THREE ESSAYS: AFFECT TRANSFER, NETWORK EFFECTS AND MARKET VALUATION OF BRAND EXTENSIONS

A dissertation submitted to the Kent State University Graduate School of Management in partial fulfillment of the requirements for the degree of Doctor of Philosophy

By

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July 2007
ACKNOWLEDGEMENTS

I wish to express my gratitude to my advisor, Dr. Michael Y. Hu, for his continuous guidance, great ideas, and encouragement. I would like to thank him for all his efforts over the last four years to mentor me in my graduate study. The completion of this dissertation would not be possible without his support.

Special thanks are also extended to my committee members. I am indebted to Dr. Pamela E. Grimm for patiently reviewing and correcting my manuscripts. I am also very grateful to Dr. Robert D. Jewell and Dr. Murali Shanker by providing constructive comments and rigorous feedback.

I also would like to thank my parents and my husband for their supports to this journey. I am endlessly thankful for the love and beliefs they have in me.
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ABSTRACT

Brand extension allows a firm to leverage its current brand equity in its new product introduction. This study addresses three key issues in brand extensions: consumer affect transfer process, the impact of extension products on the parent brand equity and the stock market valuation of brand extensions.

Essay 1 examines how brand affect is transferred from the parent product to the extension product. The congruency framework (expectancy and relevancy) is used to explain the affect transfer process. Results of three experimental studies suggest that both factors positively influence this process and the largest amount of affect is transferred when both conditions are met.

Essay 2 addresses the network effects in brand extensions. The theory of network externalities from economics is used to explain the reciprocal network effects from the extension products to the umbrella brand. The study posits that three characteristics of the extension products’ portfolio influence the parent brand equity: the portfolio size, the similarity among products in a portfolio and the presence of the attribute compatibility. Experimental findings firmly support these prescribed effects.

Essay 3 assesses the stock market responses to the brand extension announcements and compares with two related strategies: line extension and brand alliances. The magnitude of the responses is the largest for brand alliances, moderate for brand extensions and the minimal for line extensions.
CHAPTER 1
INTRODUCTION

1.1 Background

As a company’s most valuable asset, a good brand costs money and years to build. Meanwhile, high failure rates dramatically increase the cost of new product introduction. Brand extensions provide an alternative to enter a new product category with an established brand, leveraging the current brand equity. As a strategy for new product introduction, brand extension has gained in popularity ever since 1960 (Kim and Sullivan 1998). Major advantages of brand extensions include reduced risk (Kapferer 1992) and increased marketing efficiency.

Brand extension has received much attention in academia since the seminal work of Aaker and Keller (1990). A critical question is under what conditions the equity of the parent brand ($B_0$) can be leveraged in an extension product category ($P_e$). Studies have explored three aspects of this question: consumer evaluations of brand extensions (Aaker and Keller 1990; Broniarczyk and Alba 1994; Keller and Aaker 1992; Meyvis and Janiszewski 2004; Park, Milberg and Lawson 1991), the impact of brand extension on the parent brand (Balachander and Ghose 2003; Gurhan-Canli and Maheswaran 1998; John, Loken and Joiner 1998; Loken and John 1993; Swaminathan, Fox and Reddy 2001) and the market performance of brand extensions (Lane and Jacobson 1995; Rao, Agarwal and Dahohoff 2004; Smith and Park 1992).
Studies in different streams discuss key components of a brand extension’s success. To extend previous results, this study provides a picture of brand extensions from all three perspectives. The goal of the study is to identify important factors that influence brand extension performance from both the consumer’s and the firm’s perspective.

1.2 Study Outline

The study consists of three parts, providing insights into the issue of brand extensions from different aspects. The setting of brand extension has two components: parent branded product (B<sub>0</sub>P<sub>0</sub>) and extension product(s) P<sub>e</sub>. Essays 1 and 2 are complementary in addressing the issues related to brand extensions. The first explores the forward spillover effect from B<sub>0</sub>P<sub>0</sub> to P<sub>e</sub> and the second investigates the reciprocal spillover effect from P<sub>e</sub> (i=1 to n) to P<sub>e</sub>. Essay 3 links the brand extension strategy to shareholder value. The study compares three common strategies that companies use to launch new products with established brand(s): line extension, brand extension, and brand alliances. Figures 1.1 to 1.3 illustrate the research question structure of each essay.

Essay 1 examines the impact of B<sub>0</sub>P<sub>0</sub> on P<sub>e</sub> and focuses on the conditions such that consumers’ liking of B<sub>0</sub>P<sub>0</sub> can be transferred to P<sub>e</sub>. Literature has respectively examined two factors influencing how much consumers like B<sub>0</sub>P<sub>e</sub>: the relationship between P<sub>0</sub> and P<sub>e</sub> (Aaker and Keller 1990; Barone, Miniard and Romeo 2000; Zhang and Sood 2002) and the relationship between B<sub>0</sub> and P<sub>e</sub> (Bhat and Reddy 2001; Broniarczyk and Alba 1994; Meyvis and Janiszewski 2004; Park, Milberg and Lawson
Although studies provide empirical support for the both factors, few studies have integrated the two streams of literature.

Essay 1 develops an affect transfer framework summarizing two factors influencing consumers’ affect of B₀P₀ to be transferred to B₀Pₑ. The study shows that consumers favor the extension product when: 1) the extension product is highly expected and 2) the brand associations are meaningful in the Pₑ. The largest amount of affect is found to be transferred when both conditions are met.

Essay 2 addresses the impact of extension products on the parent brand. While Essay 1 involves single extension products, Essay 2 deals with the influence of a portfolio of extension products.

Essay 2 focuses on the reciprocal effect from the extension products to the umbrella brand. Most studies in this area address the impact of a single extension product on the parent brand (Balachander and Ghose 2003; Gurhan-Calin and Maheswaran 1998; John, Loken and Joiner 1998; Leong, Ang and Lain 1997; Loken and John 1993), and only quite a few addresses the portfolio impact (Dacin and Smith 1994; Meyvis and Janiszewski 2004). Essay 2 discusses three characteristics of an extension portfolio: the portfolio size, the similarity among products in a portfolio, and attribute compatibility.

The theory of network externalities (Katz and Shapiro 1985) is applied to explain changes in utilities of each product as the portfolio characteristics change. As each product is under the same brand name, such changes will be reflected in the umbrella’s brand equity. Essay 2 shows that attribute compatibility within the portfolio increases the umbrella brand equity. Moreover, this effect is enhanced when the portfolio similarity is high.
Essay 3 evaluates brand extension from the stock market perspective. The study examines the stock market responses to brand extensions, and compares the responses with two other closely related brand strategies: line extension and brand alliances. All three strategies leverage one or two established brands to introduce new products to the market. Therefore, firms are presented with three options for the new product launch. Essay 3 establishes the link between the three strategies and shareholder value. The market valuation model helps to identify firm-related characteristics influencing the link.
Bibliography


Figure 1.1

Essay One: Affect Transfer in Brand Extensions

Parent Branded Product ($B_3P_3$) → Brand Extension Product ($B_3P_3$)
Figure 1.2

Essay Two: Network Effects of Product Portfolio Characteristics on Parent Brand Equity
Figure 1.3
Essay Three: Market Valuation of Line Extension, Brand Extension and Brand Alliances
CHAPTER 2
ESSAY ONE
AFFECT TRANSFER IN BRAND EXTENSION: THE ROLE OF EXPECTANCY AND RELEVANCY

2.1 Introduction

Brand extension, as a company’s most frequently used branding strategy (Volckner and Sattler 2006), has received much attention in both academic and practitioner domains. A critical question is under what conditions the equity of the parent brand ($B_0$) can be leveraged in an extension product category ($P_e$). From a consumer’s perspective, leveraging brand equity means transferring the evaluation from the parent product ($B_0P_0$) to the extension product ($B_0P_e$). Studies have identified two types of fits in this transfer process: one is the fit between parent product and extension product ($P_0P_e$ fit), and the other is between parent brand and extension product ($B_0P_e$ fit).

In the first stream of literature, studies suggest that consumers evaluate extension products based on the relationship between the parent product and the extension product. A close relationship is usually preferred to a distant one. Two constructs measure the $P_0P_e$ relationship: perceived fit (Aaker and Keller 1990) and attribute similarity (Keller and Aaker 1992). In addition, several factors are also found to influence the link between the $P_0P_e$ fit and extension evaluations such as a consumer’s mood (Barone, Miniard and Romeo 2000) and age (Zhang and Sood 2002).
The other stream of literature emphasizes the \( B_0P_e \) fit. The \( B_0P_e \) fit can be formed between different aspects of a brand and the \( P_e \), such as the consistency between brand image and extension category image (Park, Milberg and Lawson 1991), the relevancy of a brand’s association with the extension category (Broniarczyk and Alba 1994; Bhat and Reddy 2001), and the accessibility-diagnosticity perspective of \( B_0 \) to \( P_e \) (Meyvis and Janiszewski 2004). Common to this stream of literature is that consumers favor brand extensions when the characteristics of the brand fit well with the extension category.

So far, the literature has explained the two types of fit separately. Few have examined both at the same time. To fill the gap, this study provides a framework that integrates both the \( P_0P_e \) fit and the \( B_0P_e \) fit. The framework is derived from the theory of schema-triggered affect in social cognition (Fiske, 1982; Fiske and Pavelchak 1986; Pavelchak 1989). The theory explains how people transfer their liking from one object to another. Applied to this study, the theory explains how the affect of \( B_0P_0 \) can be transferred to \( B_0P_e \).

In the following section, I shall review previous research in the area of brand extension and the affect transfer process. Next, I present a framework that integrates the two streams of literature and explains the affect transfer process in the context of brand extensions. Then I present three experiments to support the hypothesis. Finally, I draw a conclusion and discuss the limitations of the study.

2.2 Literature Review

For affect to transfer from \( B_0P_0 \) to \( P_e \), two routes are possible: one is from the parent product (\( P_0 \)) to the extension product (\( P_e \)), and the other is from the brand (\( B_0 \)) to
Congruency between two items facilitates the affect transfer from one to the other (Fiske 1982; Fiske and Pavelchak 1986). Congruency consists of two dimensions: expectancy and relevancy (Heckler and Childers 1992). Heckler and Childers (1992) suggests that expectancy captures the P₀Pₑ fit and influences the affect transfer from P₀ to Pₑ; meanwhile, relevancy captures the B₀Pₑ fit and has impact on the affect transfer from B₀ to Pₑ.

### 2.2.1 P₀Pₑ Fit

The first stream of literature highlights the P₀Pₑ fit with two constructs: perceived fit and attribute similarity. Perceived fit (Aaker and Keller 1990) consists of three dimensions: complement (how Pₑ is complementary to P₀), substitute (how Pₑ can substitute for P₀) and the transfer of a manufacturer’s expertise. Aaker and Keller (1990) shows that, among the three items, the transfer of manufacturing skills has a direct impact on extension evaluation, while complement and substitute interact with the manufacturing skills transfer to influence the extension evaluations. Overall, consumers favor B₀Pₑ when the perceived fit between P₀ and Pₑ is high. This concept is important and has been widely used in other related studies, such as marketing communications (Bridges, Keller and Sood 2000) and price premium of extension products (Delvecchio and Smith 2005).

Given the importance of the perceived fit in brand extension evaluations, several studies examine the generalizability of the construct (Bottomley and Doyle 1996; Bottomley and Holden 2001; Sunde and Brodie 1993). First, Sunde and Brodie (1993) replicates Aaker and Keller’s study (henceforth A&K)) and finds disparate result. Among
three dimensions of the perceived fit, their study only shows the influence of the substitute on the extension evaluations. Later, Aaker and Keller (1993) explains that the culture differences between two studies (U.S and New Zealand) can cause the difference.

In the realm of inquiry, replication studies continue in different countries and provide support for A&K’s study. Bottomley and Doyle (1996) replicates the A&K’s study in the UK. Their study agrees in a large part with A&K’s study, and extends its generalizability to the international environment. Further, a secondary data analysis of A&K’s study and seven other related replications also support a large part of the hypotheses from A&K’s study (Bottomley and Holden 2001). Therefore, perceived fit is a well-accepted construct in this area.

The other important concept measuring the $P_o P_e$ fit is attribute similarity. Attribute similarity is the degree of overlapping attributes between $P_o$ and $P_e$. Keller and Aaker (1992) suggests that consumers prefer similar extensions to dissimilar extensions, since similarity helps consumers link the performance of $P_o$ with $P_e$. In addition, researchers examine several factors moderating the positive relationship between attribute similarity and extension evaluations. These factors include a consumer’s mood (Barone, Miniard and Romeo 2000; Barone 2005) and age (Zhang and Sood 2002).

Barone et al. (2000) asserts that consumer’s mood moderates the linear relationship between similarity and extension evaluation. Mood here refers to internal emotions, such as happiness or sadness. Positive mood has the largest impact on the evaluation when the degree of similarity between $P_o$ and $P_e$ is at the middle level. As for
highly similar or dissimilar \( P_e \), the mood effect is low. Thus, the relationship between the mood impact and \( P_0P_e \) similarity is curvilinear.

Zhang and Sood (2002) expands the extension study to children. As children are not able to judge product similarity, they rely on the sound characteristics of \( P_e \) to form their evaluation (Zhang and Sood 2002). The study argues that children favor extension categories containing a rhyming name (e.g. Coca-Cola Cola) rather than a non-rhyming name (e.g. Coca-Cola Tea). Attribute similarity only influences adults when evaluating extensions.

In conclusion, studies in this stream highlight different types of fit between \( P_0 \) and \( P_e \). Generally, consumers favor extension products that fit well with \( P_0 \). A good fit between \( P_0 \) and \( P_e \) facilitates the transfer of consumer evaluation from \( B_0P_0 \) to \( B_0P_e \).

2.2.2 \( B_0P_e \) Fit

A second stream of the literature highlights the \( B_0P_e \) fit. A brand can be viewed as a collection of attributes (Keller 1993). To leverage its brand equity in \( P_e \), a brand needs attributes that fit well in \( P_e \). Researchers explore the \( B_0P_e \) fit based on different types of brand attributes such as brand image (Park, Milberg and Lawson 1991), brand benefit attributes (Broniarczyk and Alba 1994; Bhat and Reddy 2001), and brand breadth (Boush and Loken 1991; Mao and Krishnan 2006; Meyvis and Janiszewski 2004,).

First, Park, Milberg, and Lawson (1991) examines the role of brand image, suggesting that consumers favor the brand extension when there is consistency between a brand’s image and the extension product’s attributes. Their study tests the
consistency between two types of brand images and extension categories: a prestige-oriented brand/extension product category and a utilitarian-oriented brand/extension product category. Rolex, as a prestige brand, fits better into a prestige-oriented product than into a utilitarian-oriented product. A mismatch between the image of the brand and the extension product category results in unfavorable evaluations of $B_0P_e$.

Second, the concept of relevancy captures the relationship between the brand benefit associations and $P_e$ (Broniarczyk and Alba 1994). Relevancy refers to the importance of a brand’s benefit associations to an extension category. The study shows that Close-up, a toothpaste brand, is associated with a fresh feeling. This benefit attribute is important in the mouthwash category. Therefore, mouthwash is a high-relevance category for Close-up, and the brand will be favored in that category. A later study using hypothetical brands (Bhat and Reddy 2001) verifies the prominent role of a brand’s benefit associations in extension evaluations.

A third factor related to the $B_0P_e$ fit is the brand breadth of $B_0$. Two studies address the brand breadth with different theories: the typicality argument (Boush and Loken 1991) and the accessibility-diagnosticity argument (Meyvis and Janiszewski 2004). Boush and Loken (1991) suggests that brand breadth interacts with the similarity between $P_0$ and $P_e$ to influence $B_0P_e$ evaluations. The concept of typicality captures the interaction between brand breadth and the similarity. Typicality refers to the representativeness of an item to a category (Boush and Loken 1991). $P_e$ is considered a typical extension when consumers consider that $P_e$ well represents the category of $P_0$. Typicality is determined by a brand’s breadth and the $P_0P_e$ similarity (Boush and Loken 1991). Brand breadth indicates the range of products under a brand. For a narrow brand,
\( P_e \) is considered a typical extension when \( P_0 \) and \( P_e \) are highly similar. For a broad brand, \( P_e \) is considered a typical extension when the similarity between \( P_0 \) and \( P_e \) is low. For example, Campbell is a narrow yet deep brand offering different types of soup, while Heinz is a broad brand providing a wide range of foods from baby food to seasonings. Frozen vegetables, as a dissimilar extension to both categories, are considered more typical to the broad brand of Heinz than to the narrow brand of Campbell. Since consumers favor typical extensions, Heinz has advantages over Campbell in that dissimilar extension.

Categorization theory provides theoretical support for this typicality argument. A typical extension is processed in the same category as \( B_0P_0 \). Fisk and Pavelchak (1986) proposes that less cognitive effort is required for consumers to process new information in an existing category than in a new category. Therefore, consumers favor typical extensions as they facilitate the categorized information process.

Meyvis and Janiszewski (2004) explains the brand breadth effect using the accessibility-diagnosticity argument. Accessibility is the degree to which a piece of information can be retrieved from memory, while diagnosticity refers to the relevance of such information to the judgment (Feldman and Lynch 1988). The argument points out that when the degree of diagnosticity is the same, consumers use the most accessible information.

Consumers use two types of information to judge a branded product: brand associations and product associations. A narrow brand includes products similar to each other. Retrieving any product information will activate all others. Therefore, product associations of a narrow brand are highly accessible. In contrast, a broad brand links its
products by brand associations. Therefore, for a broad brand, brand associations are more accessible than product associations. Meyvis and Janiszewski (2004) shows that consumers prefer broad (narrow) brand when the benefit (category) associations are desired in the extension category.

To summarize, this stream of literature highlights the role of brand in brand extensions. Similar to the $P_0P_e$ fit, the $B_0P_e$ fit is also important for consumer evaluation of the extensions. Most studies address one of the two types of fits, but this study attempts to examine both fits at the same time.

