direct effects hypotheses can be gathered by testing the significance of the corresponding path coefficients γ_{22} , γ_{24} , and γ_{23} , of the Gamma (Γ) matrix of the competing less restricted model.

Table 5.5 summarizes the coefficient estimates and t-values for both the proposed and the competing model. The estimated coefficients and the corresponding t-values (FitA \Rightarrow Extension Evaluation, $\gamma_{22}=0.06$, $t=1.66$; FitB \Rightarrow Extension Evaluation, $\gamma_{24}=0.01$, $t=0.25$; and Brand Fit \Rightarrow Extension Evaluation, $\gamma_{23}=-0.03$, $t=-0.64$) provide evidence that all three hypotheses are supported. The path Brand Fit \Rightarrow Extension Evaluation (γ_{23}) is negative, but as suggested by its t-value ($t=-0.64$) is not significant. Also, the t-value of the path FitA \Rightarrow Extension Evaluation, ($\gamma_{13}=0.67$, $t=1.66$) suggests that the underlying coefficient is not significant. However, based on the magnitude of the t-value ($t=1.66$), a case can be made that the coefficient γ_{13} is significant at a higher alpha ($p<0.10$) a finding that will be explored and discussed further.

5.4.5. Summary of Findings of the Main Study

Overall, the results of the main study provide support for the proposed model and the hypothesized relationships. All the hypotheses are supported. However, an argument can be made that hypothesis H_{4a} , (Quality of Brand A \Rightarrow

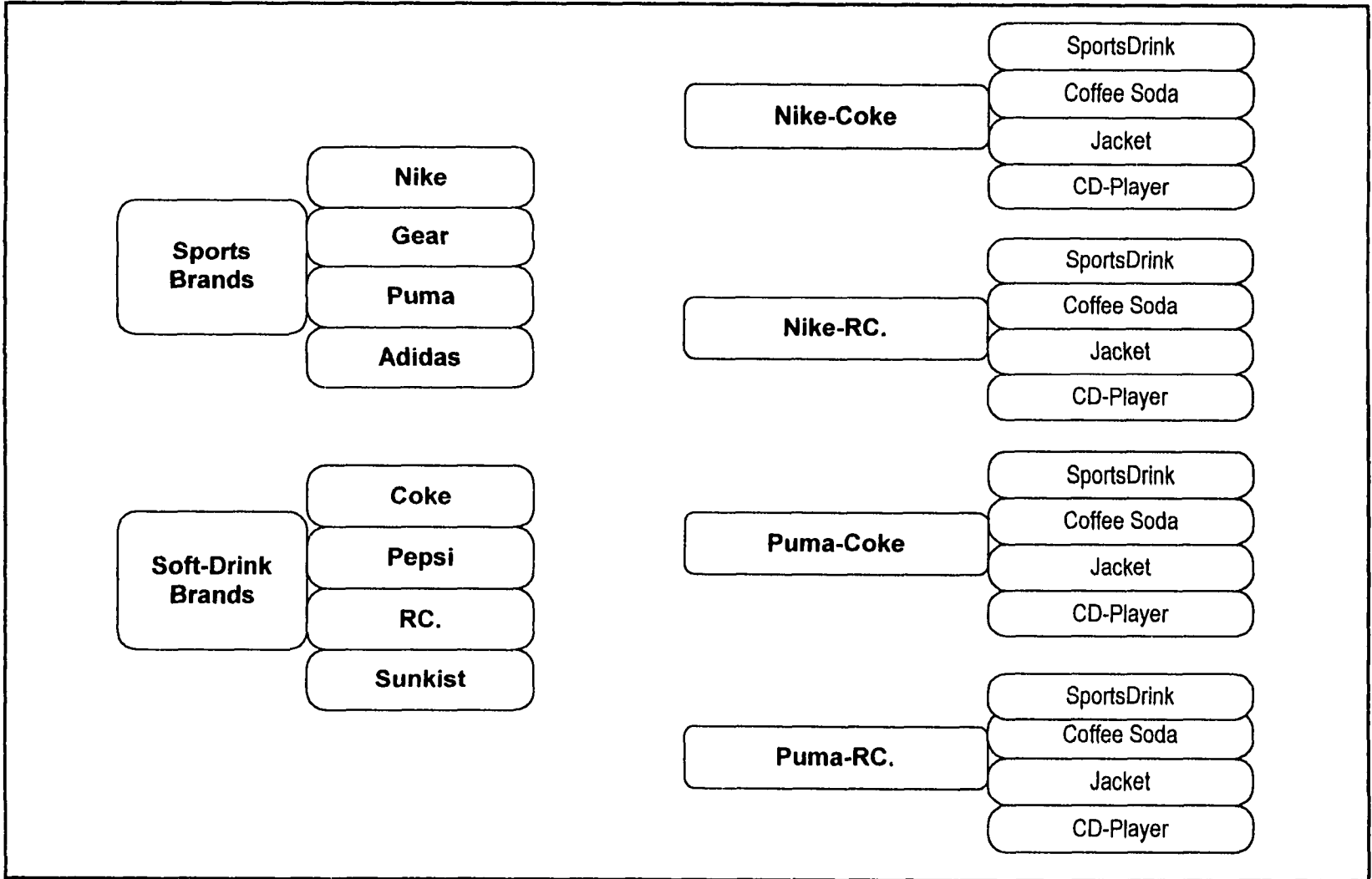
Extension Evaluation) is only partially supported. The coefficient γ_{21} was hypothesized to be positive. Based on the less restricted model, the estimated coefficient is positive ($\gamma_{21}=0.06$), but as suggested by its corresponding t-value, ($t=1.77$) this coefficient is significant at higher level of alpha ($p<0.08$).

In addition, while hypothesis, H_{5a} , (FitA \Rightarrow Extension Evaluation) stated that coefficient γ_{22} is zero the estimated coefficient ($\gamma_{22}=0.06$) and its t-value ($t=1.66$) suggests, at least partially, that the hypothesis is not supported. Further explanation about the partial support of hypotheses H_{4a} and H_{5a} and their implications will be offered after assessing the generalizability of the proposed model.

5.5. GENERALIZABILITY OF THE MODEL

The generalizability of the model was assessed with a replication study. Following procedures similar to the ones used in the main study, data were gathered from different respondents, utilizing a different set of brands and different cobranding extensions. Brands and products used in the second study were identified during pre-testing using the procedures described in Chapter 4. Specifically, a second data set ($n=368$) was obtained by evaluating cobranding extensions based on the soft drinks-sports category (see Table 4.1 and Figure 4.1). The brand pairs and the hypothetical cobranding extensions for the replication study are presented in Figure 5.2.

Figure 5.2
Hypothetical Cobranding Extensions for the Replication Study



5.5.1. The Replication Study

Data for the replication study were gathered from 188 respondents. Respondents were undergraduate students in a large urban university. As in the case of the first study, each participant evaluated two cobranding extensions. Four of the returned questionnaires were excluded from further analysis due to excessive missing data. The remaining 184 usable questionnaires resulted in a sample of $(184 \times 2 =) 368$ observations. As in the case of the main study, before fitting the model, preliminary analysis was performed to assess the level of familiarity of the respondents with the set of brands, featured in the present study. As expected, the level of familiarity was adequate ($X_{(NIKE)}=6.23$, $X_{(COKE)}=4.95$, $X_{(PUMA)}=6.74$, $X_{(R.C)}=4.52$). In addition, because each participant has evaluated two cobranding extensions, an ANOVA test was performed again to detect possible order effects. The F-value for order ($F=0.89$) and the F-value for the first level interaction (order x extension, $F=1.78$) indicate that no order effects exist.

5.5.2. Results for the Replication Study

The proposed model and the hypotheses were tested using exactly the same procedures used in the main study. The correlation matrix used as input for the analysis is presented in Table 5.6.

TABLE 5.6
Means, Standard Deviations and Correlations of the Observed Variables of the Replication Study

Variables	Y₁	Y₂	Y₃	Y₄	X₁	X₂	X₃	X₄	X₅	X₆	X₇	X₈	X₉	X₁₀
Means	2.859	2.791	3.264	2.535	4.984	4.983	3.179	3.106	3.337	3.459	3.092	3.049	4.943	4.919
S.D	1.633	1.632	1.572	1.659	1.379	1.272	2.180	2.144	1.543	1.630	2.010	2.035	1.644	1.438
OvrFit Y ₁	1.000													
OvrFit Y ₂	.888**	1.000												
ExtEvl Y ₃	.719**	.714**	1.000											
ExtEvl Y ₄	.761**	.770**	.693**	1.000										
QualA X ₁	.022	-.019	.119*	.072	1.000									
QualA X ₂	.050	.010	.170**	.106*	.850**	1.000								
FitA X ₃	.413**	.360**	.419**	.364**	.210**	.202**	1.000							
FitA X ₄	.419**	.362**	.431**	.349**	.204**	.200**	.948**	1.000						
BraFit X ₅	.453**	.417**	.455**	.380**	.149**	.147**	.113*	.124*	1.000					
BraFit X ₆	.446**	.404**	.366**	.374**	.140**	.173**	.075	.103*	.864**	1.000				
FitB X ₇	.460**	.463**	.401**	.407**	.017	.009	.037	.030	.167**	.207**	1.000			
FitB X ₈	.475**	.478**	.417**	.408**	-.002	-.005	.020	.012	.187**	.222**	.950**	1.000		
QualB X ₉	.132*	.075	.186**	.164**	.041	.019	-.022	.002	.245**	.259**	.225**	.216**	1.000	
QualB X ₁₀	.129*	.103*	.207**	.173**	-.009	.074	-.015	.013	.211**	.240**	.224**	.225**	.856**	1.000

** significant at p<.01, *significant at p<.05.
n=368

The measures display good levels of reliabilities (see Table 5.7). In addition, factor loadings, t-values, and a series of chi-square difference significance tests [$X^2_{d1}=72.57$ ($\Phi_{FitA, FitB}$), $X^2_{d1}=64.82$ ($\Phi_{FitA, BrandFit}$), and $X^2_{d1}=49.09$ ($\Phi_{FitB, BrandFit}$)] provide support for both convergent and discriminant validity (Anderson and Gerbing 1988; Bagozzi and Philips 1982).