This study also differs from the previous studies in that it addresses the affect transfer rather than brand evaluation. Studies focused on consumer evaluation of the extensions until a recent study highlighted the role of the affect. Yeung and Wyer (2005) suggests that consumers' affect towards the product is generated before consumers form any evaluation of the extension product. Moreover, the affect generated will also influence the evaluation.

In this study, affect refers to how much consumers like the branded product. In the next session, I describe the framework explaining the conditions under which affect associated with the $B_0P_0$ would be transferred to $B_0P_e$.

### 2.3 Conceptual Framework and Hypotheses

#### 2.3.1 Affect Transfer Process

Affect in this study means consumers’ liking of a branded product. Although many other cognitive models explaining the impacts of affect (Averwell 1990; Bower 1981), the theory of schema-triggered affect highlights the transfer process from one
object to the other (Andersen and Baum 1994). This theory was originally developed and applied in the social science area (Fiske 1982). Later, quite a few marketing studies borrowed the theory to explain different issues such as judgments of consumer products (Meyers-Levy and Tybout 1989), advertisement evaluation (Houston, Childers and Heckler 1987) and celebrity endorsement (Misra and Beatty 1990).

The theory suggests that the schematic match-up determines affective responses (Fiske 1982; Fiske and Pavelchak 1986; Pavelchak 1989). Schema is a hypothetical memory structure that helps people organize new information relative to existing information (Solso 1989). If an item is congruent with an existing schema, it will receive the affect linked to that schema. However, the information incongruent with the schema is likely to be filtered out (Taylor and Crocker 1981).

This theory is later incorporated into the broader distinction between category-based response and piecemeal-based responses (Fiske and Pavelchak 1984; Fiske and Neuberg 1990). Fiske and Pavelchak (1984) proposes that consumers determine the match-up in two stages: categorization and piecemeal processing. If an incoming stimulus is congruent with an existing schema, then consumers process the stimulus and the schema in the same category. Consumers prefer the categorization process since it requires less cognitive effort. As a result, affect associated with the schema will be transferred to the stimulus. When the stimulus is incongruent with the schema, a piecemeal process begins. In the latter case, consumers initiate an attribute-by-attribute comparison between schema and stimulus to determine the match-up. This process is calculative in nature and requires more cognitive effort, resulting in less affect being transferred. Thus, more affect transfer occurs in the first stage than in the second one.
This study focuses on the affect being transferred in the first match-up stage. The match-up is determined by the degree of congruence between the incoming stimulus and the existing schema. For the framework in this study, I assume that \( B_0P_0 \) is a formed schema in consumers’ memory structure. The schema include all product and brand information contained in \( B_0P_0 \). When \( P_e \) is perceived as congruent with the \( B_0P_0 \), affect linked to the \( B_0P_0 \) will be transferred to the \( B_0P_e \). Congruence has two components influencing the information process: expectancy and relevancy (Goodman 1980; Heckler and Childers 1992)

### 2.3.2 Expectancy and Relevancy

Heckler and Childers (1992) conceptualizes two dimensions of congruency and study their impact on a consumer’s memory. Expectancy refers to the degree to which an item or piece of information falls into some predetermined pattern (Heckler and Childers 1992). When the information is unexpected, it requires an elaborate process to encode (Hastie 1980 1981; Srull 1981; Srull et al. 1985) and thus leads to better recall. Relevancy is the degree to which material is related to the theme of the message (Heckler and Childers 1992). In contrast to expectancy, relevancy is positively related to memory recall, since relevant information is well encoded enough to be distinctive from other information.

Lee and Mason (1999) supports the two-dimensional conceptualization of congruency by Heckler and Childers (1992), and links to the formation of consumer’s attitude. Both studies (Heckler and Childers 1992; Lee and Mason 1999) examine consumers’ responses to advertising, and assert that unexpected information has a
positive impact on the recall of advertising. As this study applies this two-dimensional concept in a different context, I will not directly extend the results here. Specifically, although the unexpectancy has a positive impact on advertising recall, it does not necessarily have a positive relationship to the affect transfer. Even though, for advertisement recall, Lee and Mason (1999) points out that this positive effect relies on whether advertising readers are able to resolve the incongruence. Therefore, this study only borrows the two-dimensional concept of congruency (expectancy and relevancy), and separately investigates their roles in affect transfer in the context of brand extensions.

2.3.3 Expectancy and Affect Transfer

In this study of brand extension, expectancy captures the $P_0P_e$ fit and indicates how much consumers expect the manufacturer of $P_0$ to produce $P_e$. Comparing with the concept of similarity that previous studies use to measure the $P_0P_e$ fit, expectancy is a broad concept. Various constructs measuring the $P_0P_e$ fit, such as perceived fit and attribute similarity can all serve as the basis for forming expectancy. For example, consumers expect BMW, as an auto manufacturer, to extend to the motorcycle category, since they believe the manufacturer can transfer its skills to producing motorcycle. Consumers may expect a manufacturer of computers to extend to printers due to the previous example of Hewlett-Packard. Thus, expectancy is a concept that incorporates product knowledge, previous experience, and perceived similarity in order to make a judgment of the relationship between $P_0$ and $P_e$. 
Expectancy has two roles in the affect transfer process: it activates the schemata information processing and it generates a positive affect once the expectancy is confirmed. Over time, consumers develop a schema for B₀P₀. This schema consists of consumer knowledge, experience, and beliefs about the parent product. All of these are the basis of consumers’ expectancies of possible extensions. When a high-expectancy Pₑ fits into a current schema, it triggers the affect transfer process. The process transfers affect from B₀P₀ to B₀Pₑ.

In addition, confirmation of expectancies induces positive affect (Mandler 1975). People generally want to predict what happens next. Therefore, the initial affect response to confirmation typically is positive (Olson, Roese and Zanna 1996). The argument is also supported by both the attribution theory (Kelley 1973; Weiner 1986) and cognitive consistency theory (Festinger 1957; Heider 1958). In this context, when consumers consider B₀Pₑ a highly expected extension, the confirmation of the expectation itself generates affect to the B₀Pₑ.

In conclusion, expectancy summarizes the relationship between P₀ and Pₑ. When Pₑ is expected, B₀Pₑ receives affect from two parts: one is transferred from B₀P₀ and the other is generated upon the confirmation of the expectation. Thus:

\[ H₁: \text{More affect will be transferred from } P₀ \text{ to a high-expectancy } Pₑ \text{ than to a low-expectancy category } Pₑ. \]

2.3.4 Relevancy and Affect Transfer

Relevancy relates to the importance of brand associations in the Pₑ (Broniarczyk and Alba 1994), and indicates the B₀Pₑ fit. Brand associations are attributes associated
with a brand in a consumer’s mind. Associations can be product related, such as high quality products, or non-product related, such as usage situations or brand prestige (Keller 1993). The relevance of a brand’s associations varies across different product extensions. For example, Colgate is associated with cavity fighting. Such an association is more relevant in the toothpaste category than in the mouthwash category. Therefore, the brand association of cavity fighting is of high relevance in the toothpaste category but of low relevance in the mouthwash.

Irrelevant information blocks affect transfer. People have difficulties connecting irrelevant information with the current message (Heckler and Childers 1992). When $B_0$ extends to an irrelevant category, consumers cannot find relevant associations of $B_0$ in $P_e$. The mismatch between $B_0$ and $P_e$ makes people feel frustrated, resulting in negative affect transfer (Lee and Mason 1999). Conversely, the presence of relevant information facilitates the affect transfer (Lee and Mason 1999). Therefore, I suggest that:

**H$_2$: More brand affect will be transferred from $B_0$ to a high-relevancy $P_e$ than to a low-relevancy $P_e$.**

Based on $H_1$ and $H_2$, both fits ($P_0P_e$ fit and $B_0P_e$ fit) positively influence the amount of affect transfer from $B_0P_0$ to $B_0P_e$. Thus, I propose:

**H$_3$: The largest amount of affect will be transferred from $B_0P_0$ to $B_0P_e$ when both levels of expectancy and relevancy are high.**

So far, both expectancy and relevancy are discussed at the product level. However, relevancy exists at two levels: at the product level and at the attribute level. At
the product level, relevancy means the importance of a brand to Pe. As suggested by H2, a larger amount of affect is transferred to a high-relevancy Pe than to a low-relevancy Pe. At the attribute level, affect can also be transferred via attributes common to B0P0 and B0Pe. These attributes differ in the degree of relevancy in the Pe. High-relevancy attributes are those associated with B0 and important in the Pe. As relevancy positively influences the affect transfer process, it is proposed that:

H4: More affect will be transferred from B0P0 to Pe via high-relevancy attributes than via low-relevancy attributes.

2.4 Methodology

Three studies examine the role of expectancy and relevancy in brand extensions. The first study examines both factors at the product level. The second one examines the expectancy at the product level and relevancy at the attribute level. A third study verifies the Study 2 results for a weak brand.

2.4.1 Study 1

Study 1 examines the role of expectancy and relevancy in the affect transfer process. Expectancy is independent of relevancy. Expectancy reflects the P0Pe fit, and relevancy measures the B0Pe fit. Whereas previous studies have examined the two fits separately, this study extends these results to examine both at the same time.

Research of this type requires pretests to identify real brands that conform to the experimental manipulation and to control for extraneous variables. Two pretests identify high/low expectancy categories and high/low relevancy attributes within each product category.
Pretests  Pretests suggested four extension categories ($P_e$) that varied independently both in the degree of expectancy and the extent of relevancy. The process had three steps. The first was to identify three $P_0$s. Second, for each $P_0$, two extensions were selected based on different levels of expectancy for $P_0$s (high/low). Third, two brands ($B_0$s) varying in different amount of affect (strong/weak) were picked for each $P_0$, and another two extensions were selected based on different levels of relevancy to the $B_0$s.

Thirty-three subjects participated in the first two steps. Based on stimuli used in the previous studies of brand extensions, three $P_0$s were selected: ice cream, running shoes and laptops. For each $P_0$, subjects rated the expectancy of six possible extensions. Among the six, two were selected as high-expectancy $P_e$ and low-expectancy $P_e$ respectively.

Next, these subjects wrote down brands they liked in the three $P_0$s. For each brand they mentioned, they also recalled anything associated with that brand. Based on these free-recall results, two brands were selected for each $P_0$. These two brands were recalled with similar associations but varied in the number of subjects who liked the brand (strong and weak). Strong brands were liked by more subjects than weak brands. For each $B_0$, one or two most-mentioned items were identified as that brand’s associations. Table 2.1 listed the brands selected and the associations for each brand.

Third, eighteen subjects participated in the last step. Participants evaluated the relevancy of these associations in a different set of $P_e$s. Finally, another two extensions were chosen for each $B_0$: high/low relevancy extensions. Table 2.2 summarized the brands and products selected in the pretests.
**Design**  A 2 (expectancy of the extension category: \( P_{e-high}, P_{e-low} \)) \( \times 2 \) (relevance of brand associations in the extension category: \( P_{r-high}, P_{r-low} \)) \( \times 2 \) (brand affect: strong/weak) \( \times 3 \) (product set) design was used. Expectancy was a between subject factor indicating how much consumers expect \( P_0 \) to extend to \( P_e \). Relevance was a within-subject factor capturing the importance of \( B_0 \) to \( P_e \). Brand affect was also a between-subject factor that contrasted two brands in the same \( P_0 \) but with different degrees of affect. The product set was a within-subject replication factor consisting of three products: food, sporting goods, and electronic products.

To summarize, each subject evaluated three sets of products. Each set included three products: \( P_0, P_{e-high}, r-high, P_{e-high}, r-low \); or \( P_0, P_{e-low}, r-high, P_{e-low}, r-low \). Both the order of evaluating three products sets and of evaluating the two levels of relevancy were counter-balanced. In total, each subject evaluated three brands and six possible extensions.

Analysis of variance (ANOVA) was used to examine the main and interaction effects of experimental factors. Since the hypotheses were stated in the format of comparisons of means, results were presented accordingly.

**Procedure**  One hundred and thirty undergraduates participated in the study in exchange for extra credit. Subjects were run in groups of 8 to 10 per session and answered questions at a controlled pace. Subjects first read a brief description about a brand and then evaluated the first brand. After that, they were told that the brand was considering two possible extensions and their opinions about these extensions would be important for the company’s decision-making. Subjects then answered questions about
the two extension products. The same procedure was repeated for another two sets of products. In the end, subjects rated their expectancy of each extension and filled out some background information. Each session took approximately 30 minutes and participants were debriefed upon completion of the questionnaire.

**Dependent Variables** The study measured two dependent variables: affect transferred from B₀P₀ to B₀Pₑ and product evaluation of B₀Pₑ. Affect was transferred from B₀P₀ to B₀Pₑ. B₀Pₑ, as a new product had zero affect at the start. Therefore, affect transferred to B₀Pₑ was measured by the amount of affect associated with B₀Pₑ. The measurement consisted of three seven-point scales: “I feel good when I use the product”, “This product makes me happy” and “I feel pleasure when I use the product” (Chaudhuri and Holbrook 2001). The reliability of the scale was 0.92 (Cronbach’s α = 0.92, n=129). Product evaluation was made up of three seven-point items (Keller and Aaker 1992): low quality/high quality, not at all likely to try/very likely to try, inferior product/superior product (Cronbach’s α = 0.86, n=129).

**Manipulation Check** Manipulation of the three experimental factors was checked: level of expectancy, level of relevancy and brand strength.

Expectancy was measured by two seven-point semantic scales (1 as “extremely unexpected/ surprising” and 7 as “not unexpected/unsurprising”; Lane and Jacobson 1997). Results shown in Table 2.3 confirmed the pretest results. High-expectancy Pₑs rated higher than low-expectancy Pₑs. Out of six paired t-tests, five pairs showed that,
with the same degree of relevance, the high-expectancy $P_e$ scored higher than the low-expectancy $P_e$.

Relevancy of $B_0$ in $P_e$ was indicated by the average of relevancies of all $B_0$s associations in $P_e$. Relevancies of $B_0$s associations in $P_e$ were measured by the two seven-point semantic scale (1 as not at all relevant/not at all important and 7 as very relevant/very important; Broniarczyk and Alba 1994). Table 2.4 listed the relevancy levels of each $P_e$. Similar to Table 2.3, results in Table 2.4 confirmed the distinctiveness between high-level relevancy and low-level relevancy categories.

For each product category, a weak brand had similar associations with a strong one but had less affect attached. Table 2.5 compared the two brands in each category in terms of brand affect and brand evaluation. As predicted, strong brands scored consistently higher in three categories than weak brands. Overall, stimuli developed by the pretest conformed to the study purposes.

**Overview of Expectancy and Relevancy**  An ANOVA on the affect of $B_0P_e$ revealed that the affect transferred to $B_0P_e$ was influenced by three factors: expectancy ($F=4.45$, $P<0.05$), relevancy ($F=5.60$, $P<0.05$) and the amount of affect associated with $B_0P_0$ ($F=4.20$, $P<0.05$). Table 2.6 listed ANOVA results. The follow session discussed the two factors (expectancy and relevancy) respectively.

**Expectancy on Affect Transfer**  Table 2.7-A summarized the affect comparison between different levels of expectancy. Most pairwise comparisons (11 out 12) supported $H_1$, in that a larger amount of affect was transferred to high-expectancy $P_e$s than to low-expectancy $P_e$s. The result held for both strong and weak brands.
Further, among four pairwise comparisons displaying statistical significance (P<0.05), three pairs were from Pes with high levels of relevancy. This indicates that the level of relevancy strengthens the positive relationship between expectancy and the amount of affect being transferred. The role of expectancy is to match the Pe with the existing schema of B0P0. Relevancy facilitates the affect being transferred from B0 to Pe. Low-relevancy Pe means that B0 associations are not very important in Pe. Therefore, the amount of affect that can be transferred from B0 is limited when Pe is low-relevancy. As a result, the differences in the transferred affect between high-expectancy and low-expectancy Pes were small.

Relevancy on Affect Transfer

Results in Table 2.7-B confirmed H2. With the same expectancy level, more affect was transferred to the high-relevancy Pe than to the low-relevancy Pe. Among three high-expectancy categories in the strong brand set, two displayed significant results (Nike: M high-expectancy, high-relevancy=4.60, M high-expectancy, low-relevancy=4.25, t=1.89, p<0.1; Haagen-Dazs: M high-expectancy, high-relevancy=4.71, M high-expectancy, low-relevancy=3.70, t=3.66, p<0.05). Strong brands, in this study, were associated with a large amount of affect. The affect transfer process not only related to the factors of expectancy and relevancy, but also to the amount of affect associated with the parent brand. Since the affect was limited in the weak brand set, the differences in the transferred affect between different levels of Pes were small.

Table 2.7-B also presented six sets of B0P0. Among the six sets, five sets showed that the largest affect transfer occurred when both the levels of expectancy and of relevancy were high. This outcome was consistent with H3.
Product Evaluation  As many previous brand extensions have used product evaluation as the dependent variable, this study also tracked the changes in brand evaluation caused by the affect transfer process. As extension evaluations are correlated with affect ($\gamma_{affect-evaluation} = 0.747$, $P<0.01$), the two factors (expectancy and relevancy) influenced evaluation in a similar way as the affect transfer process. Table 2.8 and Table 2.9 listed the results of product evaluations with difference levels of expectancy and relevancy. Table 2.8 compared the extension product evaluations with different levels of expectancies. Twelve pairwise comparisons consistently showed that, with the same relevancy levels, subjects favored the extensions with high-level expectancy. Among six pairs displaying statistical differences, three pairs were from the high-relevancy sets and two were from the low-relevancy sets. Thus, the expectancy factor influenced consumers' extension evaluations regardless of the extensions' relevancy level.

Table 2.9 summarized the impact of relevancy on the extension evaluation. Five out of 12 pairs yielded significant evaluation differences between the high-relevancy extensions and the low-relevancy ones. Among the five pairs, two were from the high-expectancy sets and three were from the low-expectancy sets. Similar to the previous discussion of expectancy, subjects also favored the high-relevancy extensions regardless of the expectancy. Results from both tables were consistent with findings related to the brand affect. Therefore, both expectancy and relevancy not only influenced affect transfer but also extension evaluation.
Study 1 Conclusions  Study 1 highlights the role of expectancy and relevancy at the product level. Both factors contribute to the affect transfer from B₀P₀ to B₀Pₑ, and thus the largest amount of affect is being transferred when both factors are high. H₁, H₂ and H₃ are supported across both strong and weak brands.

Study 1 results imply that companies should consider both the P₀Pₑ fit and the B₀Pₑ fit when making extension decisions. Consumers favor extensions with a high degree of expectancy and relevancy to P₀B₀. As a step further, whether those attributes favored in the parent category would be equally favored in the extension becomes the next question. Study 2 and study 3 explore this question for a strong brand and a weak brand respectively.

2.4.2 Study 2

Study 1 examined the factor of expectancy and relevancy at the product level and supported H₁, H₂ and H₃. Affect transfer also occurs at the attribute level. At the attribute level, H₄ suggests that a greater amount of affect is being transferred via high-relevancy attributes rather than via low-relevancy attributes. To test H₄, Study 2 was to investigate affect transfer at the attribute level. Specifically, expectancy was operated at the product level (high/low expectancy product categories). Within each extension category, there were two sets of attributes varying in degree of relevancy. High/low-relevancy attributes are those attributes associated with B₀P₀ and important/less-important in the Pₑ.

Pretest 1 Pretest 1 was to select three product categories: an original product category (P₀), a high-expectancy extension product category (Pₑ-high), and a low-
expectancy extension product category (P_{e-low}). Consistent with Study 1, expectancy indicated how much consumers expected P_0 to extend to P_e.

Pretest 1 had two stages. In the first stage, three categories were chosen based on the qualitative results from a small group of 16 subjects: P_0, P_{e-high} and P_{e-low}. In the second stage, a large group of 56 subjects supported the results.

First, the laptop category was chosen as P_0 due to its familiarity to student subjects. Second, subjects rated expectancy of P_0 in two extensions: a portable DVD player and a cell phone. Expectancy was measured by two seven-point scales from “not unexpected/unsurprising (0)” to “extremely unexpected/surprising (7)” (Lane and Jacobson 1997). Subjects rated the portable DVD player (mean=4.77) as a higher expected extension than a cell phone (mean=3.03, t=7.28, P<0.01). The reliability of the two-item scale of expectancy is high for both extension categories (Cronbach’s α was 0.73 for portable DVD category and 0.75 for cell phone category). As a result, a laptop was selected as P_0, a portable DVD player as P_{e-high} and a cell phone as P_{e-low}.

**Pretest 2** The goal of Pretest 2 was to identify high-relevancy and low-relevancy attributes within each of two extension categories. Attributes here refer to a brand’s benefit associations within a product category. The Dell brand was chosen due to its popularity among college students.

Pretest 2 also involved two steps. The first was to define the brand attributes of Dell. Subjects wrote down anything that came to their minds when they thought of B_0 (Dell). Five attributes were most commonly mentioned: affordability, innovative technology, product customization, convenience of purchase, and customer satisfaction.
These five attributes were believed to capture Dell’s characteristics. Three of them (affordability, product customization and convenience of purchase) resulted from Dell’s signature of direct sales, and the other two (innovative technology and customer satisfaction) were frequently mentioned in Dell’s advertising campaign.

In the second stage, 56 subjects rated the relevancy of each attribute in two extension categories: $P_{e\text{-high}}$ and $P_{e\text{-low}}$. Relevancy was measured as the importance of each attribute to the extension category (Broniarczyk and Alba 1994). Subjects evaluated each attribute on a seven-point scale of importance (1 as not important at all and 7 as very important) in $P_{e\text{-high}}$ and $P_{e\text{-low}}$ separately.

Table 2.10 showed the mean value of relevancy for each attribute in each product category. Based on the mean value in each category, attributes were divided into two sets: a set of high-relevancy attributes and a set of low-relevancy attributes. Table 2.11 listed the two sets attributes in each extension category.

Subjects Fifty-four students participated in Study 2 in small groups of up to five per session. Each subject was randomly assigned to one of two treatments ($P_{e\text{-high}}$, $P_{e\text{-low}}$ or $P_{e\text{-low}}$, $P_{e\text{-high}}$ ) and completed a questionnaire booklet at a controlled pace. Subjects participated in the study in exchange for credit in their marketing classes.

Design The study had two within-subject factors: high/low expectancy categories (portable DVD player/cell phone), and high/low-relevancy attributes within each category (see Table 2.11). Subjects were assigned to one of two treatments with different sequence of evaluating extension categories ($P_{e\text{-high}}$, $P_{e\text{-low}}$ or $P_{e\text{-low}}$, $P_{e\text{-high}}$). In both cases,
subjects were asked to evaluate $P_0$ (Dell laptop) in the first session. To assess possible order effects, in the second session subjects evaluated the extension in the low expectancy category first (sequence: $P_{e\text{-low}}, P_{e\text{-high}}$) or in the high expectancy category first (sequence: $P_{e\text{-high}}, P_{e\text{-low}}$). Results showed that the order effects were not obvious so the two groups were combined into one.

**Procedure** Each subject was randomly assigned to one of two booklets differing only in the sequence ($P_{e\text{-high}}, P_{e\text{-low}}$ or $P_{e\text{-low}}, P_{e\text{-high}}$). Subjects were told to follow instructions closely. In the beginning of the study, subjects were notified that a company was considering possible brand extensions and that their opinions would be important to the decision-making. Subjects rated the affect of the Dell products in three categories ($P_0$, $P_{e\text{-high}}$ and $P_{e\text{-low}}$). Furthermore, subjects also assessed the affect at the attribute level in the three categories.

The study was divided into two sub-sessions, and subjects were told to pause until other people finished that part so that they could start the next session at the same time. Subjects proceeded through the questionnaire sequentially and completed one measure before turning to the next. The process continued until both extensions had been rated. Finally, subjects answered some demographic questions and then were debriefed. The whole process took about 20 minutes.

**Measures** Affect was measured at the product level and at the attribute level. At the product level, affect was measured by three items, each on a seven-point scale. The three items (favorable/unfavorable, desirable/undesirable, low quality/high quality) were
averaged as the affect (Baron and Miniard 2000). The scale was reliable with a Cronbach’s alpha of 0.83. At the attribute level, affect indicated how much subjects liked a specific attribute of the product, and it was measured by a seven-point scale (1 as very poor and 7 as very good).

**Manipulation Check**  The manipulation of two levels of expectancy (P\text{e-high}/P\text{e-low}) was checked by the similarity measurement. All subjects evaluated the similarity between a cell phone and a laptop, and between a portable DVD player and a laptop. The similarity was measured by a seven-point scale (1 as very dissimilar and 7 as very similar). Compared with a cell phone (mean=4.63), a portable DVD (mean=5.14) was seen as more similar to the laptop (t=3.58, p<0.01, df=57). Thus, the manipulation of the expectancy factor was valid.

**Affect Transfer (P\text{e-high vs. }P\text{e-low})**  Affect transfer was examined at two levels: at the product level and at the attribute level. At the product level, the study compared the amount of affect transferred to P\text{e-high} with that transferred to P\text{e-low}. As H\text{1} predicted, affect transferred to P\text{e-high} was significantly higher than that to P\text{e-low} (mean\text{high-expectancy}=5.14, mean\text{low-expectancy}=4.63, t=3.56, df=57, P<0.01). In addition, the affect in the high-expectancy category was even higher than that in the parent product category (mean\text{parent}=5.02, mean\text{high-expectancy}=5.14, t=0.88, df=57, P>0.1). A possible reason was that the expectation confirmation process itself generated affect. In summary, affect associated with the high-expectancy category included two parts: one was transferred
from the parent product category and the other was generated when P₀ extended to a highly expected Pₑ.

**Affect Transfer (High-Rellevancy vs. Low-Rellevancy Attributes within each Category)**

Consistent with the prediction of H₄, Table 2.12 showed that a larger part of affect was transferred via high-relevancy attributes than via low-relevancy attributes. Pₑ-high has the three high-relevancy attributes. Among these attributes, the affect difference between the parent category and the extension was not significant. It implied that most affect associated with high-relevancy attributes was transferred. However, among the low-relevancy attributes in the same category, the affect scores were significantly lower than those in the parent product category. Therefore, a large part of the affect associated with low-relevancy attributes was not transferred.

The same pattern was also found in the Pₑ-low. The set of high-relevancy attributes in the low-expectancy category (innovative technology and customer satisfaction) scored not significantly differently from parent category. For the low-relevancy attributes, the affect of all three attributes was rated significantly lower than those in the parent category. Table 2.12 showed the means of attribute affect in three categories (P₀, Pₑ-high and Pₑ-low).

**Discussion of Study 2** Study 2 revealed that both expectancy and relevancy contributed to the affect transfer process in brand extensions. At the product level, participants preferred the high-expectancy category to the low-expectancy category. Compared with Pₑ-low, Pₑ-high was easier to match with the parent product category. Thus, the affect was more likely to be transferred to Pₑ-high than to Pₑ-low. In addition,
confirmation of expectancy generated affect, so affect associated with $P_{e\text{-high}}$ could be higher than that in the parent product category.

At the attribute level, results supported $H_4$. A larger amount of affect was transferred via high-relevancy attributes than via-low relevancy attributes. If an attribute was not relevant in the extension category, little affect transfers occurred.

In addition, Study 2 provided evidence of the affect generated by the expectation-confirmation process. Subjects scored Dell higher in $P_{e\text{-high}}$ than in $P_0$. Two possibilities may explain consumers' expectancy of a Dell portable DVD player: 1) Dell is known to produce high-quality products at an affordable price. As a new product, the price level of a portable DVD is high, since few established brands have entered that market yet. Consumers expect Dell to enter the market to provide the product with affordability as well as good quality assurance, and 2) the similarity between laptops and portable DVD players may also be the basis for such expectations. Confirmation of the expectation not only facilitates the affect transfer but also generates affect.

2.4.3 Study 3

The purpose of Study 3 was to verify the Study 2 results in a weak brand situation. To make results comparable, the design and procedure followed those of Study 2, with another brand. Gateway was chosen as the brand with similar associations as Dell but in a relatively weak position.

Pretest one Pretest 1 was to find a brand comparable to Dell but with weak brand strength. Compared with a strong brand, a weak brand indicated a lower amount of affect attached. First, 16 subjects were given six laptop brands: HP, Compaq, Dell,
Apple, Gateway and IBM. Subjects listed whatever came to their minds when they thought of each brand. Results showed that Gateway shared the largest number of brand associations with Dell. The most frequently mentioned brand associations for both brands included: convenience of product customization, good customer service, convenient purchase, and an affordable laptop. These two brands shared similar associations partly because both of them were positioned as direct laptop sellers and they had launched head-to-head TV campaigns before.

Next, 56 subjects rated their affect towards either Dell or Gateway. The affect measure was the same as Study 2. Results showed that Dell scored higher than Gateway (Brand Affect \(_{Dell}= 4.89\), Brand Affect \(_{Gateway}= 4.15\), \(t=2.26, P<0.05\)). Therefore, the pretest selected Gateway as a weak brand for the study.

**Design and Procedure:** Fifty-seven subjects joined Study 3 in exchange for extra credit. The study design and procedure closely followed that of Study 2. Participants followed the same instructions and filled out the questionnaire. The use of the weak brand Gateway was the only difference between Study 2 and Study 3.

**Manipulation Check** The manipulation of the two brands (strong vs. weak brand) was checked by comparing the brand affect of Gateway with that of Dell in Study 2. Dell scored higher on brand affect than Gateway in the parent product category of laptop (Brand affect \(_{Dell}=5.02\), Brand affect \(_{Gateway}=4.30\), \(t=3.86, P<0.01\), \(df=108\)). Thus, the use of Gateway as a weak brand was justified.
**Affect Transfer (P_{e-high} vs. P_{e-low})** Results supported H₁ (mean high-expectancy=4.54, mean low-expectancy=4.12, t=2.91, df=57, P<0.01). Affect transferred to P_{e-low} was significantly lower than to P_{e-high}. As was true for the strong brand, the affect score of P_{e-high} was higher than that of P₀.

**Affect Transfer (High-Relevancy Attributes vs. Low-Relevancy Attributes)**

Generally, H₄ was also supported in the weak brand situation. Affect score showed that more affect was transferred via high-relevancy attributes than low-relevancy attributes. The pattern was observed for both extension categories: P_{e-high} and P_{e-low}. Table 2.13 listed the mean of the affect measured at the attribute level. However, since the parent brand was associated with a limited amount of affect, the mean differences between high-relevancy and low-relevancy attributes were not statistically significant.

Within the P_{e-high}, two out of three high-relevancy attributes scored higher in P_{e-high} than in P₀. Similarly, within the P_{e-low}, both high-relevancy attributes were rated higher than those in P₀, whereas the affect score of the three low-relevancy attributes was lower than that in P₀. Results implied that the majority of the affect associated with high-relevancy attributes was transferred.

**Discussions of Study 3** Study 3 provided support to H₁, H₂ and H₄ in a weak brand situation. For a weak brand, the amount of affect that could be transferred was limited. Thus, the differences between high-expectancy and low-expectancy Pᵟs were small. Figure 2.1 contrasted the affect in the strong brand with the weak brand in three
categories (P₀, Pₑ-high and Pₑ-low) across two brands. The strong brand was approximately parallel with the weak one. Thus, H₁ was supported in both situations.

Generally, the affect of Pₑ-high was close to P₀, whereas Pₑ-low was much lower than the other two (P₀ and Pₑ-high). For both brands, low-expectancy extension blocked the affect to be transferred from B₀P₀ to B₀Pₑ. In other words, the brand advantages diminished in the low-expectancy extensions.

2.5 Conclusions and Discussions

Despite more than a decade of studies in brand extension evaluations, the conceptual framework in this area can be best described as divergent. The central issue remains as: based on consumers’ liking of the parent product, how much will they like the extension product? Studies approach the problem from two perspectives: the relationship between P₀ and Pₑ, and the relationship between B₀ and Pₑ.

The results presented here are an effort to integrate the two dimensions. Evidence supports that both factors are important in the affect transfer process from B₀P₀ to B₀Pₑ, and the greatest amount of affect is transferred when both conditions (expectancy and relevancy) are met.

The framework provides a theoretical basis explaining the different roles of each factor. Expectancy matches up Pₑ with B₀Pₑ to make the affect transfer possible. Moreover, confirmation of the expectations also generates affect (Olson, Roese and Zanna 1996). Relevancy indicates the strength of affect transfer, influencing the amount of affect that will be transferred to P₀Bₑ. Collectively, both factors have different roles in
the affect transfer process, and this research offers the first empirical evidence to support that view.

The experimental findings provide evidence for affect transfer at the product and attribute level. At the product level, most affect is transferred when the extension is highly expected and the brand fits that extension well. Expectancies are based on various factors, such as product knowledge and experience. Moreover, a competitor’s product launch may also create expectations for the firm’s current products. For example, the phenomenal success of Apple’s extension into the cell phone category may also create consumer expectancies for other PC manufacturers to unveil a multifunctional cell phone. Extensions meeting such expectancies are likely to be favored by consumers. A possible stream of future research can identify factors related to consumers’ expectancies.

At the attribute level, the results show that a larger amount of affect is transferred via high-relevancy attributes than via low-relevancy attributes. This finding provides some implications to practitioners. As a brand grows, it develops a rich body of associations. A firm is presented with different options to present the brand in the extension categories. This study suggests that a brand should highlight different attributes in different extensions. For example, Colgate is associated with two attributes: expertise in dental care and fresh feeling. Rather than advertising the Colgate brand in the same way in different extension categories, the study implies that Colgate should highlight its fresh feeling in the mouthwash category but address the dental care expertise in the toothbrush category. The implication also yields an interesting research question. Will different positioning in various extensions generate spillover effects among
extension categories? Future studies can explore conditions under which brand positioning in one category will influence its positioning in other categories.
Bibliography


Bridges, Sheri, Kevin Lane Keller, and Sanjay Sood (2000), "Communication Strategies for Brand Extensions: Enhancing Perceived Fit by Establishing Explanatory


Mandeler, George (1975), Mind and Emotions. New York: Wiley.