Table 5.7
Reliabilities of Latent Constructs for the Replication study*

Scale	# of Items	Mean	S.D	Reliability
Overall Fit	2	5.65	3.17	.94
Extension Evaluation	2	5.79	2.97	.82
Quality of Brand A (QualA)	2	9.97	2.54	.91
Fit with Brand A (FitA)	2	6.29	4.27	.97
Brand Fit	2	6.80	3.06	.92
Fit with Brand B FitB	2	6.14	3.99	.97
Quality of Brand B (QualB)	2	8.82	2.97	.92

*(n=368)

5.5.3. Goodness of Fit

Summary results for the goodness of fit statistics for the proposed and the competing models of the replication study are presented in Table 5.8. An examination of the fit indices suggests that the proposed model overall has an acceptable goodness of fit. Although the goodness of fit of the competing (less restrictive) model is good, as suggested by the corresponding values of AGFI, PGFI, PNFI, and the chi-square difference test ($X^2_{d3}=4.95$), the proposed model has a better parsimonious fit.

Table 5.8
Fit Indices for the Proposed and the Competing Models
of the Replication Study*

Statistic - Fit Index	Restricted Proposed Model	Less Restricted Competing Model
	Absolute Fit	
Degrees of Freedom	61	58
Chi-square	175.96	171.01
p-value	0.00	0.00
Degrees of Freedom (null)	91	91
Chi-square (null)	4949	4949
p-value (null)	0.00	0.00
RMR	0.030	0.035
Standardized RMR	0.030	0.035
RMSEA	0.06	0.07
GFI	0.94	0.94
AGFI	0.90	0.89
	Comparative Fit	
NFI	0.96	0.97
NNFI	0.96	0.96
CFI	0.98	0.98
IFI	0.98	0.98
RFI	0.95	0.95
	Parsimonious Fit	
PGFI	0.55	0.52
PNFI	0.65	0.62

* n=368, chi-squared difference test ($X^2_{d3}=4.95$)

Table 5.9
Coefficient Estimates for the Proposed and Competing Models of the Replication Study

Hypotheses	Structural Paths Expected			Proposed Model		Competing Model		Support
				Coefficients	t-value	Coefficients	t-value	
H ₁	Overall Fit	+	Extension Evaluation	$\beta_{21} = 0.80$	20.85	$\beta_{21} = 0.75$	15.15	Yes
H _{2a}	Fit with Brand A	+	Overall Fit	$\gamma_{12} = 0.37$	9.85	$\gamma_{12} = 0.36$	9.43	Yes
H _{2b}	Fit with Brand B	+	Overall Fit	$\gamma_{14} = 0.42$	10.72	$\gamma_{14} = 0.42$	10.57	Yes
H ₃	Brand Fit	+	Overall Fit	$\gamma_{13} = 0.36$	8.43	$\gamma_{13} = 0.36$	8.33	Yes
H _{4a}	Quality of Brand A	+	Extension Evaluation	$\gamma_{21} = 0.11$	3.60	$\gamma_{21} = 0.09$	3.00	Yes
H _{4b}	Quality of Brand B	+	Extension Evaluation	$\gamma_{25} = 0.09$	3.09	$\gamma_{25} = 0.09$	2.97	Yes
H _{5a}	Fit with Brand A	0	Extension Evaluation	$\gamma_{22} = 0$	N.A.	$\gamma_{22} = 0.07$	2.33	No*
H _{5b}	Fit with Brand B	0	Extension Evaluation	$\gamma_{24} = 0$	N.A.	$\gamma_{24} = 0.02$	0.57	Yes
H _{5c}	Brand Fit	0	Extension Evaluation	$\gamma_{23} = 0$	N.A.	$\gamma_{23} = 0.02$.069	Yes

*The value of t=2.33 suggests that the coefficient γ_{22} is statistically different than zero, disconfirming H_{5a}.

5.5.4. Hypothesized Relationships

Hypothesized relationships, path coefficients, and their corresponding t-values for the replication study are presented in Table 5.9. Taken collectively, these results provide support for the proposed model. Coefficient estimates and the imposed constraints ($\gamma_{22}=\gamma_{23}=\gamma_{24}=0$) in estimating the proposed model provide support for all the nine hypotheses. On the other hand, coefficient estimates based on the competing model, which accounts for direct effects between FitA, FitB, Brand Fit, and the extension evaluation (γ_{22} , γ_{24} , γ_{23} are free to be estimated) provide support only for the eight out of the nine hypotheses. Specifically, hypothesis H_{5a} predicts that FitA has no direct effects on the extension evaluation. However, the t-value ($t=2.33$) of coefficient $\gamma_{22}=0.07$ suggests that γ_{22} is different from zero, hence, disconfirming hypothesis H_{5a} , that coefficient γ_{22} is zero.

5.6. AN OVERVIEW OF BOTH STUDIES.

The proposed model was tested and validated by means of two independent data sets. After considering findings from both studies, empirical support was found for the proposed model and the generalizability of the model has been supported. The similarity of findings between the two studies is important, and provides support in assessing the generalizability of the model.

Table 5.10
Summary Findings for the Main and Replication Studies

Hypotheses	Hypothesized Relationships Structural Paths			Main Study		Replication Study	
				Proposed Model (PM1)	Competing Model (CM1)	Proposed Model (PM2)	Competing Model (CM2)
H ₁	Overall Fit	$\beta_{21} > 0$ ⇔	Extension Evaluation	Supported	Supported	Supported	Supported
H _{2a}	Fit with Brand A	$\gamma_{12} > 0$ ⇔	Overall Fit	Supported	Supported	Supported	Supported
H _{2b}	Fit with Brand B	$\gamma_{14} > 0$ ⇔	Overall Fit	Supported	Supported	Supported	Supported
H ₃	Brand Fit	$\gamma_{13} > 0$ ⇔	Overall Fit	Supported	Supported	Supported	Supported
H _{4a}	Quality of Brand A	$\gamma_{21} > 0$ ⇔	Extension Evaluation	Supported	Not Supported	Supported	Supported
H _{4b}	Quality of Brand B	$\gamma_{25} > 0$ ⇔	Extension Evaluation	Supported	Supported	Supported	Supported
H _{5a}	Fit with Brand A	$\gamma_{22} = 0$ ⇔	Extension Evaluation	Supported	Supported	Supported	Not Supported
H _{5b}	Fit with Brand B	$\gamma_{24} = 0$ ⇔	Extension Evaluation	Supported	Supported	Supported	Supported
H _{5c}	Brand Fit	$\gamma_{23} = 0$ ⇔	Extension Evaluation	Supported	Supported	Supported	Supported

Table 5.10 presents the hypothesized relationships and summarizes findings for the main and the replication studies. Based on the proposed models from both studies (PM1 for the main study, PM2 for the replication study), results show that all of the nine hypotheses tested are supported. However, based on the competing models, results are slightly different. Specifically, the competing model of the main study (CM1) provides support for eight hypotheses and no support for hypothesis H_{4a} (Quality of Brand A \Rightarrow Extension Evaluation). On the other hand, the competing model (CM2) of the replication study provides support for eight hypotheses and no support for hypothesis H_{5a} ((FitA \Rightarrow Extension Evaluation).

A superficial examination of the combined results reported in the Table 5.10 may lead to the false conclusion that there are differences between the findings of the main and the replication studies. However, a closer examination of the reported results reveals that findings from the main and the replication studies provide evidence pointing to the same direction, toward supporting H_{4a} and disconfirming H_{5a} .

Specifically, the partial support provided by the main study for the hypothesis H_{4a} ($t= 1.77$, $p<0.10$) was reinforced by the full support found for the same hypothesis in the replication study ($t=3.60$, $p<0.05$). On the other hand, the partial disconfirmation provided by the main study for the hypothesis H_{5a} ($t=1.66$, $p<0.10$) was reinforced by the full disconfirmation for that hypothesis by the replication study ($t=2.33$, $p<0.01$).