Table 2.1
Brand Attributes (Strong/Weak)

<table>
<thead>
<tr>
<th>P₀</th>
<th>Brand Attribute 1</th>
<th>Brand Attribute 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Running Shoes</strong></td>
<td>Strong Brand (Nike)</td>
<td>&quot;Just do it&quot;</td>
</tr>
<tr>
<td></td>
<td>Weak Brand (Asics)</td>
<td>High quality shoes</td>
</tr>
<tr>
<td><strong>Ice Cream</strong></td>
<td>Strong Brand (Haagen Dazs)</td>
<td>Feeling of being indulgent</td>
</tr>
<tr>
<td></td>
<td>Weak Brand (Smith’s)</td>
<td>Feeling of being indulgent</td>
</tr>
<tr>
<td><strong>Laptop</strong></td>
<td>Strong Brand (Apple)</td>
<td>Innovative</td>
</tr>
<tr>
<td></td>
<td>Weak Brand (Gateway)</td>
<td>Innovative</td>
</tr>
</tbody>
</table>

Good quality ice cream
<table>
<thead>
<tr>
<th>BoPo (Strong/Weak)</th>
<th>High-Expectancy</th>
<th>Low-Expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nike/Asics Running shoes</td>
<td>High-Relevancy</td>
<td>Treadmill</td>
</tr>
<tr>
<td></td>
<td>Low-Relevancy</td>
<td>Tennis racket</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diet bar</td>
</tr>
<tr>
<td>Haagen-Dazs/Smith’s Ice cream</td>
<td>High-Relevancy</td>
<td>Premium chocolate</td>
</tr>
<tr>
<td></td>
<td>Low-Relevancy</td>
<td>Mint candy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Popcorn</td>
</tr>
<tr>
<td>Apple/Gateway Laptop</td>
<td>High-Relevancy</td>
<td>PDA</td>
</tr>
<tr>
<td></td>
<td>Low-Relevancy</td>
<td>Portable DVD player</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Digital camera</td>
</tr>
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</table>
### Table 2.3
Mean Value (SD) of Expectancy of Each Extension Product

<table>
<thead>
<tr>
<th>Brand Name (Strong/Weak)</th>
<th>High-Expectancy</th>
<th>Low-Expectancy</th>
<th>Mean Difference</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nike/Asics (High-Relevancy)</td>
<td>4.34 (1.75)</td>
<td>2.88 (1.78)</td>
<td>1.45**</td>
<td>4.17</td>
<td>0.00</td>
</tr>
<tr>
<td>Nike/Asics (Low-Relevancy)</td>
<td>4.24 (1.73)</td>
<td>3.52 (1.73)</td>
<td>0.73**</td>
<td>2.62</td>
<td>0.01</td>
</tr>
<tr>
<td>Haagen-Dazs/Smith's (High-Relevancy)</td>
<td>5.33 (1.64)</td>
<td>3.34 (1.73)</td>
<td>1.99**</td>
<td>6.64</td>
<td>0.00</td>
</tr>
<tr>
<td>Haagen-Dazs/Smith's (Low-Relevancy)</td>
<td>3.29 (1.40)</td>
<td>2.57 (1.43)</td>
<td>0.71**</td>
<td>2.90</td>
<td>0.01</td>
</tr>
<tr>
<td>Apple/Gateway (High-Relevancy)</td>
<td>5.44 (1.86)</td>
<td>4.69 (1.62)</td>
<td>0.75**</td>
<td>2.34</td>
<td>0.02</td>
</tr>
<tr>
<td>Apple/Gateway (Low-Relevancy)</td>
<td>4.74 (1.87)</td>
<td>4.69 (1.67)</td>
<td>0.05</td>
<td>0.14</td>
<td>0.89</td>
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</tbody>
</table>

*P<0.1, **P<0.05
Table 2.4
Mean Value (SD) of Relevancy of Each Extension Product

<table>
<thead>
<tr>
<th>Brand Name (Strong/Weg)</th>
<th>High-Relevancy</th>
<th>Low-Relevancy</th>
<th>Mean Difference</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nike/Asics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Expectancy</td>
<td>5.06 (1.38)</td>
<td>4.92 (1.64)</td>
<td>0.14</td>
<td>0.77</td>
<td>0.44</td>
</tr>
<tr>
<td>Low-Expectancy</td>
<td>4.16 (1.40)</td>
<td>3.36 (1.51)</td>
<td>0.80**</td>
<td>3.31</td>
<td>0.00</td>
</tr>
<tr>
<td>Haagen-Dazs/Smith’s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Expectancy</td>
<td>5.73 (1.06)</td>
<td>3.77 (1.75)</td>
<td>1.96**</td>
<td>6.95</td>
<td>0.00</td>
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<tr>
<td>Low-Expectancy</td>
<td>4.96 (1.39)</td>
<td>3.71 (1.44)</td>
<td>1.25**</td>
<td>5.38</td>
<td>0.00</td>
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<tr>
<td>Apple/Gateway</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Expectancy</td>
<td>5.75 (1.14)</td>
<td>5.16 (1.27)</td>
<td>0.58**</td>
<td>3.50</td>
<td>0.00</td>
</tr>
<tr>
<td>Low-Expectancy</td>
<td>5.98 (0.96)</td>
<td>5.46 (1.25)</td>
<td>0.52**</td>
<td>4.72</td>
<td>0.00</td>
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</tbody>
</table>

*P<0.1, **P<0.05
Table 2.5
Mean (SD) of Strong/Weak Brand Affect in $P_0$

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Strong Brand</th>
<th>Weak Brand</th>
<th>Mean Difference</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running Shoes</td>
<td>5.36 (1.23)</td>
<td>4.30 (1.43)</td>
<td>1.06</td>
<td>4.54**</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>5.64 (1.14)</td>
<td>4.19 (1.51)</td>
<td>1.45</td>
<td>6.17**</td>
<td>0.00</td>
</tr>
<tr>
<td>Ice Cream</td>
<td>5.03 (1.37)</td>
<td>4.49 (1.51)</td>
<td>0.54</td>
<td>2.14**</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>5.14 (1.02)</td>
<td>4.48 (1.24)</td>
<td>0.66</td>
<td>3.29**</td>
<td>0.00</td>
</tr>
<tr>
<td>Laptop</td>
<td>4.41 (1.44)</td>
<td>4.04 (1.34)</td>
<td>0.37</td>
<td>1.49</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>5.43 (1.24)</td>
<td>3.87 (1.53)</td>
<td>1.56</td>
<td>6.41**</td>
<td>0.00</td>
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</tbody>
</table>

*P<0.1, **P<0.05
Table 2.6

Impacts of Expectancy and Relevancy on the Affect transferred to $B_0P_e$

<table>
<thead>
<tr>
<th>Dependent Variables: Affect Transferred to $B_0P_e$</th>
<th>F statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Effects</strong></td>
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<td></td>
</tr>
<tr>
<td>Expectancy (A)</td>
<td>4.45</td>
<td>0.04</td>
</tr>
<tr>
<td>Relevancy (B)</td>
<td>5.60</td>
<td>0.02</td>
</tr>
<tr>
<td>Affect associated with $B_0P_0(C)$</td>
<td>4.20</td>
<td>0.04</td>
</tr>
<tr>
<td><strong>Interactions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(A)x(B)</td>
<td>0.52</td>
<td>0.47</td>
</tr>
</tbody>
</table>
Table 2.7-A

Impact of Expectancy on Affect of $B_0P_e$

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>High-Exptectancy</th>
<th>Low-Expectancy</th>
<th>Mean Difference</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong Brand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Nike)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Relevancy</td>
<td>4.91 (1.26)</td>
<td>4.17 (1.39)</td>
<td>0.75**</td>
<td>2.29</td>
<td>0.03</td>
</tr>
<tr>
<td>Low-Relevancy</td>
<td>4.28 (1.56)</td>
<td>4.00 (1.61)</td>
<td>0.28</td>
<td>0.64</td>
<td>0.53</td>
</tr>
<tr>
<td>Strong Brand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Haagen-Dazs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Relevancy</td>
<td>4.49 (1.13)</td>
<td>3.61 (1.19)</td>
<td>0.88**</td>
<td>3.10</td>
<td>0.00</td>
</tr>
<tr>
<td>Low-Relevancy</td>
<td>4.10 (1.07)</td>
<td>3.63 (1.36)</td>
<td>0.47*</td>
<td>1.71</td>
<td>0.09</td>
</tr>
<tr>
<td>Weak Brand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Asics)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Relevancy</td>
<td>4.71 (1.66)</td>
<td>4.39 (1.17)</td>
<td>0.31</td>
<td>0.85</td>
<td>0.41</td>
</tr>
<tr>
<td>Low-Relevancy</td>
<td>4.09 (1.39)</td>
<td>3.71 (1.46)</td>
<td>0.39</td>
<td>0.97</td>
<td>0.34</td>
</tr>
<tr>
<td>Weak Brand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Smith's)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Relevancy</td>
<td>4.46 (1.25)</td>
<td>3.60 (1.25)</td>
<td>0.85**</td>
<td>2.91</td>
<td>0.01</td>
</tr>
<tr>
<td>Low-Relevancy</td>
<td>3.66 (1.23)</td>
<td>3.63 (1.36)</td>
<td>0.03</td>
<td>0.10</td>
<td>0.92</td>
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<tr>
<td>Strong Brand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Apple)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Relevancy</td>
<td>4.66 (1.11)</td>
<td>4.72 (1.25)</td>
<td>-0.06</td>
<td>-0.22</td>
<td>0.82</td>
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<tr>
<td>Low-Relevancy</td>
<td>4.95 (1.04)</td>
<td>4.62 (1.27)</td>
<td>0.33</td>
<td>1.12</td>
<td>0.27</td>
</tr>
<tr>
<td>Weak Brand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Gateway)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Relevancy</td>
<td>4.53 (1.07)</td>
<td>4.30 (1.42)</td>
<td>0.23</td>
<td>0.81</td>
<td>0.43</td>
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<td>Low-Relevancy</td>
<td>4.00 (1.18)</td>
<td>3.33 (1.24)</td>
<td>0.67**</td>
<td>2.31</td>
<td>0.03</td>
</tr>
</tbody>
</table>

*P<0.1, **P<0.05
### Table 2.7-B

Impact of Relevancy on Affect of B₀Pₑ

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>High-Expectancy Mean</th>
<th>Low-Expectancy Mean</th>
<th>Mean Difference</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strong Brand</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(Nike)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Expectancy</td>
<td>4.91 (1.26)</td>
<td>4.25 (1.53)</td>
<td>0.66**</td>
<td>2.66</td>
<td>0.01</td>
</tr>
<tr>
<td>Low-Expectancy</td>
<td>4.17 (1.39)</td>
<td>4.00 (1.61)</td>
<td>0.17</td>
<td>0.61</td>
<td>0.55</td>
</tr>
<tr>
<td><strong>Weak Brand</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(Asics)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Expectancy</td>
<td>4.49 (1.13)</td>
<td>4.10 (1.07)</td>
<td>0.39</td>
<td>1.57</td>
<td>0.13</td>
</tr>
<tr>
<td>Low-Expectancy</td>
<td>3.61 (1.19)</td>
<td>3.64 (1.36)</td>
<td>-0.03</td>
<td>-0.09</td>
<td>0.93</td>
</tr>
<tr>
<td><strong>Strong Brand</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(Haagen-Dazs)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Expectancy</td>
<td>4.71 (1.66)</td>
<td>3.70 (1.46)</td>
<td>1.00**</td>
<td>3.66</td>
<td>0.00</td>
</tr>
<tr>
<td>Low-Expectancy</td>
<td>4.38 (1.15)</td>
<td>4.11 (1.37)</td>
<td>0.27</td>
<td>1.19</td>
<td>0.24</td>
</tr>
<tr>
<td><strong>Weak Brand</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>(Smith's)</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>High-Expectancy</td>
<td>4.46 (1.25)</td>
<td>3.65 (1.32)</td>
<td>0.80**</td>
<td>4.09</td>
<td>0.00</td>
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<td>3.60 (1.25)</td>
<td>3.63 (1.23)</td>
<td>-0.02</td>
<td>-0.06</td>
<td>0.95</td>
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<tr>
<td><strong>Strong Brand</strong></td>
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<td></td>
<td></td>
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<tr>
<td><strong>(Apple)</strong></td>
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<tr>
<td>High-Expectancy</td>
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<td>4.65 (1.20)</td>
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<td>0.04</td>
<td>0.96</td>
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<td>0.54</td>
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<td><strong>Weak Brand</strong></td>
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<tr>
<td><strong>(Gateway)</strong></td>
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<tr>
<td>High-Expectancy</td>
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<td>4.00 (1.18)</td>
<td>0.53**</td>
<td>3.52</td>
<td>0.00</td>
</tr>
<tr>
<td>Low-Expectancy</td>
<td>4.30 (1.42)</td>
<td>3.33 (1.24)</td>
<td>0.96**</td>
<td>3.79</td>
<td>0.00</td>
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</table>

*P<0.05, **P<0.01
Table 2.8
Impact of Expectancy on Extension Evaluation

<table>
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<tr>
<th>Brand Name</th>
<th>High-Expectancy</th>
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<th>Mean Difference</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
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<td>Strong Brand (Nike)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High-Relevancy 4.79 (1.46)</td>
<td>High-Relevancy 4.65 (1.26)</td>
<td>0.15</td>
<td>0.44</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>Low-Relevancy 4.70 (1.40)</td>
<td>Low-Relevancy 4.00 (1.61)</td>
<td>0.70*</td>
<td>1.86</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>High-Relevancy 4.43 (1.19)</td>
<td>Low-Relevancy 3.61 (1.16)</td>
<td>0.82**</td>
<td>2.62</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Low-Relevancy 4.08 (1.52)</td>
<td>Low-Relevancy 3.64 (1.36)</td>
<td>0.45</td>
<td>1.24</td>
<td>0.23</td>
</tr>
<tr>
<td>Weak Brand (Asics)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High-Relevancy 5.10 (1.01)</td>
<td>Low-Relevancy 4.13 (1.34)</td>
<td>0.98**</td>
<td>3.37</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>Low-Relevancy 4.10 (1.33)</td>
<td>Low-Relevancy 3.83 (1.21)</td>
<td>0.27</td>
<td>0.84</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>High-Relevancy 4.10 (1.36)</td>
<td>Low-Relevancy 3.68 (1.05)</td>
<td>0.42</td>
<td>1.33</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Low-Relevancy 3.77 (1.35)</td>
<td>Low-Relevancy 3.01 (1.13)</td>
<td>0.76**</td>
<td>2.9</td>
<td>0.01</td>
</tr>
<tr>
<td>Strong Brand (Haagen-Dazs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High-Relevancy 5.43 (0.97)</td>
<td>Low-Relevancy 4.78 (1.35)</td>
<td>0.66**</td>
<td>2.38</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>Low-Relevancy 5.22 (1.13)</td>
<td>Low-Relevancy 4.84 (1.33)</td>
<td>0.38</td>
<td>1.15</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>High-Relevancy 4.21 (1.31)</td>
<td>Low-Relevancy 4.21 (1.45)</td>
<td>0.00</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>Low-Relevancy 3.77 (1.23)</td>
<td>Low-Relevancy 3.43 (1.43)</td>
<td>0.34</td>
<td>1.10</td>
<td>0.28</td>
</tr>
</tbody>
</table>

*P<0.1, **P<0.05
Table 2.9
Impact of Relevancy on Extension Evaluation $B_0P_e$

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>High-Expectancy</th>
<th>Low-Expectancy</th>
<th>Mean Difference</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strong Brand (Nike)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Expectedancy</td>
<td>4.79 (1.42)</td>
<td>4.75 (1.39)</td>
<td>0.05</td>
<td>0.24</td>
<td>0.81</td>
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<tr>
<td>Low-Expectedancy</td>
<td>4.65 (1.26)</td>
<td>4.00 (1.61)</td>
<td>0.65</td>
<td>2.26**</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>4.43 (1.19)</td>
<td>4.08 (1.52)</td>
<td>0.35</td>
<td>1.18</td>
<td>0.24</td>
</tr>
<tr>
<td></td>
<td>3.61 (1.16)</td>
<td>3.64 (1.36)</td>
<td>-0.02</td>
<td>-0.08</td>
<td>0.94</td>
</tr>
<tr>
<td><strong>Weak Brand (Asics)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Expectedancy</td>
<td>5.10 (1.01)</td>
<td>4.10 (1.33)</td>
<td>1.00</td>
<td>5.49**</td>
<td>0.00</td>
</tr>
<tr>
<td>Low-Expectedancy</td>
<td>4.12 (1.29)</td>
<td>3.82 (1.18)</td>
<td>0.29</td>
<td>1.32</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>4.10 (1.36)</td>
<td>3.77 (1.36)</td>
<td>0.33</td>
<td>1.45</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>3.68 (1.05)</td>
<td>3.01 (1.14)</td>
<td>0.67</td>
<td>2.24**</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>Strong Brand (Haagen-Dazs)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-Expectedancy</td>
<td>5.43 (0.97)</td>
<td>5.22 (1.13)</td>
<td>0.21</td>
<td>1.12</td>
<td>0.27</td>
</tr>
<tr>
<td>Low-Expectedancy</td>
<td>4.83 (1.32)</td>
<td>4.77 (1.35)</td>
<td>0.06</td>
<td>-0.34</td>
<td>0.73</td>
</tr>
<tr>
<td></td>
<td>4.21 (1.31)</td>
<td>3.77 (1.23)</td>
<td>0.44</td>
<td>2.56**</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>4.21 (1.45)</td>
<td>3.43 (1.43)</td>
<td>0.78</td>
<td>3.64**</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*P<0.1, **P<0.05
Table 2.10

Mean Value (SD) of Relevancy of Each Association

<table>
<thead>
<tr>
<th></th>
<th>$P_0$ (Laptop)</th>
<th>$P_{\text{high-expectancy}}$ (portable DVD player)</th>
<th>$P_{\text{low-expectancy}}$ (cell phone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience purchase</td>
<td>4.96(1.23)</td>
<td>5.36(1.16)</td>
<td>5.56(1.26)</td>
</tr>
<tr>
<td>Affordability</td>
<td>5.28(1.23)</td>
<td>5.77(1.04)</td>
<td>5.47(1.26)</td>
</tr>
<tr>
<td>Product customization</td>
<td>5.57(1.14)</td>
<td>4.07(1.86)</td>
<td>5.2(1.51)</td>
</tr>
<tr>
<td>Innovative technology</td>
<td>5.94(0.77)</td>
<td>5.5(1.29)</td>
<td>5.8(1.54)</td>
</tr>
<tr>
<td>the importance of customer satisfaction</td>
<td>6.58(0.68)</td>
<td>6.35(0.98)</td>
<td>6.75(0.69)</td>
</tr>
</tbody>
</table>
Table 2.11

High/Low Relevant Attributes in Extension Category

<table>
<thead>
<tr>
<th></th>
<th>$P_0$</th>
<th>$P_{\text{high-expectancy}}$ (portable DVD player)</th>
<th>$P_{\text{low-expectancy}}$ (cell phone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience purchase</td>
<td>Low relevancy</td>
<td>Low relevancy</td>
<td>Low relevancy</td>
</tr>
<tr>
<td>Affordability</td>
<td>Low relevancy</td>
<td>High relevancy</td>
<td>Low relevancy</td>
</tr>
<tr>
<td>Product customization</td>
<td>High relevancy</td>
<td>Low relevancy</td>
<td>Low relevancy</td>
</tr>
<tr>
<td>Innovative technology</td>
<td>High relevancy</td>
<td>High relevancy</td>
<td>High relevancy</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>High relevancy</td>
<td>High relevancy</td>
<td>High relevancy</td>
</tr>
</tbody>
</table>
### Table 2.12

Attribute Evaluation in $P_0$, $P_{e\text{-high}}$ and $P_{e\text{-low}}$ (Strong Brand)

<table>
<thead>
<tr>
<th></th>
<th>$P_0$</th>
<th>$P_{e\text{-high}}$, (level of Relevancy: high/low)</th>
<th>$P_{e\text{-low}}$, (level of relevancy: high/low)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability</td>
<td>5.36(1.43)</td>
<td>5.15(1.26)-high</td>
<td>4.81(1.35)low**</td>
</tr>
<tr>
<td>Innovative technology</td>
<td>5.02(0.97)</td>
<td>5.20(0.73)-high</td>
<td>5.11(0.91)high</td>
</tr>
<tr>
<td>Product customization</td>
<td>5.76(1.25)</td>
<td>5.22(1.12)-low**</td>
<td>5.32(1.08)low*</td>
</tr>
<tr>
<td>Convenient purchase</td>
<td>5.71(1.05)</td>
<td>5.47(1.13)-low*</td>
<td>5.25(1.25)low**</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>5.41(1.20)</td>
<td>5.40(1.37)-high</td>
<td>5.31(1.35)high</td>
</tr>
</tbody>
</table>

*P<0.05, **P<0.01

1 The asterisk(s) indicate(s) that the number is significantly different from the corresponding attribute evaluations in the $P_0$. A significant difference implies that most affect are NOT transferred to the extension category.
Table 2.13

Attribute Evaluation in $P_e$, $P_{e-high}$ and $P_{e-low}$ (Weak Brand)

<table>
<thead>
<tr>
<th></th>
<th>$P_0$</th>
<th>$P_{e-high}$ (portable DVD player)</th>
<th>$P_{e-low}$ (cell phone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affordability</td>
<td>4.37(1.07)</td>
<td>4.24(1.12)-high</td>
<td>4.18(1.07)-low</td>
</tr>
<tr>
<td>Innovative technology</td>
<td>4.57(0.96)</td>
<td>4.66(0.73)-high</td>
<td>4.74(0.99)-high</td>
</tr>
<tr>
<td>Product customization</td>
<td>4.64(1.21)</td>
<td>4.61(1.1)-low</td>
<td>4.63(0.92)-low</td>
</tr>
<tr>
<td>Convenient purchase</td>
<td>4.85(1.23)</td>
<td>4.94(1.05)-low</td>
<td>4.72(1.15)-low</td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>4.44(1.29)</td>
<td>4.74(1.21)-high</td>
<td>4.81(1.21)-high</td>
</tr>
</tbody>
</table>

**P<0.01  *P<0.05
Figure 2.1

Affect Transfer Comparison (Strong/Weak Brand)

- Dell
- Gateway
Appendix 2.1

Affect Transfer at the Attribute Level in Weak Brand Situation (Gateway)

Graph 1: High relevant attributes (parent vs. high-expectancy category)

Graph 2: low relevance attributes: parent vs. high-expectancy category

Graph 3: high relevance attributes: parent vs. low-expectancy category
Appendix 2.2: Study 1 Questionnaire

Part One

As part of its marketing strategy, Nike would like to enter other product categories. On the following pages, I would like you to evaluate several new products being considered by Nike. Your opinions are very important for the decision marking. Please evaluate each of these potential new products by circling the appropriate number on the following measures. Once you turn the paper, do not turn back to an earlier page.
Background Information

1. Have you heard of Nike before?
   - Yes
   - No

2. How familiar are you with the “Nike” brand?
   1. Not at all familiar
   2. Very familiar

3. How difficult is it to recognize Nike’s products among other products?
   1. Very difficult
   2. Very easy

4. Based on your knowledge and experience of Nike products, please indicate how much you agree or disagree with each of the following statements:
   a. I will feel good when I wear Nike running shoes.
      1. Strongly disagree
      2. Strongly agree
   b. Wearing Nike running shoes will make me happy.
      1. Strongly disagree
      2. Strongly agree
c. I will feel pleasure to wear Nike running shoes.

1 2 3 4 5 6 7
Strong Strongly
Disagree agree

1. I believe Nike running shoes are of:

1 2 3 4 5 6 7
Low quality High
product quality

2. I believe Nike running shoes are a(n):

1 2 3 4 5 6 7
Inferior Superior
product product

3. If you were going to buy a pair of running shoes in the next two weeks, how likely
would you be to buy Nike running shoes?

1 2 3 4 5 6 7
Very unlikely to Very likely to
buy buy

4. Imagine that you are going to buy a pair of running shoes in the next two Weeks.

Given that the fair price for a pair of average running shoes is $70.00, what would
you be willing to pay for the Nike running shoes? (Please circle the range that is
$49 or below $50-59 $60-69 $70-79 $80-89 $90-99 $100 or above
closest to what you are willing to pay)

I would be willing to pay $______________ for Nike running shoes.
Now Nike is considering expanding their product lines. Deciding whether to enter these different markets is strategically important to Nike. You are one of a small group being selected to take this survey, so your opinions are very important for Nike decision making.

**Nike Tennis Racket**

Imagine Nike Launches the new product of tennis racket.

5. If you had the opportunity to use the Nike tennis racket, please indicate how much you would agree with the following statements:

   a. I will feel good when I use the Nike tennis racket.

   1 2 3 4 5 6 7
   Strong Disagree

   b. Using Nike tennis racket will make me happy.

   1 2 3 4 5 6 7
   Strong disagree

   c. I will feel pleasure when I use the Nike tennis racket.

   1 2 3 4 5 6 7
   Strong Disagree
Based on all your knowledge about Nike products, please carefully evaluate the Nike tennis racket.

6. I believe the Nike tennis racket is:

1  2  3  4  5  6  7
Low quality  High quality

7. I believe the Nike tennis racket is a(n):

1  2  3  4  5  6  7
Inferior  Superior
product  product

8. If you were going to purchase a tennis racket, how likely would you be to purchase the Nike tennis racket?

1  2  3  4  5  6  7
Not at all likely to Very likely to
buy  buy

9. Imagine that you are going to buy a tennis racket in the next two Weeks. Given that the fair price of an average tennis racket is $50.00, what would you be willing to pay for a Nike tennis racket (Please circle the range that is closest to what you are willing to pay)

-$29.99 or below  $30-39.99  $40-49.99  $50-59.99  $60-69.99  $70-79.99  $80 or over

14. I would be willing to pay $____________ for the Nike tennis rackets.
15. I believe it is _______________ for Nike to make tennis rackets.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very inappropriate</td>
<td>Very appropriate</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

16. I believe it is _______________ for Nike to make treadmills.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very unfavorable</td>
<td>Very favorable</td>
<td></td>
<td></td>
<td></td>
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</table>

17. Just do it” is Nike’s slogan. How relevant is the idea of “Just do it” to tennis rackets.

<table>
<thead>
<tr>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Very irrelevant</td>
<td>Very relevant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18. “Just do it” is Nike’s slogan. How important is the idea of “Just do it” to tennis rackets.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very unimportant</td>
<td>Very important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Nike Treadmills**

A treadmill is a type of fitness equipment for running or walking. Imagine Nike launches its new product of treadmills.

19. If you had the opportunity to use a Nike treadmill, please indicate that how much you would agree or disagree with the following statements:

a. I will feel good when I use a Nike treadmill.
20. Based on all your knowledge about Nike products, please carefully evaluate the Nike treadmill.
   a. I believe the Nike treadmill will be of:
   Low quality
   1 2 3 4 5 6 7 High quality
   b. I believe the Nike treadmill is a(n):
   Inferior product
   1 2 3 4 5 6 7 Superior product

21. If you were going to buy a treadmill in the next two weeks, how likely would you be to buy the Nike treadmill?
   Not at all likely to buy
   1 2 3 4 5 6 7 Very likely to buy

22. Imagine that you were going to buy a treadmill in the next two weeks. Given that the fair price for an average treadmill is $400.00, what would you be willing to pay
for a Nike treadmill? (Please circle the range that is closest to what you are willing to pay)

$199 or below $200-299 $300-399 $400-499 $500-599 $600-699 $700 or above

23. I would be willing to pay $____________________ for a Nike treadmill.

24. I believe it is ________________ for Nike to make treadmills.

1 2 3 4 5 6 7
Very inappropriate Very appropriate

25. I believe it is ________________ for Nike to make treadmills.

1 2 3 4 5 6 7
Very unfavorable Very favorable

26. “Just do it” is Nike’s slogan. How relevant is the idea of “Just do it” to treadmills?

1 2 3 4 5 6 7
Very irrelevant Very relevant

27. “Just do it” is Nike’s slogan. How important is the idea of “Just do it” to treadmills.

1 2 3 4 5 6 7
Very unimportant Very important
As part of its marketing strategy, Haagen-Dazs would like to enter other product categories. On the following pages, I would like you to evaluate several new products being considered by Haagen-Dazs. Your opinions are very important for my decision marking. Please evaluate each of these potential new products by circling the appropriate number on the following measures. Once you turn the paper, do not turn back to an earlier page.

28. Have you heard of Haagen Dazs before?
   Yes [ ] No [ ]

29. How familiar are you with the “Haagen Dazs” brand?
   1 Not at all 2 3 4 5 6 7 Very
familiar

30. How difficult it is to recognize Haagen Dazs products among other products?

1  2  3  4  5  6  7
Very
difficult

31. Based on your knowledge and experience of Haagen-Dazs products, please indicate how much you agree or disagree with each of the following statements:

a. I will feel good when I have Haagen Dazs ice cream.

1  2  3  4  5  6  7
Strong
Disagree

b. Eating Haagen Dazs ice cream will make me happy.

1  2  3  4  5  6  7
Strong
Disagree

32. Please evaluate Haagen-Dazs ice cream:

a. I believe Haagen Dazs ice cream is of:

1  2  3  4  5  6  7
Low quality

High quality
c. If you were going to purchase ice cream, how likely would you be to buy Haagen Dazs ice cream.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inferior product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Superior product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

33. Imagine that you want to buy a gallon of ice cream. Given that the fair price for a gallon of average ice cream is $5.00, what would you be willing to pay for a gallon of Haagen-Dazs ice cream? Please circle the range that is closest to what you would be willing to pay:

- 2.99 or below
- 3.00-3.99
- 4.00-4.99
- 5.00-5.99
- 6.00-6.99
- 7.00-7.99
- 8.00 or above

34. I would be willing to pay $______________ for a gallon of Haagen Dazs ice cream.
Now Haagen Dazs is considering expanding their product lines. Deciding whether to enter these different markets is strategically important to Haagen Dazs. You are one of a small group being selected to take this survey, so your opinions are very important for Haagen Dazs decision making.

**Haagen Dazs dessert wine**

Dessert wines are those wines that are typically served with desserts. They are often sweet wines and served chilled.

Imagine that Haagen Dazs launches the new product of dessert wine.

36. If you had the opportunity to try the Haagen Dazs dessert wine, please indicate how much you would agree with the following statements:

a. I will feel good when I drink the Haagen Daze dessert wine.

1 2 3 4 5 6 7

   Strong Disagree

   Strongly agree

b. Drinking the Haagen Dazs dessert wine will make me happy.

1 2 3 4 5 6 7

   Strong Disagree

   Strongly agree

c. I will feel pleasure when I drink the Haagen Dazs dessert wine.

1 2 3 4 5 6 7

   Strong Disagree

   Strongly agree
37. Based on all your knowledge about Haagen Dazs products, please carefully evaluate the Haagen Dazs dessert wine.

a. I believe the Haagen Dazs dessert wine is:

1  2  3  4  5  6  7
Low quality  High quality

b. I believe the Haagen Dazs dessert wine is a (n):

1  2  3  4  5  6  7
Inferior product  Superior product

c. If you were going to purchase a dessert wine in the next two Weeks, how likely would you be to purchase the Haagen Dazs dessert wine?

1  2  3  4  5  6  7
Not at all likely to buy  Very likely to buy

38. Imagine that you are going to buy a bottle dessert wine in the next two Weeks. Given that the fair price of a bottle of average dessert wine is $20.00, what would you be willing to pay for Haagen Dazs dessert wine?


Please circle the range closest to what you are willing to pay:

39. I would be willing to pay $______________ for the Haagen Dazs dessert wine.

40. I believe it is ____________ for Haagen-Dazs to make dessert wines.

1  2  3  4  5  6  7
Very  Very
inappropriate appropriate

41. I believe it is ___________ for Haagen-Dazs to make dessert wines.

1 2 3 4 5 6 7
Very unfavorable Very favorable

42. The Haagen Dazs brand is associated with a premium image. How relevant is this image to dessert wines?

1 2 3 4 5 6 7
Very irrelevant Very relevant

43. The Haagen Dazs brand is associated with a premium image. How important is this image to dessert wines?

1 2 3 4 5 6 7
Very unimportant Very important

44. The Haagen Dazs brand is associated with the feeling of being indulgent. How relevant is this to dessert wines?

1 2 3 4 5 6 7
Very irrelevant Very relevant

45. The Haagen Dazs brand is associated with the feeling of being indulgent. How important is this to dessert wines?

1 2 3 4 5 6 7
Very unimportant Very important
**Haagen Dazs popcorn**

Imagine that Haagen Dazs launches its new product of popcorn.

46. If you have the opportunity to try the Haagen Dazs popcorn, please indicate how much you would agree with the following statements:

   a. I will feel good when I eat the Haagen Daz popcorn.

      1  2  3  4  5  6  7
      Strong Disagree  Strongly agree

   b. Eating the Haagen Dazs popcorn will make me happy.

      1  2  3  4  5  6  7
      Strong Disagree  Strongly agree

   c. I will feel pleasure when I eat the Haagen Dazs popcorn.

      1  2  3  4  5  6  7
      Strong Disagree  Strongly agree

47. Based on all your knowledge about Haagen Daz product, please carefully evaluate the Haagen Dazs popcorn.

   a. I believe the Haagen Dazs popcorn is:

      1  2  3  4  5  6  7
      Low quality  High quality

   b. I believe the Haagen Dazs popcorn is:
c. If you are going to purchase a bag of popcorn, how likely are you going to buy the Haagen Dazs popcorn?

1 2 3 4 5 6 7
Not at all likely to buy

Superior product

Inferior product

48. Imagine that you are going to buy a bag of popcorn in the next two weeks. Given that the fair price of a bag of popcorn is $4.00, what will you be willing to pay for Haagen Dazs popcorn?

$1 or below $2-2.99 $3-3.99 $4-4.99 $5-5.99 $6-6.99 $7 or above

Please circle the range closest to what you are willing to pay:

49. I would be willing to pay $ _____________ for the Haagen Dazs popcorn.

50. I believe it is _____________ for Haagen Dazs to make popcorn.

1 2 3 4 5 6 7
Very inappropriate

Very appropriate

51. I believe it is _____________ for Haagen Dazs to make popcorn.

1 2 3 4 5 6 7
Very unfavorable

Very favorable
52. The brand of Haagen Dazs is associated with premium image. How relevant is this image to the popcrons?

1 2 3 4 5 6 7
Very irrelevant Very relevant

53. The brand of Haagen Dazs is associated with the premium image. How important is this image to the popcorn.

1 2 3 4 5 6 7
Very unimportant Very important

54. The brand of Haagen Dazs is associated with the feeling of being indulgent. How relevant is this to the popcorn?

1 2 3 4 5 6 7
Very irrelevant Very relevant

55. The brand of Haagen Dazs is associated with the feeling of being indulgent. How important is this to the popcorn.

1 2 3 4 5 6 7
Very unimportant Very important
As part of its marketing strategy, Apple would like to enter other product categories. On the following pages, I would like you to evaluate several new products being considered by Apple. Your opinions are very important for the decision marking. Please evaluate each of these potential new products by circling the appropriate number on the following measures. Once you turn the paper, do not turn back to an earlier page.
56. Have you heard of Apple before?
   Yes     No

57. How familiar are you with the “Apple” brand?
   1  2  3  4  5  6  7
   Not at all familiar
   Very familiar

58. How difficult it is to recognize Apple’s products among other products?
   1  2  3  4  5  6  7
   Very difficult
   Very easy

59. Based on your knowledge and experience of Apple products, please indicate how much you agree or disagree with each of the following statements:
   I will feel good when I use Apple laptop computer.
   1  2  3  4  5  6  7
   Strongly agree

   Using Apple laptop computer will make me happy.
   1  2  3  4  5  6  7
   Strongly agree

   I will feel pleasure to use Apple laptop computer.
   1  2  3  4  5  6  7
   Strongly agree
62. Please evaluate Apple laptop computer:

a. I believe Apple laptop computer is of:

1  2  3  4  5  6  7
Low quality
High quality

b. I believe Apple laptop computer is a(n) :

1  2  3  4  5  6  7
Inferior product
Superior product

c. If you were going to buy a laptop computer in the next two Weeks, how likely would you be to buy Apple laptop computer?

1  2  3  4  5  6  7
Very unlikely to buy
Very likely to buy

63. Imagine that you are going to buy a pair of laptop computer in the next two Weeks. Given that the fair price for an average laptop computer is $700.00, what would you be willing to pay for the Apple laptop computer? (Please choose the range that is closest to what you are willing to pay)

$499 or below  $500-599  $600-699  $700-799  $800-898  $900-999  $1000 or above

64. I would be willing to pay $_____________ for Apple laptop computer.
**Apple PDA**

Now Apple is considering expanding their product lines. Deciding whether to enter these different markets is strategically important to Apple. You are one of a small group being selected to take this survey, so your opinions are very important for Apple decision making.

Imagine Apple launches its new product of PDA.

65. If you had the opportunity to try Apple PDA, please indicate how much you would agree with the following statements:

a. I will feel good when I use Apple PDA.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tr>
<td>Strong Disagree</td>
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<td></td>
<td></td>
<td>Strongly agree</td>
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</tbody>
</table>

b. Using Apple PDA will make me happy.

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<th>4</th>
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<th>6</th>
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<tbody>
<tr>
<td>Strong Disagree</td>
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<td></td>
<td></td>
<td></td>
<td>Strongly agree</td>
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</tbody>
</table>

c. I will feel pleasure when I use Apple PDA.