5.6.1. Fitting a Modified Model

The results from both the main and the replication studies suggest that the coefficient γ_{22} (FitA \Rightarrow Extension Evaluation) is positive depicting direct effect between FitA and the extension evaluation. To capture these effects, a modified model was fitted to the data with γ_{22} free to be estimated. Thus, the only difference between the proposed and the modified models is that the modified model accounts for direct effects between FitA and Extension Evaluation, whereas in the proposed model, as stated in hypothesis H_{5a}, no such effects exists.

The decision to modify the proposed model was based on the reported results and on theoretical considerations. Modifying any model to get better fit serves no purpose unless adding or dropping a parameter has meaning and can be justified theoretically (Mueller 1996). In the present case, what motivated the decision to free the parameter γ_{22} was not to get a better goodness of fit for the model, but rather to account for an effect that is theoretically plausible. The goodness of fit of the modified model is no better than the goodness of fit of the proposed model (see Tables 5.3, 5.8 and 5.11).

In addition, the positive effect of FitA has been documented in brand extension research (Keller 1998). It is worthwhile to verify the competing hypothesis by testing it with a model that accounts for direct effects between FitA and the Extension Evaluation.

Table 5.11
Fit Indices for the Modified Model of the Main and Replication Studies*

Statistic - Fit Index	Main Study Modified Model (MM1)	Replication Study Modified Model (MM2)
	Absolute Fit	
Degrees of Freedom	60	60
Chi-square	144.81	171.61
p-value	0.00	0.00
Degrees of Freedom (null)	91	91
Chi-square (null)	3235.85	4949.00
p-value (null)	0.00	0.00
RMR	0.031	0.032
Standardized RMR	0.031	0.032
RMSEA	0.080	0.068
GFI	0.92	0.94
AGFI	0.85	0.90
	Comparative Fit	
NFI	0.96	0.97
NNFI	0.96	0.97
CFI	0.97	0.98
IFI	0.97	0.98
RFI	0.93	0.95
	Parsimonious Fit	
PGFI	0.52	0.54
PNFI	0.63	0.64

* n_1 (main study) =228, n_2 (replication study) =368.

Table 5.12
Coefficient Estimates for the Modified Model of the Main and the Replication Studies

Hypotheses	Structural Paths Expected			Modified Model (MM1)		Modified Model (MM2)		Support
				Coefficients	t-value	Coefficients	t-value	
H ₁	Overall Fit	+	Extension Evaluation	$\beta_{21} = 0.75$	14.81	$\beta_{21} = 0.78$	19.36	Yes
H _{2a}	Fit with Brand A	+	Overall Fit	$\gamma_{12} = 0.23$	4.62	$\gamma_{12} = 0.36$	9.46	Yes
H _{2b}	Fit with Brand B	+	Overall Fit	$\gamma_{14} = 0.42$	8.41	$\gamma_{14} = 0.42$	10.70	Yes
H ₃	Brand Fit	+	Overall Fit	$\gamma_{13} = 0.39$	7.34	$\gamma_{13} = 0.36$	8.44	Yes
H _{4a}	Quality of Brand A	+	Extension Evaluation	$\gamma_{21} = 0.06$	1.72	$\gamma_{21} = 0.06$	3.15	Partial*
H _{4b}	Quality of Brand B	+	Extension Evaluation	$\gamma_{25} = 0.14$	3.55	$\gamma_{25} = 0.15$	3.40	Yes
H _{5a}	Fit with Brand A	0	Extension Evaluation	$\gamma_{22} = 0.06$	1.66	$\gamma_{22} = 0.06$	2.14	Partial**
H _{5b}	Fit with Brand B	0	Extension Evaluation	$\gamma_{24} = 0$	N.A.	$\gamma_{24} = 0.01$	NA.	Yes
H _{5c}	Brand Fit	0	Extension Evaluation	$\gamma_{23} = 0$	N.A.	$\gamma_{23} = -0.03$	NA.	Yes

* support comes only from the replication study.

**support comes only from the main study.

Table 5.11 presents alternative fit indices for the modified models (MM1 for the main study and MM2 for the replication study). The reported indices suggest that both modified models (MM1 and MM2) have adequate goodness of fit.

Table 5.12 presents the hypothesized relationships, the estimated coefficients, and the corresponding t-values for the modified models of the main and the replication studies. Results from the main study provide support for eight of the nine hypotheses. While hypothesis H_{4a} is not supported the magnitude of the corresponding t-value ($t=1.72$, $p<0.10$) suggests that the coefficient γ_{21} is positive. Results from the replication study offer support for eight of the nine hypotheses and no support for the hypothesis H_{5a} . Whereas it was hypothesized that the coefficient γ_{22} is zero the corresponding t-value ($t=2.14$, $p<0.05$) indicates that this is not the case.

5.7. SUMMARY

This chapter presented the data analysis and reported the results of the main and replication studies designed to fit the model and test the hypotheses developed in Chapter 3. Results obtained by fitting the modified model are not different from the results obtained by the proposed model. Table 5.13 presents the standardized solutions for the proposed and the modified models for both studies. The consistency among these solutions is important in assessing the generalizability of the model.

The results of hypothesis testing are summarized in Table 5.14. Overall, the findings provide evidence for supporting the proposed model. These findings and the mixed results related to hypotheses H_{4a} (Fit A \Rightarrow Extension Evaluation), and H_{5a} (Quality of Brand A \Rightarrow Extension Evaluation) are discussed further in Chapter 6.

Table 5.13
Results of Hypothesis Testing

	Hypotheses	Main Study	Replication Study
H ₁	The higher the level of overall fit between the cobrand and the cobranding extension, the higher the evaluation of the extension.	Supported	Supported
H _{2a}	The higher the level of fit, between Brand "A" and the extension (Fit A), the higher the level of the overall fit.	Supported	Supported
H _{2b}	The higher the level of fit, between Brand "B" and the extension (Fit B), the higher the level of the overall fit.	Supported	Supported
H ₃	The higher the level of brand fit, between the two constituent brands, the higher the level of the overall fit.	Supported	Supported
H _{4a}	The higher the quality of Brand "A", the higher the evaluation of the extension.	Not Supported	Supported
H _{4b}	The higher the quality of Brand "B", the higher the evaluation of the extension.	Supported	Supported
H _{5a}	The level of fit between Brand "A" and the extension (Fit A) has no direct effect in evaluating the extension.	Supported	Not Supported
H _{5b}	The level of fit between Brand "B" and the extension (FitB) has no direct effect in evaluating the extension.	Supported	Supported
H _{5c}	The level of brand fit has no direct effect in evaluating the extension.	Supported	Supported

Table 5.14
Standardized Solution for the Proposed and the Modified Models*

Estimated Coefficient/ Loading	Main Study		Replication Study	
	Proposed Model (PM1)	Modified Model (MM1)	Proposed Model (PM2)	Modified Model (MM2)
Measurement Model (Y's)				
λ^y_{11}	.94	.95	.95	.94
λ^y_{21}	.97	.97	.94	.94
λ^y_{32}	.88	.88	.83	.83
λ^y_{42}	.92	.92	.86	.86
Measurement Model (X's)				
λ^x_{11}	.98	.99	.88	.88
λ^x_{21}	.82	.81	.96	.97
λ^x_{32}	.97	.98	.97	.98
λ^x_{42}	.95	.95	.97	.97
λ^x_{53}	.95	.95	.94	.93
λ^x_{63}	.92	.92	.92	.93
λ^x_{74}	.96	.96	.96	.96
λ^x_{84}	.99	.99	.99	.99
λ^x_{95}	.91	.91	.94	.94
λ^x_{105}	.94	.94	.91	.91
Structural Model				
β_{21}	.83	.80	.92	.88
γ_{12}	.25	.24	.39	.37
γ_{13}	.39	.39	.35	.36
γ_{14}	.43	.43	.43	.43
γ_{21}	.08	.07	.11	.10
γ_{22}	.00	.07	.00	.07
γ_{23}	.00	.00	.00	.00
γ_{24}	.00	.00	.00	.00
γ_{25}	.15	.15	.10	.11

*The modified model was estimated with the coefficient γ_{22} free.

CHAPTER 6

DISCUSSION

This chapter begins with a brief discussion of the key findings emphasizing the major contribution of the study. The chapter then discusses the theoretical and managerial implications of the results. Finally, the chapter concludes with a discussion of the limitations of the study and suggestions for future research.

6.1. OVERALL CONTRIBUTION OF THE STUDY

The purpose of this study was to develop a model for evaluating cobranding extensions. Cobranding was positioned as a case of brand extension, on one hand, and as a conceptual combination, on the other. Thus, drawing from previous research on brand extensions and integrating elements from the conceptual combination literature, a conceptual model for evaluating cobranding extensions is proposed. Taken collectively, the reported results provide support for the proposed conceptual model. Specifically, the results of the main study, in conjunction with the results of the replication study, demonstrate the effects of both the fit and the quality of each brand in evaluating cobranding extensions.