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<th>4</th>
<th>5</th>
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<tr>
<td>Strong Disagree</td>
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<td></td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

66. Based on all your knowledge about Apple products, please carefully evaluate the Apple PDA.
a. I believe the Apple PDA is:

1 2 3 4 5 6 7
Low quality High quality

b. I believe the Apple PDA is a (n):

1 2 3 4 5 6 7
Inferior Superior
product product

c. If you were going to purchase a PDA in the next two Weeks, how likely would you be to purchase Apple PDA?

1 2 3 4 5 6 7
Not at all likely to Very likely to
buy buy

68. Imagine that you are going to buy a PDA. Given that the fair price of an average PDA is $200.00, what would you be willing to pay for Apple PDA?

$99 or below $100-149 $150-199 $200-249 $249-300 $301-349 $350 or above

Please circle the range closest to what you are willing to pay:

69. I would be willing to pay $______________ for the Apple PDA.

70. I believe it is ____________ for Apple to make PDA.

1 2 3 4 5 6 7
Very Very
inappropriate appropriate
71. I believe it is ___________ for Apple to make PDA.

1 2 3 4 5 6 7
Very unfavorable
Very favorable

72. The Apple brand is associated with a fashionable image. How relevant is this image to PDA?

1 2 3 4 5 6 7
Very irrelevant
Very relevant

73. The Apple brand is associated with a fashionable image. How important is this image to the PDA?

1 2 3 4 5 6 7
Very unimportant
Very important

74. The Apple brand is associated with being innovative. How relevant is this to the PDA?

1 2 3 4 5 6 7
Very irrelevant
Very relevant

75. The Apple brand is associated with being innovative. How important is this to PDA?

1 2 3 4 5 6 7
Very unimportant
Very important
**Apple Portable DVD player**

Imagine Apple launches its new product of portable DVD player.

76. If you had the opportunity to try Apple portable DVD player, please indicate how much you would agree with the following statements:

a. I will feel good when I use the Apple portable DVD player.

1 2 3 4 5 6 7
Strongly Disagree

b. Using Apple portable DVD player will make me happy.

1 2 3 4 5 6 7
Strongly Disagree

c. I will feel pleasure when I use Apple portable DVD player.

1 2 3 4 5 6 7
Strongly Disagree

77. Based on all your knowledge about Apple products, please carefully evaluate the Apple portable DVD player.

a. I believe the Apple portable DVD player is:

1 2 3 4 5 6 7
Low quality

High quality
b. I believe the Apple portable DVD player is a (n):

1 Inferior
2
3
4
5
6
7 Superior
product
product

1
2
3
4
5
6
7

Not at all likely to
Very likely to
buy
buy

If you were going to purchase a portable DVD player in the next two Weeks, how
likely would you be to purchase Apple portable DVD player?

Imagine that you are going to buy a portable DVD player. Given that the fair price
of an average portable DVD player is $150.00, what would you be willing to pay
for Apple portable DVD PLAYER?

$99 or below
$100-124
$124-149
$150-174
$175-199
$200-224
$225 or

above

Please circle the range closest to what you are willing to pay:

I would be willing to pay $__________ for the Apple portable DVD player.

I believe it is ____________ for Apple to make portable DVD player.

I believe it is ____________ for Apple to make portable DVD player.
82. The Apple brand is associated with a fashionable image. How relevant is this image to portable DVD player?

1 2 3 4 5 6 7
Very unfavorable

Very favorable

83. The Apple brand is associated with a fashionable image. How important is this image to the portable DVD player?

1 2 3 4 5 6 7
Very unimportant

Very important

84. The Apple brand is associated with being innovative. How relevant is this to the portable DVD player?

1 2 3 4 5 6 7
Very unimportant

Very relevant

85. The Apple brand is associated with being innovative. How important is this to portable DVD player?

1 2 3 4 5 6 7
Very unimportant

Very important
Background Information

Please take a small break and refresh your mind. Regardless of all your previous answers, please answer the following questions:

86. How much do you expect a running shoes manufactures to make the following products:
   a. Tennis Rackets

<table>
<thead>
<tr>
<th>Highly expected</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
   Not surprising at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

   b. Treadmills:

<table>
<thead>
<tr>
<th>Highly expected</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
   Not surprising at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

87. Generally speaking, how much are you familiar with sports goods products (such as running shoes, tennis racket and treadmills)?

<table>
<thead>
<tr>
<th>Not familiar at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
   Very familiar
88. How much do you expect an ice cream maker to make the following products?

a. Dessert wine

<table>
<thead>
<tr>
<th>Highly expected</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Not surprising at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>6</th>
<th>7</th>
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<tr>
<td>Very surprising</td>
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</tbody>
</table>

b. Popcorn

<table>
<thead>
<tr>
<th>Highly expected</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Not surprising at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>Very surprising</td>
<td></td>
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</tr>
</tbody>
</table>

89. Generally speaking, how much are you familiar with dessert food (such as ice cream, dessert wine and popcorn)?

<table>
<thead>
<tr>
<th>Not familiar at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very familiar</td>
<td></td>
<td></td>
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</tbody>
</table>

90. How much do you expect a laptop computer manufacturer to make the following products?

a. PDA

<table>
<thead>
<tr>
<th>Highly expected</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
<tbody>
<tr>
<td>Highly unexpected</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Not surprising at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very surprising</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
b. Portable DVD player

<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly expected</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not surprising at all</td>
<td></td>
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</tr>
</tbody>
</table>

91. Generally speaking, how much are you familiar with electronic products (such as laptop computer, PDA, portable DVD player)?

<table>
<thead>
<tr>
<th>Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not familiar at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very familiar</td>
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</tbody>
</table>
Appendix 2.3: Questionnaire for Study 2 and 3

Background

As part of its marketing strategy, Dell would like to extend their products further. On the following pages, I would like you to evaluate several new products being considered by Dell. Please evaluate each of these potential new products by circling the appropriate number on the following measures. Please do not refer back to any of the information provided previously while responding to the following items.
Dell Personal Computer

1. Overall, how do you like the Dell PC?
Dislike a great deal  1  2  3  4  5  6  7  Like a great deal

2. How familiar are you with the “Dell” brand? (1 as least familiar and 7 as most familiar)
Least familiar   1  2  3  4  5  6  7Most familiar

3. Have you ever owned a Gateway personal computer? If so, please tell us whether you like the product? And Why.

4. Overall how would you rate a Dell PC?
Least desirable  1  2  3  4  5  6  7  most desirable
Least favorable  1  2  3  4  5  6  7  most favorable
Lowest quality  1  2  3  4  5  6  7  Highest quality
Not at all likely to try  1  2  3  4  5  6  7  very likely to try
5. In your opinion, how do you evaluate Dell PC from following perspectives:

<table>
<thead>
<tr>
<th>Least Affordable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Most Affordable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least innovative technology</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Most innovative technology</td>
</tr>
<tr>
<td>Very inconvenient product customization</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very convenient product customization</td>
</tr>
<tr>
<td>Very inconvenient product purchase</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very convenient product purchase</td>
</tr>
<tr>
<td>Very unsatisfying customer satisfaction</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very satisfying customer satisfaction</td>
</tr>
</tbody>
</table>
**Dell Portable DVD Player**

Dell is considering developing products of portable DVD player. In addition, you opinions will be important for their decisions.

6. How similar is a Dell portable DVD player to a Dell Personal Computer?

   Very dissimilar 1 2 3 4 5 6 7 Very similar

7. Overall, how will you like the Dell Portable DVD player?

   Dislike a great deal 1 2 3 4 5 6 7 Like a great deal

8. Based on your current opinion of Dell PC, how will you predict Dell portable DVD player’s performance?

   Most undesirable 1 2 3 4 5 6 7 most desirable
   Most unfavorable 1 2 3 4 5 6 7 most favorable
   Lowest quality 1 2 3 4 5 6 7 highest quality
   Not at all likely to try 1 2 3 4 5 6 7 very likely to try
**Dell Portable DVD Player**

9. Based on your current opinion of Dell PC, how will you predict Dell Portable DVD player's performance in the following areas?

<table>
<thead>
<tr>
<th>Least Affordable</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
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<th>7</th>
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<td>4</td>
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<td>7</td>
<td>Most innovative</td>
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<td>Very</td>
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<td>4</td>
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</tr>
<tr>
<td>Lowest picture</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Highest picture</td>
</tr>
<tr>
<td>quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>quality</td>
</tr>
</tbody>
</table>
Dell Cell Phone

Dell is also considering entering the market of Cell Phone. Your opinions will help them to predict their performance in this new area.

10. How similar is a Dell cell phone to a Dell PC?
Very dissimilar 1 2 3 4 5 6 7 Very similar

11. Overall, how will you like the Dell Cell Phone?
Dislike a great deal 1 2 3 4 5 6 7 Like a great deal

12. Based on your current opinion of Dell PC, how will you predict Dell portable cell phone’s performance?
Most undesirable 1 2 3 4 5 6 7 most desirable
Most unfavorable 1 2 3 4 5 6 7 most favorable
Lowest quality 1 2 3 4 5 6 7 highest quality
Not at all likely to try 1 2 3 4 5 6 7 very likely to try
13. Based on your current opinion of Dell PC, how will you predict Dell cell phone’s performance in the following areas?

<table>
<thead>
<tr>
<th>Area</th>
<th>Least Affordable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Most Affordable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Least innovative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Most innovative</td>
</tr>
<tr>
<td>Customization</td>
<td>Very inconvenient</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very convenient</td>
</tr>
<tr>
<td>Product Purchase</td>
<td>Very inconvenient</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very convenient</td>
</tr>
<tr>
<td>Customer Service</td>
<td>Very unsatisfying</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Very satisfying</td>
</tr>
<tr>
<td>Voice Quality</td>
<td>Lowest voice quality</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Highest voice quality</td>
</tr>
<tr>
<td>Picture Quality</td>
<td>Lowest picture display quality</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>Highest picture display quality</td>
</tr>
</tbody>
</table>
14. Finally, for classification purposes only, please circle the response below that best describes you. Remember, your information is anonymous and will not be associated with your name.

What is your major? _____________________________

What year are you in? ______________

Freshman

Sophomore

Junior

Senior

You are______________.

Female

Male

You age is between:

Under 18

18-25

26-35

Above 35

Thanks for your participation!
CHAPTER 3

ESSAY TWO: THE NETWORK EFFECTS OF PRODUCT PORTFOLIO CHARACTERISTICS ON PARENT BRAND EQUITY

3.1 Introduction

Brand extension is an important strategy to leverage brand equity. As brand extensions penetrate the market, best-selling brands are now as prolific as rabbits. For example, products under the Panasonic brand include consumer electronics, bicycles, and small home appliances. Similarly, the Yamaha name appears on products as diverse as motorcycles, acoustic musical instruments, sporting equipment and consumer electronics. Products that become associated with a successful brand not only increase in number but also in diversity.

Although brands extend to a portfolio of products (Dacin and Smith 1994), few studies in brand extension involve more than one extension category ($P_e$). The question becomes whether findings from the single-extension studies can still hold for a portfolio of $P_e$s. This study serves as a starting point to shed some light on this issue. The study goal is to explore the impact of product portfolio characteristics on parent brand ($B_0$) equity. Specifically, three characteristics of a portfolio are addressed: the portfolio size, the similarity among products in a portfolio, and the presence of attribute compatibility. How these three factors influence the brand equity of $B_0$ is the central research question of this study.
Literature examining the portfolio effects on the parent brand is limited, so the study begins with a discussion of studies of single \( P_e \) impact on \( B_0 \). The theory of economic network helps explain the reciprocal effects from a whole portfolio to \( B_0 \), followed by hypotheses regarding portfolio impact. Next, an experiment was conducted to test the hypotheses. The study concludes with a discussion of findings and implications for brand management theory and practice.

3.2 Literature Review

3.2.1 Single Reciprocal Effect

Brand extension is a strategy whereby companies extend a brand (\( B_0 \)) from a parent category (\( P_0 \)) to a new product category (\( P_e \)). The literature addresses two types of effect: spillover effect and reciprocal effect. Spillover effect explains how a strong brand leverages brand equity in \( P_e \). Generally, consumers favor an extension close to \( P_0 \). Two constructs capture the close relationship between \( B_0P_0 \) and \( B_0P_e \): the perceived fit between \( P_0 \) and \( P_e \) (Aaker and Keller 1990) and the relevancy of \( B_0 \) associations to \( P_e \) (Broniarczyk and Alba 1994). Reciprocal effect refers to the consequences of a brand extension on the parent brand. Research explores two types of reciprocal effects: dilution effect and enhancement effect. Dilution happens when a \( B_0P_e \) decreases consumers’ evaluation of the \( B_0P_0 \), and enhancement occurs in the opposition direction.

The first stream of literature examines the dilution effects at both the product (Keller and Aaker 1992; Romeo 1991) and attribute level (Loken and John 1993). At the product level, negative information about \( B_0P_e \) has no impact on consumers’ evaluation
of $B_0$. Studies manipulating negative information as either a within-subject or between-subject factor reach the same conclusion—that the dilution effect was not observed (Keller and Aaker 1992; Romeo 1991). At the attribute level, negative information about $B_0P_e$ decreases the attribute evaluation of $B_0$ (Loken and Johnson 1993). Two theories provide the explanation: bookkeeping (Weber and Crocker 1983) and typicality (Rothbart and Lewsi 1988).

The bookkeeping model proposes that beliefs change incrementally as new information is received (Weber and Crocker 1983). Then, $B_0$ is diluted when any new information about $P_e$ changes consumers’ beliefs about $B_0$. Such dilution becomes evident when the extension contains inconsistent information as to the parent brand (Gurhan-Calin and Maheswaran 1998; Loken and John 1993). Whereas the bookkeeping model explains the dilution effect regardless of the relationship between $P_0$ and $P_e$, the typicality argument considers such a relationship. It proposes that information about a typical extension has more weight than that of a less typical extension. Compared with the failure of an atypical $P_e$, negative information about a typical extension has more impact on $B_0$ (Loken and John 1993). However, when an extension is extremely atypical to the parent product category, information about the atypical extension is considered an exception and categorized as a subtype, with a separate set of beliefs associated with each subtype (Weber and Crocker 1983). The formation of the subcategory inhibits the dilution effects from $P_e$ to $B_0$. As a result, consumers discount or even discharge inconsistent information from a sub-typed category.
This stream of literature also suggests that the degree of dilution effect depends on the dominance of B₀ with a specific association. Dominance refers to the strength of a brand’s associations (Leong, Ang and Lain 1997). Associations can be a specific product category, a product usage situation, or a product attribute to the consumer’s benefit. Studies show that the dominance of a brand helps decrease the dilution effect from a failed extension (Leong, Ang and Lain 1997). When a brand is dominated by a specific association, the link between the brand and the associated dimension is strong (Fazio and Zanna 1978) and is easy to access (Petty and Krosnick 1994). For example, Heinz is a dominant brand in the ketchup category. The link between Heinz and ketchup is strong in consumers’ memory networks. The strong link encapsulates the brand with the ketchup and protects the brand from being diluted by negative information from other extensions. The dilution effect is observable only when the extension is close to the parent product (John, Loken and Joiner 1998).

A second stream of literature emphasizes the benefits of brand extensions. Balachander and Ghose (2003) finds that P₀ benefits from advertising of Pₑ, and provides three theories to support this. First, products under the same brand benefit each other with their advertisements, resulting in less advertising expenditure for each product (Smith 1992). In this sense, economies of information are realized when an advertised product produces a “halo effect” that increases sales of other products (Morein 1975). Secondly, the signaling theory explains the role of extension products in enhancing the parent brand’s ability to extend. Wernerfelt (1988) suggests that all products under the same umbrella brand serve as performance bonds for each other and for the next possible extension. A low-quality extension product will decrease
consumers' perception of the quality of all other extensions. Thus, the more products are under one brand, the stronger the performance bond becomes. Any new extension adding a performance bond to the umbrella brand enhances the perceived quality of the brand's next extension.

A third theory supporting the enhancement effect is the theory of consumer memory network. Consumers' brand knowledge is conceptualized as a network of nodes connected by links. This knowledge includes various aspects of a brand, such as brand associations, products under that brand, brand image, etc. All these concepts are linked together by the brand name. The stronger the link, the easier it is to activate that link. The link between B₀ and its flagship product is the strongest one. Therefore, an advertisement of any product under this brand will activate the entire brand schema. Consequently, the strongest link between the brand and its flagship product is then highlighted. The flagship product can benefit from the advertisement of any other products under the brand.

Previous studies have focused on the reciprocal effects from a single extension. To clarify, I define such reciprocal effects as “product reciprocal effects,” and define “network reciprocal effects” as the effects of the overall product portfolio on the umbrella brand. This study examines the network reciprocal effects from three characteristics of the extension portfolio: portfolio size, similarity among products, and the presence of attribute-compatibility. The economic theory of network effects helps explain how these factors influence the brand equity of B₀.
3.2.2 The Economic Network Theory

The economics concept of network effect suggests that the utility a user derives from the consumption of the good increases with the number of other agents consuming the good (Katz and Shapiro 1985). Sources of such network effects are called network externalities. For example, the utility that a consumer can derive from a cell phone increases as the cell phone user base grows. The increase in utility is an illustration of positive externalities due to the network increase.

Katz and Shapiro (1985) identifies three sources for network externalities: the size of the customer bases, the availability of compatible products, and the quality of post-purchase service. First, for some product categories, the product utilities increase as the customer base increases. Products exhibiting such characteristic are called “network products.” More and more products exhibit these network effects as the developing technology make them interconnected (Srinivasan, Lilien and Rangaswamy 2004). Examples include MP3 players, digital cameras, digital videodisc players, and PCs. Second, products become more useful to consumers as the variety and availability of the compatible products increase. The success of many software products provides support for this argument. The operation system of Microsoft Windows becomes more useful as the number of Windows-compatible software products increases. A third source of the positive network effect arises as the availability of post-purchase service increases. Domestic auto dealers benefit from providing well-developed post-purchase service across the country. The network gives consumers convenience and influences
their car purchase decisions. This advantage inhibits foreign automobile manufacturers from entering the domestic market.

Studies explore the implication of these positive network effects in different marketing areas: (1) customer behavior and market structure (Frels, Shervani, and Srivastava 2003; Shankar and Bayus 2003), (2) software pricing (Xie and Sirbu 1995), and (3) market entry (Gupta, Jain, and Sawhney 1999). A consistent finding is that network externalities change consumer behavior in adopting products and thus become important for the marketing strategy (Srinivasan, Lilien and Rangaswamy 2004).

So far, the network theory examines product utility at the market level. Previous studies consider the whole customer base as a network and examine how the changes in the network influence consumers’ benefits from each product. This study views the whole product portfolio under B₀ as a network. B₀ has a portfolio of products. The network theory helps explain how the portfolio characteristics change each product utility. Since all these products are linked by a single brand (B₀), I suggest that changes in each product utility will be reflected in the brand equity of B₀.

3.3 Conceptual Framework and Hypothesis Development

3.3.1 Overview of the Network Effects on the Product Portfolio

Katz and Shapiro (1985) suggests that positive network externalities arise from two aspects: increased customer base of product A (Pᵢ) or product A’s compatibles (Pᵢⱼ). The first is known as direct network externalities and the second is the indirect network externalities. In this study, the whole product portfolio consists of a network. An umbrella
brand \((B_0)\) includes a set of products \((P_i, i=1, \ldots, n)\). Each product can also have \(n\) compatible products \((P_{ij}, i=1, \ldots, n; j=1, \ldots, m)\) under the brand \(B_0\). The value of each product in the network depends on not only the product itself, but also the network characteristics.

Each product in this network has two sources of values: intrinsic value and extrinsic value (Lee and O’Connor 2003). Intrinsic value is related to the feature designed to improve the product itself. Extrinsic value is the set of benefits derived from outside the product, such as the customer base or the availability of the compatibility products. For example, the extrinsic value of a fax machine lies in the size of its customer base. Fax machines become more useful as more people use them. Products’ network effects change with products’ extrinsic value but not the intrinsic value.

The network effects are a function of the network size and the compatibility among the network. In this context, the network size is defined as the number of products under an umbrella brand. The compatibility within a portfolio exists at two levels: at the product level and at the attribute level and. To clarify, the first is product compatibility, and operationalized as the similarity among the products. The second is attribute compatibility.

### 3.3.2 Product Portfolio Size

The network theory suggests a positive relationship between network size and product benefits. As the size grows, the benefit derived from each product increases. Similarly, the signaling theory suggests that portfolio size serves as a signal to reduce consumers’ uncertainties about the brand (Erdem and Swait 1998). Research in
information economics provides a further explanation for this positive relationship. Klein and Leffler (1981) suggest that a brand’s investments and its reputation for high quality (Shapiro 1983, 1985) ensure its continuing commitment to high quality. Adding a new product to an umbrella brand’s portfolio increases the company’s stake in this brand. The greater the stake involved, the more commitments a company makes to the brand. In that sense, consumers view the size of the portfolio of a brand as collateral. A large-size portfolio reduces consumers’ uncertainties about that brand, resulting in increased confidence in the brand.

Brand portfolio studies further find that such a positive relationship is asymptotic (Dacin and Smith 1994). As the number of products associated with a brand increases, the marginal benefit added by a new product diminishes. Meanwhile, other studies suggest possible negative effects due to size increase. Boush and Loken (1991) posits that a large product portfolio diffuses a brand’s product associations. A brand’s product associations refer to benefits brought by a brand to a specific product category. For example, the toothpaste brand Colgate is associated with cavity fighting. Such an association is specific to the dental care product category, i.e., as toothpaste and mouthwash. As the number of products associated with a brand increases, the link between the brand and any product associations becomes weak. Therefore, the brand’s product associations are diluted.

Based on the previous argument, I suggest an inverted U relationship between product portfolio size and brand equity:
H1: The product portfolio size increases a brand’s equity up to an optimal level beyond which dilution will occur.

3.3.3 Similarity

Compatibility at the product level also enhances the network effects. To distinguish this from attribute-level compatibility, this study uses the term “similarity” to signify product-level compatibility. In this context, similar products are chosen to fill different aspects of a consumer’s composite needs and therefore are possible to be consumed jointly (Lattin and McAlister 1985; Walters 1991). For example, PDAs (Personal Digital Assistance) are often used together with computers for data transfer. These two are considered similar from this perspective.

The similarity across products moderates the size impact. First, similarity influences the quality of the size signal. Signaling theory (Erdem and Swait 1998) suggests that the consistency of a brand influences its signal quality. Consistency relates to the conformity within each marketing element, such as variations in marketing messages, stability of brand images over time, or combinations of products. Since this study highlights the relationship between product portfolio and brand equity, similarity indicates the consistency of product types within a portfolio. A similar product combination of a brand enhances the clarity of the brand signal. As the size of the product portfolio serves as a brand signal, the similarity of product combination moderates the clarity of such a signal. Given equal size of product portfolio, a brand with a high-similarity portfolio has a stronger signal in reducing consumers’ uncertainties about a brand than one with a low-similarity portfolio. Therefore, I suggest:
H₂: Consumers place a higher value on a similar portfolio than on a dissimilar portfolio.

3.3.4 Attribute Compatibility

Attribute compatibility is different from similarity. The first one is at the product level. A portfolio with attribute compatibility has features linking products together. For example, Canon digital cameras features “direct-print” support. Cameras can plug into compatible Canon printers and print pictures directly. The compatibility feature adds utility to the product in the presence of other products (Chernev 2005).

Network effects suggest that consumers value compatibility between two products. When two products are compatible, consumers derive higher utility from each product. Product bundling literature identifies several sources for the increased utility, including reduction in compatibility risk and reduction in search costs.

Compatibility risk is the risk associated with joint functionality (Harrisy and Blair 2006a). It suggests that the bundling of products reduces the compatibility risk. Consumers perceive that bundled products are more likely to perform well than non-bundled items, because products in a bundle are designed to go together (Lawless 1991; Wilson, Weiss and John 1990). In addition, when the functional compatibility risk is primed as salient, the preference for bundles tends to increase as a way of reducing the compatibility risk (Harrisy and Edward 2006a).

Reduced search cost is the other benefit from compatible products. Studies (Guiltinan 1987; Harris and Blair 2006b) show that reduced search cost is an important
reason for consumers to select bundled products. As the bundled products reduce the compatibility risk, they also save consumers’ search time and ease decision making.

In essence, the availability of compatible products under the same brand adds value to the product itself. Consumers place a higher value on a brand offering products that work together than on a brand without such an offer. As in the previous example of the Canon printer and digital camera, the compatibility between these two reduces consumers’ concerns about the connectivity between a photo printer and a digital camera. Furthermore, offering the same products under a single brand saves consumers’ time to find other printers to work with Canon digital cameras. To summarize, Canon increases the utilities of both camera and photo printer by offering direct plug-in technology.

As compatibility increases each product’s utility, the brand offering attribute compatibility among its product portfolio will receive higher evaluation than the brand without such a feature. Based on that, the study posits:

**H3:** Consumers place a higher value on a brand with attribute compatibility among its product portfolio than without.

In conclusion, the study examines the relationship between brand equity and product portfolio characteristics. As the products in the portfolio are under an umbrella brand, the increased utilities are reflected in its brand equity.

### 3.3.5 Brand Equity Measurement

The literature examines brand equity in several dimensions (Ailawadi, Lehmann and Neslin 2003): the factors that influence it, the perspectives from which it should be
studied, and the ways to measure it. Despite all these different views, studies agree on
the general definition of brand equity. The simplest one defines brand equity as the
added value endowed by the brand to the product (Farquhar 1989). The value can be
measured along three dimensions (Ailawadi, Lehmann and Neslin 2003): consumers’
perspectives, product-market outcome, and financial markets responses.

Measuring brand equity from consumers’ perspectives focuses on the sources of
brand equity, such as strength and favorability of brand associations, brand awareness,
brand images, and the brand’s diagnostic ability (Aaker 1991; Farquhar 1989; Keller
1993, 2003). This approach analyzes different sources that contribute to brand equity
but fails to connect to the dollar-value measures (Keller 2003). A second way is to
measure through the outcome of brand equity in the product market. The most
commonly used measurement is the price premium, that is, the ability of a brand to
charge a higher price than an unbranded product (Aaker 1991, 1996; Agarwal and Rao
1996). A third way is to measure the financial market’s outcome. Indexes used in
previous studies include the acquisition price of the company’s goodwill asset (Mahajan,
Rao, and Srivatava 1994), discounted cash flow valuation of licensing fees and royalties,
or the residual market value of the company after all other sources except the brand
equity have been accounted for (Simon and Sullivan 1993). A limitation is that the
goodwill asset reflects many other aspects of the company being acquired, such as
patent rights, copyrights, etc. Brand equity is only part of a company’s goodwill.
Therefore, such measurement of brand equity may not have immediate relevance to a
specific brand (Ailawadi, Lehmann and Neslin 2003). Especially when a company owns
more than one brand, it is difficult to attribute such financial outcome measures to a single brand.

This study selects the price premium as a way to capture the impact of network effects on brand equity. First, economists use price as a proxy for consumers’ benefits to test the effects of network externalities (Brynjolfsson and Kemerer 1996; Gandal 1994). The increased value of a product should increase the amount of money consumers are willing to pay. Second, price premium is probably the best single measure of brand equity available (Aaker 1996). Any variables that have no effects on the price premium may have little value as indicators of brand equity as well.

3.4 Methodology

The study investigates three product portfolio characteristics: portfolio size, similarity within the portfolio, and the presence of attribute compatibility, and captures these impacts on the umbrella brand of the portfolio. Previous brand portfolio studies have tested the first two factors (Dacin and Smith 1994; Meyvis and Janiszewski 2004). This study extends these studies and focuses on examining the new factor of attribute compatibility.

3.4.1 Pretest

The pretest had two purposes. One was to select a product portfolio with two levels of similarity, and the other was to ensure that the compatible attribute presented in the study was important in brand evaluation. Table 3.1 listed the stimulus developed by the pretest. First, 27 participants confirmed that products in the high-similarity group were more similar to each other ($M_{\text{with 6 products}} = 3.71$, $M_{\text{with 2 products}} = 3.29$) than those in the
low-similarity group portfolio (M with 6 products = 2.86, M with 2 products = 1.86). Next, subjects rated the importance of two types of attribute-compatibility. One was for products under a portfolio to share the same type of battery, and the other was built-in wireless features. Results showed that the built-in wireless feature was more important than the battery-share feature (M built-in wireless = 5.70, M shared battery = 4.59). Thus, I picked the built-in wireless feature as the attribute compatibility for the study. In addition, the pretest also confirmed that participants had no prior knowledge of any of the four brands used in the study. Previous studies also used anonymous brands to examine the portfolio characteristics (Dacin and Smith 1994; Meyvis and Janiszewski 2004).

3.4.2 Subjects and Design

One hundred and thirty-seven college students participated in the experiment. The study was a 2 (with/without compatibility) by 2 (product sets: high-similarity/low-similarity) by 3 (number of products in a set: 2, 4, or 6) design. Compatibility was a between-subject factor that presented subjects with a product set either with attribute compatibility or without. Product similarity was a within-subject factor capturing the overall similarity among products in a set. The number of products in each set was a between-subjects factor with three levels: small (2 products), median (4 products) and large (6 products). The presentation order of the high-similarity or low-similarity product sets was counterbalanced.

To summarize, each subject evaluated two product sets of the same size (2 or 4 or 6). These two sets of products differed in the level of similarity (high/low) and the
presence of compatibility (with or without). Appendix 3.1 provided a detailed illustration of the experimental procedure.

3.4.3 Procedure

The experiment was administered in small groups, up to eight subjects per session. Subjects were told that companies would like to introduce new brands to the local market. Their opinions would be critical for the companies’ decision-making, since each of them was among a small selected group.

The experiment consisted of two parts. In the first part, each participant carefully read the product descriptions for a set of products. Then subjects answered questions about their opinions of the brand and the products under that brand. In the second part, they were presented with a new brand. The product set of the new brand differed from the first part in two aspects: one was the level of similarity (high or low) and the other was the presence of attribute compatibility (with/without). The same set of questions was asked in the second part. Then, subjects answered background questions about their familiarity with the product sets. In the end, the subjects were debriefed. The order of presentation of attribute compatibility was counterbalanced.

3.4.4 Dependent Measures

Two dependent variables captured the impact of the portfolio characteristics: brand equity and consumers’ brand evaluations. Brand equity was measured by the price premium for the whole product portfolio. This was the average of the price premium
of each product in the portfolio. The price premium of each product was taken as the percentage difference between the fair price for an average brand and the price participants indicated they were willing to pay for the branded product (Kalra and Goodstein 1998; Monroe 1990). Subjects answered the same question for each product: “Given that the fair price for a product with average quality is $X, what would you be willing to pay for the same product under Brand A?” For example, for a brand with four products in its portfolio, a price premium of 10 indicated subjects were willing to pay a price 10% higher than the average market price for each product under this brand.

The other dependent variable was consumers’ evaluation of the brand. The measure consisted of three seven-point semantic differential scales (Keller and Aaker 1992): low quality/high quality, inferior products/superior products, and not at all likely to try /very likely to try.

3.4.5 Results

Manipulation Checks I checked the manipulation of similarity. Similarity was measured at the sub-group level by the seven-point scale (7 as very similar and 1 as not similar at all). All three product sets with different numbers of products (n=2,4,6) were divided into two sub-groups. Table 3.1 listed the products in each sub-group. Subjects rated the similarity between the two sub-groups within each product set. The similarity results in Table 3.2 confirmed that, across three different portfolio sizes, the high-similarity group scores were significantly higher than the low-similarity group. Therefore, manipulation of the similarity was valid.
Overall Portfolio Characteristics on Brand Equity

An ANOVA on the price premium revealed that umbrella price premium was significantly influenced by all three factors (see Table 3.3): the product size ($F_{2,220}=4.39$, $P<0.01$), the closeness among products ($F_{1,220}=8.36$, $P<0.01$), and the presence of compatibilities ($F_{1,220}=5.79$, $P<0.01$). Table 3.3 also indicated that no interaction effects among the three factors were significant. To gain some insights into each factor, these factors were discussed separately.

Size Effect on Brand Equity

Overall, the increase in portfolio size decreased brand equity. For the product set of two, consumers were willing to pay a 16.44% price premium. This number dropped to 7.39% for the product set of 4, and further to 1.46% for the set of 6 ($M_{2\text{ product set}}=16.44$, $M_{4\text{ product set}}=7.39$, $t=1.73$, $P<0.1$; $M_{4\text{ product set}}=7.39$, $M_{6\text{ product set}}=1.46$, $t=1.34$, $P=0.18$). This suggested that the diversification effects overrode the signal effects as the portfolio size increased. Part of the reason for the absence of signal effect may result from the anonymous brand used in this study. Since subjects had not heard of any brand used in the study, the signaling role of the brand itself was weak. Therefore, the strengthened signal caused by the increased size failed to exhibit. In general, $H_1$ was partly supported, in that the results reflected the dilution effect from the size increase but did not evidence the positive size effect.

Further analysis of the size effect within each level of the similarity confirmed the pattern. Table 3.4 indicated that within each level of similarity (high/low), brand equity decreased as size increased. In addition, brand equity difference was smaller when the portfolio similarity was high. Within the high-similarity portfolio, the brand equity
difference between the product set of two and the product set of six was 10.28. Such difference increased to 19.54 in the low-similarity portfolio. Thus, similarity among the product set mitigates the dilution effects caused by the increased portfolio size.

**Similarity Effect on Brand Equity** Consistent with H2’s prediction, subjects placed a higher value on a similar product portfolio than on a less similar one. A consistent pattern in Table 3.4 supported the argument. In addition, the similarity effect increased with the portfolio size. Within the product set of six, the portfolio showed the largest brand equity difference between the high-similarity portfolio and the low-similarity one (Mean Difference \( \text{6 product set} = 14.5, t = 2.65, P<0.01 \)). Such difference was still significant in the product set of four (Mean difference \( \text{4 product set} = 13.5, t = 2.1, P<0.05 \)) but not in the product set of two (Mean difference \( \text{2 product set} = 5.54, t = 0.66, P=0.5 \)). Results confirmed the previous findings in this study, that similarity moderated the dilution effects on brand equity. As the size increased, the advantage of similarity became obvious.

**Attribute- Compatibility Effect on Brand equity** Overall, the brand equity of a portfolio with attribute compatibility scored significantly higher than the brand equity without (M with attribute-compatibility = 13.36, M without attribute-compatibility = 3.91, t=2.31, P<0.05). Brand equity captured how much more consumers were willing to pay for the branded product than for non-branded products. Therefore, with all other portfolio characteristics being equal, consumers, on average, were willing to pay 9.45% more for products with attribute compatibility. I further divided the group into three by portfolio size. Within each product set, I examined the effects of attribute compatibility and similarity.
Table 3.5 compared brand equity with and without attribute compatibility. With the two other factors (portfolio size and group similarity) being equal, the brand with attribute compatibility consistently rated higher than the brand without. Thus, H3 was supported. Beyond that, two findings were noteworthy. First, the degree of the positive attribute-compatibility effect was stronger in the high-similarity group than in the low-similarity group. The attribute effect was indicated by the difference between the branded product with attribute compatibility and the one without. Table 3.5 showed that, among three high-similarity groups, two groups display a significant attribute-compatibility effect, while among the other three low-similarity groups, the differences between with attribute compatibility and without were insignificant.

The other finding was that the attribute effect had a curvilinear relationship with the portfolio size. Within the product set of four, the presence of attribute-compatibility significantly increased brand equity (M difference in brand equity = 12.53, P<0.05). Within the product set of two or six, the attribute-compatibility effect was positive but not statistically significant. This means that the brand offering attribute compatibility was still rated higher than the brand without such an offer, but the difference between these two ratings was not statistically significant (product set of 2: M difference in brand equity = 8.156, P=0.4; product set of 6: M difference in brand equity = 7.03, P=0.4). I explained this as the two-sided effects of attribute compatibility. On one side, attribute-compatibility brought consumers convenience for easily connecting products together. When the number of products connected by a feature increased from two to four, benefits from each product also increased. For example, initially digital cameras could only communicate wirelessly with digital camcorders. As the portfolio size increased to four, the digital camera could
wirelessly connect to the other three products. Thus, the digital camera became more useful and consumers were willing to pay a higher price premium for that.