The objective of this study was to propose a model that is consistent with the conceptual framework used previously in evaluating brand extensions. A second objective was to develop a model that can be used to study other types

of cobranding extensions. At the same time, the model should be relevant and useful when evaluating concrete cases of cobranding extensions. Meeting both of these objectives increases both the theoretical contribution and the managerial relevance of the study.

6.1.1. Overall Fit Construct

Both objectives of this study were met by incorporating into the model the Overall Fit construct. Overall fit was defined as the fit between the cobrand and the cobranding extension. Given the two constituent brands involved in the cobranding extension, with their individual images and other associations, overall fit is a measure of how well the newly formed conceptual combination (the cobrand) accommodates the cobranded product. This conceptualization is different from the Simonin and Ruth (1998) model, which does not incorporate such a variable into their model.

The overall fit construct, in combination with the abstract but simple scales used to measure all the latent variables incorporated into the model, makes the proposed model fully comparable to, and compatible with, the previously used conceptual framework for evaluating brand extensions. The proposed model provides a unified conceptual framework and offers researchers guidelines to study both single and cobranding extensions. Thus, it is possible to highlight similarities and differences among different types of cobranding strategies suggesting further research.

The first key finding and contribution of this study is the empirical support for the existence of the overall fit construct and its effect in evaluating cobranding extensions. Thus, the introduction of overall fit is the cornerstone of the proposed model and the most important contribution of the study. The fact that the replication study provided evidence of the existence of direct effects between FitA and the evaluation of the extension (see Table 5.12, H_{5a}) does not detract from the overall contribution of the study. In developing the model, it was hypothesized that there are no direct effects between FitA and the evaluation of the cobranding extension. This position was taken after reviewing the conceptual combination literature and introducing overall fit as a variable of the model in order to capture the fit between the cobranding extension and the cobrand. As demonstrated by the decomposition of the total effects of each of the latent variables (see Table 6.1), the direct effect of FitA on the extension evaluation is significant, but its magnitude is relatively small in proportion to the total effect.

Table 6.1
Direct and Indirect Effects of Constructs on the Extension Evaluation

Latent Construct	Main Study			Replication Study		
	Direct	Indirect	Total	Direct	Indirect	Total
QualA	.06	-	.06	.09	-	.09
FitA	.07	.17	.24	.07	.28	.35
Brand Fit	-	.29	.29	-	.28	.28
FitB	-	.31	.31	-	.33	.33
QualB	.14	-	.14	.10	-	.10
Overall Fit	.75	-	.75	.78	-	.78

6.1.2. Brand Fit Construct

A second finding of the study was the empirical evidence supporting the effects of the brand fit construct. Brand fit captures the fit between the two (or more) brands involved in the cobranding extension. Drawing only from the previous brand extension research, one might infer that, for a given level of quality, when FitA and FitB are high, the evaluation of the extension will be high. However, results show that brand fit has a significant indirect effect on the evaluation of the cobranding extension. When evaluating cobranding extensions, consumers consider both the image of component brands and their overall compatibility. A good brand fit has a positive effect on the evaluation of the cobranding extension by enhancing the consistency of the cobrand. Good brand fit also will reinforce positively the image of the brands involved in the extension.

Findings from both studies are consistent with previous research that examined the fit between the brand concept and the extension, as opposed to the similarity between the extension and other products of the brand (Park et al. 1991). Park and his co-authors demonstrated that a function-oriented brand (e.g., Timex) could successfully extend into categories such as batteries, calculators, and smoke detectors. On the other hand, a prestige-oriented brand (such as Rolex) could successfully extend into categories such as grandfather clocks, bracelets, and rings. In the case of Rolex, high brand concept consistency compensates for any low feature-similarity through the prestige-oriented

extensions. In the case of Timex, high feature-similarity compensates for the functionally oriented extensions.

When a cobrand is seen as incongruent, consumers may activate a causal or attributional search (Folkes 1988). Should consumers feel that the brands involved in the extension are unfairly attempting to capitalize on their reputation or to limit competition to command higher prices, the consumers will experience reactance (Brehm 1966). Comments made by respondents during the pre-testing stages of this research are consistent with that point. When they were asked to evaluate possible cobranding extensions introduced by incongruent brands (i.e., Coke-Pepsi), they questioned the motives and the rationale of such actions by these brands.

6.1.3. Effects of Brand Quality

A third finding is the effect of quality of the brands used to name the cobranding extension. Consistent with previous research in brand extensions, both the main and the replication studies provide support for hypotheses H_{4a} and H_{4b}. Thus, the higher the quality of each of the two brands, the higher the evaluation of the extension. However, as suggested by the coefficient estimates and the corresponding t-values of the results of the main and the replication studies (see Table 5.10 and Table 5.12), the role played by the quality of each of the constituent brands in evaluating the cobranding extensions is different. This finding, in combination with the mixed results about FitA (H_{5a}), carries with it major theoretical and managerial implications and poses some interesting

questions for further consideration. For example, explaining why the quality of each brand has a different effect on the evaluation of the cobranding extension will provide a better understanding of the phenomenon. From the managerial point of view, assessment of the quality effects of each brand would provide managers valuable information for developing criteria for choosing and evaluating potential partner brands.

The next section discusses the theoretical implications of the study with an emphasis on the major findings identified above.

6.2. THEORETICAL IMPLICATIONS

Branding strategies can be classified based on two criteria: (1) the number of products involved, and (2) the number of brands featured in each strategy (see Figure 6.1).

Figure 6.1
Classification of Different Branding Strategies

		Number of Brands	
		One	Two or More
Number of Products	One	Single Brand Extensions	Cobranding Composite Brand Extensions Ingredient Branding Component Branding
	Two or More	Product Bundling	Brand Bundling Dual Branding Co-Promotions Advertising Alliances

These, different types of branding strategies, have been studied by academic researchers. However, no effort has yet been made to unify findings under a common conceptual framework. In light of increased deployment and utilization of branding strategies involving more than one brand (Shocker et al. 1994; Samu et al. 1999), there is a need for a more comprehensive model of branding and branding strategies.

6.2.1. Common Framework

An advantage of the proposed model is that it is abstract enough to be used in studying different types of cobranding strategies. Examples include ingredient or component branding (Norris 1993; Simonin and Ruth 1998), composite brand extensions (Park et al. 1996), co-promotions and advertising alliances (Samu et al. 1999), brand bundling (Rao et al. 1999), and dual branding (Levin et al. 1996). Furthermore, unlike previous research (cf. Hillyer and Tikoo 1995), the model does not distinguish between a primary and a secondary brand. Thus, the model is flexible enough to account for any asymmetry effects that may arise from such a distinction between the primary and secondary brand. The proposed model provides the base for studying all the alternative strategies presented in Figure 6.1 under a common conceptual framework.

The common conceptual framework will make it possible to organize existing knowledge better, unify alternative streams of research, examine similarities and differences among alternative cobranding strategies, and allow researchers to ask more interesting and complex questions. This should open

new avenues for further research in the area of branding, brand equity, and brand management.

6.2.2. Asymmetry Effects

Results reported in the present study raise some additional questions concerning the role of the fit of each of the two constituent brands (FitA and FitB) involved in the extensions. The empirical results provide support for the total effects that each of these two constructs has on the extension evaluation. However, FitA had a small but significant direct effect whereas FitB did not exhibit such an effect (see Table 6.1). It was hypothesized that no direct effects exist. Hence, one would expect that results for the two brands would be symmetric. It seems that when two brands are combined to form a cobrand, the role of each brand is different. This asymmetry is an interesting finding that deserves additional consideration.

According to the conceptual combination literature, a composite concept formation is based on combining a header and a modifier concept. However, the totality (the conceptual combination) may be different from the sum of its parts (Hampton 1987; Murphy 1988; Murphy and Medin 1985). In the case of adjective-noun combinations, the rules determining the role of each concept are clear. The noun is the header and the adjective the modifier. However, in the case of noun-noun combinations which of the two concepts is the header and which the modifier is not directly determinable. This, in turn, has different implications for how one understands and interprets a newly formed noun-noun

conceptual combination. For example, while grammatically *corn oil* and *baby oil* are similar conceptual combinations of two nouns, the meaning of each combination is different. Corn oil is oil made from corn but nobody interprets baby oil as oil made from babies. It seems that in the case of noun–noun combinations, the rules of interpretation go beyond the characteristics of each of the two constituent nouns (Murphy 1990).

Given that cobrands are combinations between nouns, the meaning of the cobrand depends on the individual characteristics of each brand and the folk theories employed by consumers when they evaluate brand coherence (Murphy and Medin 1985). For example, is the Coke–Nike sport drink primarily a Coke product or a Nike product? Furthermore, what would be the outcome if the order of naming the extension changes from Coke-Nike to Nike-Coke?

Research on the nature of categorization of concepts suggests that definition and understanding of a concept depend on a set of core salient attributes (Eysenck and Keane 1990). When one concept is combined with another, these attributes influence the meaning of the composite concept. Therefore, highly salient attributes of the header concept will not be affected by the less salient attributes of the modifier. In contrast, if attributes of the modifier are more salient than those of the header, the composite concept will be influenced more by the attributes of the modifier (Murphy 1988).

As stated in Section 6.2.1, the model gives equal treatment to both brands. This offers the opportunity to study alternative branding strategies from a

theoretical point of view. This may be a limitation because a full decomposition of the contribution of each brand to capture potential asymmetry effects is not possible.

6.2.3. Crossing the Bridge

Students of categorization and conceptual combinations will find this study relevant to their work. Specifically, the findings from both studies reported here are consistent with previous results in categorization and conceptual combination research. The empirical test of the overall fit hypothesis (H_1), its antecedents and the rationale process behind it, provide support for Murphy and Medin's (1985) point that categorization may extend through processes other than feature similarity.

6.3. MANAGERIAL IMPLICATIONS

Brand managers have long understood the value of brands and the effects of different branding strategies on brand equity (Aaker 1991, 1996). The ability to build and maintain strong brand equity depends to some extent on maintaining consistency in brand communications (cf. Keller 1993; Park et al. 1986). In the case of brand extensions based on one brand, the challenge is to choose the product category for the brand extension. For cobranding, there is the added need to choose the right partner brand(s). A wrong partner selection might lead not only to a failure of the cobranding extension, but also might dilute the brand equity of one or more brands involved in the extension. Given the recent increase

in cobranding activities (Spethmann and Benezra 1994), the model developed in the present study offers managers a framework for choosing cobranding strategies and other cooperative activities.

The results of the study show that the higher the fit between the cobrand and the cobranding extension, the higher the consumer evaluation of that extension. Since fit can have different bases (Tauber 1988) managers should develop programs that make existing bases of fit more salient or that generate new ones. For example, the Orvis edition of Jeep exhibits the outdoor activities image associated with the Orvis brand. This image can be made more salient by an advertising campaign or other promotional program, featuring both brands in such settings.

Consumers may be able to recognize the benefits to be derived from the association of each brand with the product featured in the cobranding extension. However, they may at the same time have difficulty recognizing the value of the association of one brand with another (low brand fit). This is crucial because when consumers do not see the connection between the pair, a potential incongruity will have a neutral, or even negative, effect on the evaluation of the cobranding extension. Earlier research suggests that consumers will attempt to resolve any incongruity by using other information that might be available (Meyers-Levy and Tybout 1989). Thus, supporting cobranding extensions with advertising or promotional campaigns that emphasize not only the advantage of the product, but also how the two brands fit together, would result in a better evaluation. Although originally some respondents questioned a possible

cobranded sport drink by Coke and Nike, their concerns are reduced when they were told that both Coke and Nike are global brands that sponsor many sport related events.

Cobranding also can be used to access up-scale or down-scale markets by associating one brand with other brands of different image or different degrees of exclusivity. Thus, by "showing who your friends are, customers will know who you are." Such a strategy includes risks and should be exercised with caution (Aaker 1997). However, in some cases cobranding can be used to overcome market barriers and accelerate the positioning of a brand. The Coach limited edition of Lexus is an example of how Lexus tried to minimize its Japanese origin and association with Toyota. As a result Lexus was able to establish itself as a luxury brand and gain acceptance by customers within the up-scale segment.

A managerial question not directly addressed by this study is the issue of brand ordering in naming the cobranding extension. Further research is needed to fully answer this question. The differential effects of the role of the quality of the partner brands and the role of FitA suggest specific ordering of the brand names. Careful ordering is needed when the partner brands have different levels of fit with the product featured in the extension. When they are of different quality, the evaluation will be better if the brand with the higher fit appears first in the cobrand name and the brand name associated with higher quality appears second. It seems that when consumers evaluate cobranding extensions they

associate the product more with the first brand and consider the second brand an endorsement.

6.4. LIMITATIONS

Although the real brands and the hypothetical extensions utilized in the study were relevant to a student population, a replication study utilizing a sample of targeted consumers will be a positive step in assessing the generalizability of the proposed model.

In addition, while the validity of the model was assessed through two independent studies in two different contexts, the hypothetical extensions used in the main and the replication studies were examples of composite brand extension. The applicability of the model should be tested in other settings representing different cobranding strategies, such as ingredient and component branding, dual branding, brand bundling, co-promotions, and advertising alliances.

Finally, the internal validity of the model can be assessed with a series of experimental studies to clarify specific questions generated by this study. Particularly important are: (1) possible interactions between the latent constructs incorporated in the model, and (2) the order of brands in naming the cobranding extension. Whereas the model does not distinguish between a primary (header) brand and a secondary (modifier) brand, studying the specific questions

generated by such a distinction will clarify many of the questions that remain unanswered by the present study.

The next section addresses these limitations and presents some additional ideas for future research.

6.5. FUTURE RESEARCH

6.5.1. Interaction Effects between Fit and Quality

Given the complexity of the cobranding phenomenon and the difficulty of identifying appropriate stimuli, this study ignored possible interactions among the factors affecting the evaluation of cobranding extensions. Of particular interest is the possible interaction between quality and fit of each of the constituent brands. This interaction is suggested by the differential effects of the quality of each of the two partner brands and the mixed results about the effects of fit between the extension and Brand "A" (FitA). For example, is it possible to compensate for poor fit with enhanced quality, or poor quality with better fit? Answers to this question are not only important from the theoretical point of view, but also would be useful to managers when evaluating candidate brands to identify partners with desirable characteristics.

6.5.2. Name Order Effects

Another relevant question not addressed by this research is the effect of the order of brands used to name the cobranding extension. For example, does

the Nike-Coke sports drink receive different evaluation than does the Coke-Nike sport drink? If, as suggested by the conceptual combination literature, the order of brands in naming the cobranding extension influences consumer perception of the cobranding extension, then the conceptual combination literature can be used to make predictions. This research also can examine whether the familiarity of each brand should be a factor in determining the order of brands in naming the extension.

6.5.3. Cobranding Extensions Based on More than Two Brands

The typology of brand extensions presented in Chapter 2 (see Figure 2.2) classifies brand extensions in two major categories: First, single extensions based on only one brand, and second, cobranding extensions based on two or more core brands. The present study considered cobranding extensions in two different contexts with both the main and the replication studies using cobranding extensions based only on two brands. However, the generalizability and the robustness of the model should be explored further under more expansive cobranding strategies. For example, cobranding extensions involving more than two partners, such as Sony Visa by Citibank, or the Motorola Skytel Internet Messenger by Timex, need to be addressed.

6.5.4. Bundling

Bundling has been defined as the practice of marketing two products or services in a single package for a special price. While it need not be the case, a

bundle usually includes a primary product and a less expensive tie-in product. For example, a Compaq computer is bundled with a Compaq printer, or a Compaq computer with a Canon printer. As this example demonstrates, bundling always involves at least two products. The number of brands featured in a bundle can be one or more. When evaluating product bundles featuring more than one brand, marketers have to consider not only the products involved in the bundle, but also the potential impact of each brand in the bundle.

6.5.5. Dual Branding

Dual branding is a relatively new phenomenon. The term is used to define “relationships” among retailers sharing a single location (*Nation's Restaurant News* 1994). This strategy is increasingly popular in the fast food industry where a number of franchised chains have formed alliances and created dual brands or other forms of multiple brands (Levin et al. 1996). A dual branding strategy offers franchisees potential benefits such as cost sharing and increased traffic. However, the alliance of one brand with another may create problems for the brands involved in such a strategy. If there is not a good fit between the lines of products offered by the allies or if the image of one brand is not consistent with the other (low brand fit), potential customers may question the motives of such a strategy, thereby causing dilution of brand equity. The agreement between Sears and Jiffy Lube illustrates the point. This alliance offered Jiffy Lube the chance to expand its operations to new locations, and gave a chance to Sears to shore up

its reputation in light of consumer fraud scandals reported in 1992 (Paterson 1995).

6.5.6. Reciprocity Effects

As demonstrated by research in brand extensions, reciprocity effects are well documented (Buchanan, Simmons and Bickart 1999; Gurhan-Canli, and Maheswaran 1998; Loken and Roeder John 1993; Milberg et al. 1997). In the case of single brand extensions, the issue is the positive or negative impact (spillover effects) of the extension on the core brand. In the case of cobranding, the question is similar, but more complex, because cobranding extensions involve at least two brands. Are there any factors that can moderate spillover effects? How does advertising and other information about cobranding affect each of the constituent brands? Does negative publicity for one of the partners affect the other?

A first step in understanding reciprocity effects was taken by Simonin and Ruth (1998). The authors found that consumers' attitudes toward the brand alliance influences subsequent attitudes toward the constituent brands. In addition, they found that spillover effects do not affect the partners equally, but depend on the familiarity of each partner. Two areas of possible reciprocity effects that need further consideration are Overextension and Ownership effects.

6.5.6.1. Overextension

In line with research on brand extensions that over-extending may cause dilution of brand equity, it will be interesting to examine the effects of over-extension in the case of cobranding. In the case of single extensions, over-extension means that a single brand is extended into many products. Cobranding over-extension can be distinguished into two different types.

First, overextension occurs when the cobrand extends into many products. That is, when the brand partners use the cobrand as a name to introduce products in many, different product categories. Second, overextension can be caused by either of the partners. That is, one brand may overextend by forming partnerships with many different partners. For example, Intel formed partnerships with many computer manufacturers. Although, in the short term the association with Intel may facilitate growth and sales for each of the partner brands, the long-term impact of such a relationship on the host brand may be negative. Brands associated with Intel may lose their distinctive identities by turning into a commodity. The comments made by a Compaq top executive that the "Intel Inside detracts from the Compaq brand " (Johnson 1994) demonstrates that this is a serious managerial concern.

6.5.6.2. Branded Product Ownership Effects

Ownership has many psychological dimensions that might affect consumers' motivation and reactions toward the brand (Beggan 1992). Thus, the reaction of current brand owners to cobranding extensions, and the feedback of

their attitudes about the cobrand (dilution or enhancement), to each of the constituent brands needs further consideration. The basic proposition is that current brand owners will respond differently from non-owners to a cobranding extension, because owners, in general, have a higher level of involvement and a more favorable attitude toward brands of which they own a product.

Specifically, owners of a branded product will react differently if the status of the owned product is different from the status of the partner brand. Owners may have more to gain or lose than do non-owners and this may evoke a different reaction. For example, current owners of Ford Explorer cars react more abruptly to the recent news about problems associated with Firestone, than do non-owners or owners of other car brands.

6.5.7. To Be Endorsed or to Endorse

It may also be worthwhile for future research to explore the possibility of applying the proposed model in other areas related to brand management. For example, the present model might be useful in selecting a celebrity to endorse a brand and also in selecting an event to be endorsed by a brand.

Ideally, a celebrity endorser should be a highly visible and credible character with a rich set of association (McCracken 1989). In addition, the set of associations and the image of the celebrity should be compatible with the image of the brand. When the celebrity has already endorsed other products, the proposed model can help answer the additional question of whether the two brands and the celebrity fit together.

Using the same rationale, the model can offer insights in selecting an event to be sponsored by the brand. The question in this case is whether the image of the brand is consistent with the set of associations projected by the event itself, and whether the brand fits with other endorsers. The managerial question in this case is whether to associate a brand with other brands through sponsorship of an event sponsored by those other brands.

6.6. TOWARDS A RICHER CONCEPTUAL FRAMEWORK

The primary goal of this dissertation was to develop a conceptual framework for evaluating different types of cobranding strategies. As a first step, this goal was achieved. The proposed model was based primarily on previous research in brand extensions (drawing on categorization theory) and the conceptual combination literature. However, as suggested by Cohen and Chakravarti (1990), a better understanding of the market place phenomena requires integrating elements from other behavioral theories. The conceptual framework used in this study can be enriched further by integrating in it parts from information integration theory, inference making, attribution, and signaling literatures. Such a theoretical development would be a significant step for practitioners, researchers, and academics to completely understand cobranding and other branding strategies.

6.7. SUMMARY

The aim of this research was to develop a conceptual model for evaluating cobranding extensions. Positioning cobranding as a brand extension, on one hand, and as a conceptual combination, on the other, this dissertation offers a theoretical framework and a conceptual model to study cobranding extensions and other branding strategies. In addition, the study offers an interesting methodology for testing the model and presents empirical evidence in support of the proposed model. The reported results increase understanding of the cobranding phenomenon and the factors considered in evaluating cobranding extensions. However, as with much other research, this dissertation, and some of the results in particular, has generated a series of new questions. These questions offer new opportunities for additional research and exciting intellectual journeys in the area of cobranding and brand equity. The answers to research questions and the future research suggested in this chapter not only will enhance the theoretical understanding of cobranding and other related branding strategies but also will offer managers a useful framework to better manage their brands.

APPENDICES

APPENDIX A

BRAND SURVEY

PART A: Please indicate on a scale, from 1(not at all familiar) to 7 (very familiar), the level of your familiarity with the following brands. In the provided space write one or more products related to the corresponding brand.

		Not at all Familiar							Very Familiar	Products
		1	2	3	4	5	6	7		
1.	IBM								_____	
2.	Packard Bell								_____	
3.	Dell								_____	
4.	Compaq								_____	
5.	Acer								_____	
6.	Micron								_____	
7.	Gateway								_____	
8.	Goldstar								_____	
9.	Toshiba								_____	
10.	Sharp								_____	
11.	Sony								_____	
12.	Sanyo								_____	
13.	RCA								_____	
14.	Philips								_____	
15.	Puma								_____	
16.	Nike								_____	
17.	Adidas								_____	
18.	L A Gear								_____	
19.	Pepsi								_____	
20.	RC								_____	
21.	Coke								_____	
22.	Sunkist								_____	

PART B: Please indicate on a scale, from 1 (low quality) to 7 (high quality), the level of the overall quality of each of the following brands. If you don't know or if you cannot make a judgment because you are not familiar with the brand please circle the "X" in the last column.

		Low Quality						High Quality	Don't Know
		1	2	3	4	5	6	7	
1.	IBM								X
2.	Packard Bell								X
3.	Dell								X
4.	Compaq								X
5.	Acer								X
6.	Micron								X
7.	Gateway								X
8.	Goldstar								X
9.	Toshiba								X
10.	Sharp								X
11.	Sony								X
12.	Sanyo								X
13.	RCA								X
14.	Philips								X
15.	Puma								X
16.	Nike								X
17.	Adidas								X
18.	L A Gear								X
19.	Pepsi								X
20.	RC								X
21.	Coke								X
22.	Sunkist								X

THANK YOU FOR YOUR PARTICIPATION

APENDIX C

BARUCH COLLEGE
PRELIMINARY STUDY

COMPAQ is currently planning to expand the range of its products by introducing new products under its brand name. Before these products are introduced, **COMPAQ** would like to know how consumers react to them. Please consider carefully the products in the following list. For products that you might not be familiar with, a small description is provided.

1. **TV-COMPUTER**. The TV-COMPUTER offers a whole set of new capabilities by combining the computing power of a computer, with the audio and video capabilities of a TV set.
2. **VIDEO GAME SYSTEM**. The VIDEO GAME SYSTEM is very simple. The only thing the user has to do is to connect it to a television set.
3. **COFFEE MAKER**. The COFFEE MAKER is a sophisticated programmable coffee maker. The user has the ability to program the coffee maker from the previous night as well as the brewing temperature. An optional alarm can be activated as soon as the coffee is ready.
4. **VIDEO-PHONE**. The VIDEO-PHONE operates like any other phone. In addition a small screen and a camera attached to it made it possible to send and receive not only sound but also live images.
5. **JUICER/BLENDER**.
6. **POCKET CALCULATOR**
7. **SOFTDRINK**
8. **MICROWAVE OVEN**
9. **PRINTER**
10. **CD-PLAYER**

If you want to participate in the study, please turn to the next page.

Partial credit will be given for your participation.

Below is the list of potential products to be introduced by COMPAQ. Your task is to **rank order them on the basis of how much sense** it makes for COMPAQ to introduce each product. For example if toothpaste was in the list and you believe that it makes the most sense for COMPAQ to introduce toothpaste instead of some other product, put toothpaste down as number one. Give rank of 2 to the product that makes the next most sense and so on. Please note that **there is no right or wrong order**. Only your opinion counts.

- | | |
|--------------------------------|--------------------------------|
| 1. COMPAQ JUICER/BLENDER | 6. COMPAQ CD-PLAYER |
| 2. COMPAQ VIDEO PHONE | 7. COMPAQ SOFTDRINK |
| 3. COMPAQ POCKET
CALCULATOR | 8. COMPAQ VIDEO GAME
SYSTEM |
| 4. COMPAQ COFFEE MAKER | 9. COMPAQ VIDEO-PHONE |
| 5. COMPAQ MICROWAVE OVEN | 10. COMPAQ PRINTER |

Use the first column for a preliminary ordering. Then if you want to make any changes, do them, by presenting the new and final order in the second column.

1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____
9. _____	9. _____
10. _____	10. _____

THANK YOU FOR YOUR PARTICIPATION

APPENDIX D

SURVEY QUESTIONNAIRE FOR THE MAIN STUDY

Appendix D presents a copy of one of the versions of the questionnaire used in the main study. As stated in the methodology (Chapter 4, section 4.3.1) each respondent evaluated only two of the sixteen hypothetical cobranding extensions used in the main study. Thus, a total of eight different versions of the questionnaire were utilized.

The wording and the instructions in all the different versions were identical. The only difference was the different brand names and products used in each version.

The present version corresponds to the evaluation of two products (Printer and Television-Computer) introduced jointly by the COMPAQ- SONY brand pair.

BARUCH COLLEGE

CONSUMER BRAND & PRODUCT SURVEY

Welcome to the brand and product survey. Please read the instructions on this page carefully before going to the next page.

INSTRUCTIONS

The purpose of this survey is to obtain your opinions and reactions to some proposed product offerings by different companies. Before introducing these products nationally these companies would like to know how consumers react to them.

On the next pages, you will be asked some questions about some brands and some products that may introduce by these brands. Consider each question or statement carefully and then circle the number that best describes your opinion. Be aware that there are not right or wrong choices. Only your opinion counts.

Please work through this booklet sequentially. Answer the questions in the order they appear in the questionnaire. Please take the time and the effort to answer all the questions.

Thank you for your participation

CONSUMER BRAND AND PRODUCT SURVEY

PART I: A number of companies want to know consumers' opinions and reactions, as well as their attitudes toward different brands and potential new products. Please consider the following brands and products and then circle the number that best describes your opinion. Take as much time as you need when considering each brand and its products.

First, consider the **COMPAQ** brand name and then answer the following questions or statements.

1. How familiar are you with the Compaq brand?

Not at all									Very
Familiar	1	2	3	4	5	6	7		Familiar

2. In terms of Quality the Compaq Brand is:

Inferior									Superior
	1	2	3	4	5	6	7		

3. New products to be introduced by Compaq will be:

Low									High
Quality	1	2	3	4	5	6	7		Quality

4. How logical is it for Compaq to introduce a TELEVISION-COMPUTER?

Not at all									Very
Logical	1	2	3	4	5	6	7		Logical

5. How much sense does it make for Compaq to introduce a TELEVISION-COMPUTER?

No Sense									Very much
at all	1	2	3	4	5	6	7		Sense

6. In terms of Quality the Compaq TELEVISION-COMPUTER will be:

Low									High
Quality	1	2	3	4	5	6	7		Quality

7. Assuming you are in the market for a TELEVISION-COMPUTER, how likely is it that you would consider purchasing the Compaq TELEVISION-COMPUTER?

Not at all									Very
Likely	1	2	3	4	5	6	7		Likely

8. How logical is it for Compaq to introduce a PRINTER?
 Not at all
 Logical 1 2 3 4 5 6 7 Very Logical
9. How much sense does it make for Compaq to introduce a PRINTER?
 No Sense
 at all 1 2 3 4 5 6 7 Very much Sense
10. In terms of Quality the Compaq PRINTER will be:
 Low
 Quality 1 2 3 4 5 6 7 High Quality
11. Assuming you are in the market for a PRINTER, how likely is it that you would consider purchasing the Compaq PRINTER?
 Not at all
 Likely 1 2 3 4 5 6 7 Likely Very

Now, consider the **SONY** brand name and then answer the following questions or statements.

12. How familiar are you with the Sony brand?
 Not at all
 Familiar 1 2 3 4 5 6 7 Very Familiar
13. In terms of Quality the Sony Brand is:
 Low
 Quality 1 2 3 4 5 6 7 High Quality
14. New products to be introduced by Sony will be:
 Low
 Quality 1 2 3 4 5 6 7 High Quality
15. How logical is it for Sony to introduce a TELEVISION-COMPUTER?
 Not at all
 Logical 1 2 3 4 5 6 7 Very Logical
16. How much sense does it make for Sony to introduce a TELEVISION-COMPUTER?
 No Sense
 at all 1 2 3 4 5 6 7 Very much Sense

17. In terms of Quality the Sony TELEVISION-COMPUTER will be:
 Low Quality 1 2 3 4 5 6 7 High Quality
18. Assuming you are in the market for a TELEVISION-COMPUTER, how likely is it that you would consider purchasing the Sony TELEVISION-COMPUTER?
 Not at all Likely 1 2 3 4 5 6 7 Very Likely
19. How logical is it for Sony to introduce a PRINTER?
 Not at all Logical 1 2 3 4 5 6 7 Very Logical
20. How much sense does it make for Sony to introduce a PRINTER?
 No Sense at all 1 2 3 4 5 6 7 Very much Sense
21. In terms of Quality the Sony PRINTER will be:
 Low Quality 1 2 3 4 5 6 7 High Quality
22. Assuming you are in the market for a PRINTER, how likely is it that you would consider purchasing the Sony PRINTER?
 Not at all Likely 1 2 3 4 5 6 7 Very Likely

Please turn to the next page

PART II. In an attempt to establish successful relationships, companies want to identify brands that have image compatible with their own. Their objective is to introduce new products as a team. Thus, **Compaq and Sony formed a partnership to jointly introduce new cobranded products.** Please consider the Compaq -Sony brand-pair and then respond to the following questions:

23. How logical is it for Compaq and Sony to **jointly** introduce different cobranded products?
 Not at all
 Logical 1 2 3 4 5 6 7 Very Logical

24. How much sense does it make for Compaq and Sony to **jointly** introduce different cobranded products?
 No Sense
 at all 1 2 3 4 5 6 7 Very much Sense

The first product of interest is a PRINTER. Please consider the **Compaq - Sony PRINTER** and then respond to the following questions:

25. How logical is it for Compaq and Sony to **jointly** introduce a PRINTER?
 Not at all
 Logical 1 2 3 4 5 6 7 Very Logical

26. How much sense does it make for Compaq and Sony to **jointly** introduce a PRINTER?
 No Sense
 at all 1 2 3 4 5 6 7 Very much Sense

27. In terms of Quality the Compaq - Sony PRINTER will be:
 Low
 Quality 1 2 3 4 5 6 7 High Quality

28. Assuming you are in the market for a PRINTER, how likely is it that you would consider purchasing the Compaq - Sony PRINTER?
 Not at all
 Likely 1 2 3 4 5 6 7 Very Likely

Another product of interest is a **Compaq - Sony TELEVISION-COMPUTER**. Please consider the Compaq - Sony TELEVISION-COMPUTER and then respond to the following questions:

29. How logical is it for Compaq and Sony to **jointly** introduce a TELEVISION -
COMPUTER?
Not at all
Logical 1 2 3 4 5 6 7 Very
Logical
30. How much sense does it make for Compaq and Sony to **jointly** introduce a
TELEVISION -COMPUTER?
No Sense
at all 1 2 3 4 5 6 7 Very much
Sense
31. In terms of Quality the Compaq - Sony TELEVISION -COMPUTER will be:
Low
Quality 1 2 3 4 5 6 7 High
Quality
32. Assuming you are in the market for a TELEVISION -COMPUTER, how likely is
it that you would consider purchasing the Compaq - Sony TELEVISION -
COMPUTER?
Not at all
Likely 1 2 3 4 5 6 7 Likely Very

THANK YOU FOR YOUR PARTICIPATION

APPENDIX E

THE MATRICES OF THE LISREL MODEL

1. The Structural Model¹

$$\eta = B\eta + \Gamma\xi + \zeta$$

$$\begin{pmatrix} \eta_1 \\ \eta_2 \end{pmatrix} = \begin{pmatrix} 0 & 0 \\ \beta_{21} & 0 \end{pmatrix} \begin{pmatrix} \eta_1 \\ \eta_2 \end{pmatrix} + \begin{pmatrix} 0 & \gamma_{12} & \gamma_{13} & \gamma_{14} & 0 \\ \gamma_{21} & \gamma_{22} & \gamma_{23} & \gamma_{24} & \gamma_{25} \end{pmatrix} \begin{pmatrix} \xi_1 \\ \xi_2 \\ \xi_3 \\ \xi_4 \\ \xi_5 \end{pmatrix} + \begin{pmatrix} \zeta_1 \\ \zeta_2 \end{pmatrix}$$

2. Measurement Model for the Y

$$Y = \Lambda_y \eta + \varepsilon$$

$$\begin{pmatrix} Y_1 \\ Y_2 \\ Y_3 \\ Y_4 \end{pmatrix} = \begin{pmatrix} \lambda_{11} & 0 \\ \lambda_{21} & 0 \\ 0 & \lambda_{32} \\ 0 & \lambda_{42} \end{pmatrix} \begin{pmatrix} \eta_1 \\ \eta_2 \end{pmatrix} + \begin{pmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \varepsilon_3 \\ \varepsilon_4 \end{pmatrix}$$

3. Measurement Model for X

$$X = \Lambda_x \xi + \delta$$

$$\begin{pmatrix} X_1 \\ X_2 \\ X_3 \\ X_4 \\ X_5 \\ X_6 \\ X_7 \\ X_8 \\ X_9 \\ X_{10} \end{pmatrix} = \begin{pmatrix} \lambda_{11} & 0 & 0 & 0 & 0 \\ \lambda_{21} & 0 & 0 & 0 & 0 \\ 0 & \lambda_{32} & 0 & 0 & 0 \\ 0 & \lambda_{42} & 0 & 0 & 0 \\ 0 & 0 & \lambda_{53} & 0 & 0 \\ 0 & 0 & \lambda_{63} & 0 & 0 \\ 0 & 0 & 0 & \lambda_{74} & 0 \\ 0 & 0 & 0 & \lambda_{84} & 0 \\ 0 & 0 & 0 & 0 & \lambda_{95} \\ 0 & 0 & 0 & 0 & \lambda_{105} \end{pmatrix} \begin{pmatrix} \xi_1 \\ \xi_2 \\ \xi_3 \\ \xi_4 \\ \xi_5 \end{pmatrix} + \begin{pmatrix} \delta_1 \\ \delta_2 \\ \delta_3 \\ \delta_4 \\ \delta_5 \\ \delta_6 \\ \delta_7 \\ \delta_8 \\ \delta_9 \\ \delta_{10} \end{pmatrix}$$

¹ For the proposed model elements γ_{22} , γ_{23} , γ_{24} were fixed to zero depicting no direct effects between the latent constructs ξ_2 , ξ_3 , ξ_4 and η_2 .

4. The Covariance Matrix of the Latent Constructs ξ

$$\Phi = \begin{pmatrix} \Phi_{11} & & & & \\ \Phi_{21} & \Phi_{22} & & & \\ \Phi_{31} & \Phi_{32} & \Phi_{33} & & \\ \Phi_{41} & \Phi_{42} & \Phi_{43} & \Phi_{44} & \\ \Phi_{51} & \Phi_{52} & \Phi_{53} & \Phi_{54} & \Phi_{55} \end{pmatrix}$$

5. The Covariance matrix of ζ

$$\Psi = \begin{pmatrix} \Psi_{11} & \\ \Psi_{21} & \Psi_{22} \end{pmatrix}$$

6. The Covariance matrix of ε (errors in the measurement model of Y's)

$$\Theta_{\varepsilon} = \text{diag}(\theta^{\varepsilon}_{11}, \theta^{\varepsilon}_{22}, \theta^{\varepsilon}_{33}, \theta^{\varepsilon}_{44})$$

7. The Covariance matrix of δ (errors in the measurement model of X's)

$$\Theta_{\delta} = \text{diag}(\theta^{\delta}_{11}, \theta^{\delta}_{22}, \dots, \theta^{\delta}_{1010})$$

For identification purposes the following constraint was employed:

$$\lambda^y_{11} = \lambda^y_{32} = \lambda^x_{11} = \lambda^x_{32} = \lambda^x_{53} = \lambda^x_{74} = \lambda^x_{95} = 1.00$$

APPENDIX F

THE LISREL SOLUTION

The Lisrel Estimates for the Proposed (PM) and the Modified (MM) Models

Estimated Coefficient*	Main Study		Replication Study	
	Proposed Model (PM1)	Modified Model (MM1)	Proposed Model (PM2)	Modified Model (MM2)
Measurement Model				
λ^y_{11}	1.00	1.00	1.00	1.00
λ^y_{21}	1.03 (31.89)	1.03 (31.81)	0.99 (33.95)	0.99 (33.93)
λ^y_{32}	1.00	1.00	1.00	1.00
λ^y_{42}	1.05 (19.10)	1.05 (19.16)	1.04 (19.39)	1.03 (19.42)
λ^x_{11}	1.00	1.00	1.00	1.00
λ^x_{21}	0.83 (6.54)	.81 (6.25)	1.09 (10.18)	1.10 (9.76)
λ^x_{32}	1.00	1.00	1.00	1.00
λ^x_{42}	0.98 (18.58)	0.97 (18.87)	1.00 (29.56)	0.99 (30.02)
λ^x_{53}	1.00	1.00	1.00	1.00
λ^x_{63}	0.97 (16.07)	0.97 (16.08)	0.99 (18.23)	0.99 (18.24)
λ^x_{74}	1.00	1.00	1.00	1.00
λ^x_{84}	1.04 (29.80)	1.04 (29.81)	1.04 (32.65)	1.04 (32.64)
λ^x_{95}	1.00	1.00	1.00	1.00
λ^x_{105}	1.03 (14.17)	1.03 (14.19)	0.97 (11.92)	0.97 (12.12)

*t-values are printed under the coefficient.

**The Lisrel Estimates for the Proposed (PM) and the Modified (MM) Models
(Continued)**

Estimated Coefficient*	Main Study		Replication Study	
	Proposed Model (PM1)	Modified Model (MM1)	Proposed Model (PM2)	Modified Model (MM2)
Structural Model				
β_{21}	0.77 (6.03)	0.75 (14.81)	0.80 (20.85)	.78 (19.36)
γ_{12}	0.24 (4.76)	0.23 (4.62)	0.37 (9.85)	0.36 (9.46)
γ_{13}	0.39 (7.34)	0.39 (7.34)	0.36 (8.43)	0.36 (8.44)
γ_{14}	0.42 (8.40)	0.42 (8.41)	0.42 (10.72)	0.42 (10.70)
γ_{21}	0.07 (2.00)	0.06 (1.72)	.11 (3.60)	0.09 (3.15)
γ_{22}	0.0	0.06 (1.69)	0.0	0.06 (2.14)
γ_{23}	.00	.00	.00	.00
γ_{24}	.00	.00	.00	.00
γ_{25}	0.14 (3.54)	0.14 (3.55)	0.09 (3.09)	0.10 (3.31)
Φ_{11}	0.97 (5.72)	0.99 (5.57)	0.78 (7.61)	0.77 (7.41)
Φ_{21}	0.23 (3.35)	0.22 (3.30)	0.19 (3.76)	0.19 (3.71)
Φ_{22}	0.95 (9.14)	0.96 (9.25)	0.95 (12.06)	0.96 (12.16)
Φ_{31}	0.18 (2.74)	0.18 (2.76)	0.14 (2.94)	0.14 (2.93)

*t-values are printed under the coefficient.

**The Lisrel Estimates for the Proposed (PM) and the Modified (MM) Models
(Continued)**

Estimated Coefficient*	Main Study		Replication Study	
	Proposed Model (PM1)	Modified Model (MM1)	Proposed Model (PM2)	Modified Model (MM2)
Φ_{32}	0.21 (3.24)	0.22 (3.24)	0.11 (2.09)	0.10 (2.06)
Φ_{33}	0.90 (8.60)	0.90 (8.61)	0.87 (10.41)	0.87 (10.40)
Φ_{41}	0.12 (1.84)	0.12 (1.85)	0.00 (-0.07)	0.00 (-0.07)
Φ_{42}	0.27 (4.06)	0.27 (4.05)	0.02 (0.36)	0.02 (0.37)
Φ_{43}	0.16 (2.45)	0.16 (2.45)	0.20 (3.88)	0.20 (3.89)
Φ_{44}	0.92 (9.53)	0.92 (9.53)	0.91 (11.85)	0.91 (11.85)
Φ_{51}	0.15 (2.36)	0.15 (2.41)	0.03 (0.74)	0.04 (0.76)
Φ_{52}	0.15 (2.36)	0.15 (2.36)	-0.01 (-0.14)	-0.01 (-0.19)
Φ_{53}	0.32 (4.78)	0.32 (4.78)	0.24 (4.64)	0.24 (4.64)
Φ_{54}	0.34 (5.08)	0.34 (5.09)	0.21 (4.21)	0.22 (4.21)
Φ_{55}	0.83 (7.91)	0.84 (7.93)	0.88 (8.73)	0.88 (8.80)
Ψ_{11}	0.40 (8.90)	0.40 (8.91)	0.40 (10.94)	0.40 (10.92)
Ψ_{21}	0.12 (4.92)	0.12 (4.89)	0.05 (2.32)	0.05 (2.29)

*t-values are printed under the coefficient.

**The Lisrel Estimates for the Proposed (PM) and the Modified (MM) Models
(Continued)**

Estimated Coefficient*	Main Study		Replication Study	
	Proposed Model (PM1)	Modified Model (MM1)	Proposed Model (PM2)	Modified Model (MM2)
θ^{ϵ}_{11}	0.11 6.27	0.11 6.18	0.11 (7.03)	0.11 (6.99)
θ^{ϵ}_{22}	0.05 3.41	0.05 3.33	0.12 (7.76)	0.12 (7.52)
θ^{ϵ}_{33}	0.24 7.79	0.24 7.74	0.33 (10.59)	0.33 (10.53)
θ^{ϵ}_{44}	0.16 5.69	0.16 5.85	0.28 (9.49)	0.29 (9.65)
θ^{δ}_{11}	0.03 0.25	0.01 0.08	0.22 (2.95)	0.23 (2.94)
θ^{δ}_{22}	0.33 3.23	0.35 3.30	0.07 (0.85)	0.06 (0.70)
θ^{δ}_{33}	0.05 1.09	0.04 0.87	0.05 (1.79)	0.04 (1.59)
θ^{δ}_{44}	0.09 2.05	0.10 2.34	0.05 (1.92)	0.06 (2.20)
θ^{δ}_{55}	0.10 2.22	0.10 2.21	0.13 (2.96)	0.13 (3.00)
θ^{δ}_{66}	0.15 3.36	0.15 3.37	0.15 (3.50)	0.14 (3.46)
θ^{δ}_{77}	0.08 3.09	0.08 3.08	0.09 (3.56)	0.09 (3.55)
θ^{δ}_{88}	0.01 0.46	0.01 0.47	0.01 (0.50)	0.01 (0.50)
θ^{δ}_{99}	0.17 3.12	0.16 3.08	0.12 (1.70)	0.12 (1.78)
θ^{δ}_{1010}	0.11 2.00	0.11 2.05	0.17 (2.52)	0.17 (2.53)

*t-values are printed under the coefficient.

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