On the other side, participants in the study also expressed concern choice limitation for future purchases. Subjects valued the wireless feature connecting products under Brand A. However, they might only want to buy two products under that brand, and products they bought from other brands would not connect to Brand A products seamlessly. In this case, if Brand A had a large portfolio of products, consumers were quite certain that they would not get the full benefits of attribute compatibility, since they were unlikely to use all these products under that brand. Thus, part of the price premium paid for the attribute compatibility would be wasted. Such concerns reduced the price premium for the brand with a large portfolio.

**Overall Portfolio Characteristics of Brand Evaluation**  Brand evaluation was the other dependent variable in the study. Table 3.6 listed the results of ANOVA on brand evaluation. Results confirmed that compatibility significantly influenced brand evaluation (F=15.13, P<0.01). In addition, two interaction effects were significant: interaction between similarity and attribute compatibility, and interactions among the three main effects. Therefore, I divided the sample by size and then by similarity in order to examine the attribute-compatibility effect. After that, I discussed some interaction effects among the three factors and their implications.

**Attribute-Compatibility Effect on Brand Evaluation**  T-test results in Table 3.7 show that, across different levels of similarity and portfolio sizes, the brand with an
attribute-compatibility portfolio consistently scored higher than the brand without. Therefore, H₃ was confirmed for brand evaluation as the dependent variable.

The ANOVA in Table 3.7 yielded two significant interaction effects: the interaction between attribute compatibility and similarity ($F_{1,222}=3.7$, $P<0.1$), and the interactions among all three factors ($F_{2,222}=3.1$, $P<0.05$).

**Interaction between Similarity and Attribute Compatibility**  
The main effect of compatibility was moderated by similarity between the portfolios. When similarity was high, the presence of compatibility significantly increased brand evaluation ($F_{1,116}=15.93$, $P<0.01$). In contrast, with low similarity, the effect of compatibility on the brand evaluation was not significant ($F_{1,111}=2.06$, $P=0.15$). This result was consistent with the findings with brand equity as the dependent variable.

**Interaction among Three Factors**  
To examine the interaction among three factors, I analyzed results in two separate groups: the high-similarity product set and the low-similarity product set.

For the high-similarity product set, the portfolio size interacted with the presence of attribute compatibility ($F_{2,116}=3.17$, $P<0.05$). Figure 1 showed the effect of portfolio size on brand evaluation. First, the portfolio with attribute compatibility scored higher on brand evaluation than the portfolio without such compatibility. This argument held across both groups (the high-similarity group and the low-similarity group), as shown in Figure 3.1. Second, the compatibility moderated the relationship between portfolio size and brand evaluation. A possible reason was that the compatibility cancelled out the dilution
effect. Dilution effect happened as brand extensions diluted the brand’s product associations. The compatibility highlighted the connections among products and thus reduced the negative impact of the dilution effect.

In the low-similarity set, compatibility had the biggest advantage in the product size of two. The advantage of such attribute compatibility decreased as the product size grew. Compared with the high-similarity set, low-similarity products were less likely to be used together. The more products were involved in a portfolio, the lower the chances that consumers would fully enjoy the benefit of attribute compatibility. Therefore, as the size grew, the value of the compatibility was reduced. Consequently, brand evaluation also decreased.

3.5 Conclusions and Discussions

The study applies network externalities theory to explain the portfolio characteristics of brand equity. As the study addresses three portfolio characteristics (size, similarity and attribute compatibility), this study first highlights the role of attribute compatibility. First, results demonstrate that consumers do value the attribute compatibility of a product portfolio. Next, the similarity among the product set enhances the attribute-compatibility impact. This makes sense, since attribute compatibility brings extra convenience when products are used together. The more similar products are to each other, the higher the chances that consumers will use these products together. In other words, consumers do recognize the value of attribute compatibility in the product portfolio. They put more value on this feature as the chances of using this feature increase.
In addition, examining the portfolio size effect reveals an interesting finding. Results vary for different dependent variables. A curvilinear relationship is observed when measuring brand equity as the dependent variable; whereas a negative relationship is found using brand evaluations. The use of an anonymous brand could cause the mixed effect. Since the study focuses on the portfolio effects, the use of an anonymous brand controls for other confounding effects. Meanwhile, knowing nothing about the brand prevents consumers from taking any meaningful signal from the brand. Previous explanations for the positive relationship between size and brand equity suggest that the number of products under a brand serves as collateral for that brand. The more products involved, the less likely a brand will fail. Therefore, the number of products associated with a brand is a positive signal for the brand. Given anonymous brands, consumers have no idea about the credibility of the brand, so the signaling effect is weak.

Based on the above discussion, a possible future direction for research is to examine the role of parent brand strength on the effectiveness of attribute compatibility. Usually consumers do not want to buy all the products under a brand. The presence of compatibility under a large portfolio seems less effective to consumers, since they are unlikely to fully benefit from the feature. However, the strength of a brand may help remove the concern. For example, all Apple products nicely connect to each other. As the Apple brand position strengthens on the market, concerns over choosing all products under the Apple brand are lessened.
Bibliography


<table>
<thead>
<tr>
<th>Product set of 6</th>
<th>High-similarity group</th>
<th>Low-similarity group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sub-group 1</td>
<td>Sub-group 2</td>
</tr>
<tr>
<td></td>
<td>Digital camcorder,</td>
<td>Laptop, PDA,</td>
</tr>
<tr>
<td></td>
<td>digital camera,</td>
<td>portable DVD player</td>
</tr>
<tr>
<td></td>
<td>photo printer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Digital camera,</td>
<td>Sub-group 1</td>
</tr>
<tr>
<td></td>
<td>digital camcorder,</td>
<td>Laptop, PDA,</td>
</tr>
<tr>
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<td>Laptop</td>
<td>portable DVD player</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Laptop, PDA</td>
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<td>Cell phone, MP3 player</td>
<td>Laptop, PDA</td>
</tr>
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<td>Laptop</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Laptop</td>
</tr>
<tr>
<td></td>
<td>Laptop</td>
<td>PDA</td>
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Table 3.2
Mean Value (SD) of Similarity among Product Set

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<tr>
<th></th>
<th>High-similarity group</th>
<th>Low-similarity group</th>
<th>Paired-t statistics</th>
<th>p-value</th>
</tr>
</thead>
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<tr>
<td>Product set of 4</td>
<td>5.23 (0.71)</td>
<td>4.29 (1.08)</td>
<td>6.62**</td>
<td>0.00</td>
</tr>
<tr>
<td>Product set of 2</td>
<td>4.15 (1.26)</td>
<td>3.17 (1.24)</td>
<td>3.62**</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*P<0.5, **P<0.01
Table 3.3

**Product Portfolio Effects on Brand Equity**  
(Presence of the compatibility, Similarity, Portfolio Size)

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<thead>
<tr>
<th>Dependent Variables: Brand Equity (B₀)</th>
<th>F statistics</th>
<th>p-value</th>
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<tbody>
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<td></td>
<td></td>
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<td>Similarity among products (C)</td>
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<td><strong>Interactions</strong></td>
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<td>(A)x(B)x(C)</td>
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<td>0.56</td>
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Table 3.4
Mean Value of Brand Equity (SD) in Product Portfolio with High/Low Levels of Similarity

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<th>Low-similarity portfolio</th>
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<th>p-value</th>
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*P<0.5, **P<0.01
Table 3.5

Mean Value (SD) of Brand Equity of the Umbrella Brand

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<td>2.35**</td>
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Product set of 4

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Product set of 2

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*P<0.1, **P<0.05
Table 3.6

Product Portfolio Effects on Brand Evaluation
(Presence of the compatibility, Similarity, Portfolio Size)

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### Table 3.7

Mean Value (SD) of Brand Equity of the Umbrella Brand

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<th>Portfolio without the attribute compatibility</th>
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<th>p value</th>
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<td>4.93(0.87)</td>
<td>4.31(0.99)</td>
<td>1.97*</td>
<td>0.06</td>
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<tr>
<td></td>
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<td>4.87(0.97)</td>
<td>4.65 (0.80)</td>
<td>0.75</td>
<td>0.46</td>
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<tr>
<td>Product set of 4</td>
<td>Similar group</td>
<td>5.27 (0.69)</td>
<td>3.87 (1.17)</td>
<td>4.61**</td>
<td>0.00</td>
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<td></td>
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<td>4.82 (1.06)</td>
<td>4.75 (0.95)</td>
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<td>0.84</td>
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<td>4.65(1.14)</td>
<td>1.22</td>
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</tr>
<tr>
<td></td>
<td>Dissimilar group</td>
<td>5.22(0.76)</td>
<td>4.63(1.09)</td>
<td>2.02</td>
<td>0.05</td>
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*P<0.1, **P<0.05
Figure 3.1

Effects of Portfolio Characteristics on the Brand Evaluation

Set of Similar Products

Set of Dissimilar Products
Appendix 3.1

EXAMPLE OF PROCEDURE (BLOCK OF TWO REPLICATES)

Counterbalancing Level 1

Brand 1
(Dissimilar, with the built-in wireless feature)

Luxor digital camera
Luxor MP3 player
Luxor cell phone
Luxor laptop
Luxor PDA
Luxor portable DVD player

Brand 2
(Similar, without the built-in wireless feature)

Kruger digital camera
Kruger digital camcorder
Kruger photo printer
Kruger laptop
Kruger PDA
Kruger portable DVD player

Counterbalancing Level 2

Brand 1
(Dissimilar, without the built-in wireless feature)

Luxor digital camera
Luxor MP3 player
Luxor cell phone
Luxor laptop
Luxor PDA
Luxor portable DVD player

Brand 2
(Similar, with the built-in wireless feature)

Kruger digital camera
Kruger digital camcorder
Kruger photo printer
Kruger laptop
Kruger PDA
Kruger portable DVD player

Evaluate brand Luxor
Indicate the price premium for each product of Luxor
Evaluate the similarity among products of Luxor
Evaluate brand Kruger
Indicate the price premium for each product of Kruger
Evaluate the similarity among products of Kruger
APPENDIX 3.2

Questionnaire for the Study

Scenario 1-a:
Following is a description about the Mantec brand from Consumer Reports. Please read the report carefully. You will be asked a series of questions based on the following information.

Mantec is a brand manufacturing electronic products. Based on the most recent issue of Consumer Reports, Mantec products rank high in terms of reliability and quality. The brand includes 2 product lines as follows:

Mantec Product Portfolio

<table>
<thead>
<tr>
<th>Product line 1</th>
<th>Product line 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital camera</td>
<td>Laptop</td>
</tr>
<tr>
<td>Digital camcorder</td>
<td>PDA</td>
</tr>
<tr>
<td>Photo printer</td>
<td>Portable DVD player</td>
</tr>
</tbody>
</table>

About Built-in wireless communication

Mantec designs a unique feature for its products. All six products have built-in wireless communication feature. For example, Mantec digital camera can send pictures directly to its Mantec laptop without using a cable. Similarly, Mantec PDA can send pictures to Mantec photo printer directly. This wireless communication function only works for Mantec Products. Without other supporting technology, Mantec digital camera CANNOT send pictures wirelessly to other brand’s laptop.
This built-in wireless feature is an add-on feature. All these six products can also be installed with the standard wireless technology, such as the bluetooth.

Please read the above information carefully. Answer the following questions based only on the above information:

1. I believe the Mantec brand is
   1  2  3  4  5  6  7
   Low quality       High quality

2. I believe all products under the Mantec brand are
   1  2  3  4  5  6  7
   Inferior products Superior products

3. If you are going to buy any one of these six products (digital camera, digital camcorder, photo printer, laptop, PDA, portable DVD player), how likely are you to choose the Mantec brand?
   1  2  3  4  5  6  7
   Very unlikely Very likely

4. Following is a list of the fair price for an average product on the market.

<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>Digital camera</td>
<td>$200</td>
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<td>Digital camcorder</td>
<td>$300</td>
</tr>
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<td>Photo printer</td>
<td>$150</td>
</tr>
<tr>
<td>Laptop</td>
<td>$600</td>
</tr>
<tr>
<td>PDA</td>
<td>$200</td>
</tr>
<tr>
<td>Portable DVD player</td>
<td>$100</td>
</tr>
</tbody>
</table>
5. Imagine that you are going to purchase a Mantec product, how much are you willing to pay for the Mantec product? (Please write down the exact amount you are willing to pay)

I am willing to pay for a

a. Mantec digital camera: ____________
b. Mantec digital camcorder: ____________
c. Mantec photo printer: ____________
d. Mantec laptop: ____________
e. Mantec PDA: ____________
f. Mantec portable DVD player ____________

The Mantec brand consists of two product lines. Now please evaluate these two product lines separately:

Product line 1 consists of three products: Mantec digital camera, Mantec camcorder and Mantec photo printer. Please evaluate these three products based only on information contained in this booklet.

6. Overall, these three products are (Mantec digital camera, Mantec digital camcorder, Mantec photo printer):

1 2 3 4 5 6 7
Low quality High quality

7. I believe products under the Mantec brand are (Mantec digital camera, Mantec digital camcorder, Mantec photo printer)
8. If you are going to buy any one of these three products (digital camera, digital camcorder, photo printer) how likely are you going to choose Mantec brand?

1 2 3 4 5 6 7
Very unlikely Very likely

Product line 2 consists of three products: Mantec laptop, Mantec PDA and Mantec portable DVD player. Please evaluate these three products based only on information contained in this booklet.

9. Overall, these three products are (Mantec laptop, Mantec portable DVD player, Mantec PDA):

1 2 3 4 5 6 7
Low quality High quality

10. I believe products under the Mantec brand are (Mantec laptop, Mantec portable DVD player, Mantec PDA)

1 2 3 4 5 6 7
Inferior products Superior products
11. If you are going to buy any one of these three products (laptop, portable DVD player, PDA), how likely are you going to choose Mantec brand?

   1 Very unlikely  2  3  4  5  6  7 Very likely

Scenario 1-b

Imagine that you already have a Mantec product with built-in wireless feature. You are satisfied with the quality of the Mantec product. In this case, other Mantec products you purchase in the future can wireless communicate with your current Mantec products without adding any other accessories. Based on this scenario, please answer the following questions:

12. If you are going to buy any one of these six products (digital camera, digital camcorder, photo printer, laptop, PDA, portable DVD player), how likely are you going to choose the Mantec brand?

   1 Very unlikely  2  3  4  5  6  7 Very likely

Following is a list of the fair price for an average product on the market.

<table>
<thead>
<tr>
<th>Product</th>
<th>Fair price for an average product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital camera</td>
<td>$200</td>
</tr>
<tr>
<td>Digital camcorder</td>
<td>$300</td>
</tr>
<tr>
<td>Photo printer</td>
<td>$150</td>
</tr>
<tr>
<td>Laptop</td>
<td>$600</td>
</tr>
<tr>
<td>PDA</td>
<td>$200</td>
</tr>
<tr>
<td>Portable DVD player</td>
<td>$100</td>
</tr>
</tbody>
</table>

Imagine that you are going to purchase a Mantec product, how much are you willing to pay for the Mantec product? (Please write down the exact amount you are willing to pay)
13. I am willing to pay for a
   a. Mantec digital camera: __________
   b. Mantec digital camcorder __________
   c. Mantec photo printer __________
   d. Mantec laptop __________
   e. Mantec PDA __________
   f. Mantec portable DVD player __________

14. How similar are products in Line 1 to each other (three products: digital camera, digital camcorder, photo printer)

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

15. How similar are products in Line 2 to each other (three products: laptop, PDA and portable DVD player)

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

16. How similar are products in Line 1 to products in line 2?

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

Tusor
Scenario 2-a:

Following is a description about the Tusor brand from Consumer Reports. Please read the report carefully. You will be asked a series questions of based on the following information.

Tusor is a brand manufacturing electronic products. Based on the most recent issue of Consumer Reports, Tusor products rank high in terms of reliability and quality. The brand includes 2 product lines as follows:

<table>
<thead>
<tr>
<th>Tusor Product Portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product line 1</td>
</tr>
<tr>
<td>Digital camera</td>
</tr>
<tr>
<td>Mp3 player</td>
</tr>
<tr>
<td>Cell phone</td>
</tr>
<tr>
<td>Product line 2</td>
</tr>
<tr>
<td>Laptop</td>
</tr>
<tr>
<td>PDA</td>
</tr>
<tr>
<td>Portable DVD player</td>
</tr>
</tbody>
</table>

Please read the above information carefully. Answer the following questions based only on the above information:

17. I believe the Tusor brand is
   1  2  3  4  5  6  7
   Low quality  High quality

18. I believe all products under the Tusor brand are
   1  2  3  4  5  6  7
   Inferior products  Superior products

19. If you are going to buy any one of these six products (digital camera, MP3 player, cell phone, laptop, PDA, portable DVD player), how likely are you to choose the Tusor brand?
   1  2  3  4  5  6  7
   Very unlikely  Very likely

Following is a list of the fair price for an average product on the market.
Fair price for an average product

Digital camera $200
MP3 player $100
Cell phone $150
Laptop $600
PDA $200
Portable DVD player $150

Imagine that you are going to purchase a Tusor product, how much are you willing to pay for the Tusor product? (Please write down the exact amount you are willing to pay)

20. I am willing to pay for a

a. Tusor digital camera ____________

b. Tusor MP3 player ____________

c. Tusor cell phone ____________

d. Tusor laptop ____________

e. Tusor PDA ____________

e. Tusor portable DVD player ____________

The Tusor brand consists of two product lines. Now please evaluate these two product lines separately

Product line 1 consists of three products: Tusor digital camera, Tusor MP3 player and Tusor cell phone. Please evaluate these three products based only on information contained in this booklet.
21. Overall, these three products are (Tusor digital camera, Tusor MP3 player, Tusor cell phone):

1 2 3 4 5 6 7
Low quality High quality

22. I believe products under the Tusor brand are (Tusor digital camera, Tusor MP3 player, Tusor cell phone)

1 2 3 4 5 6 7
Inferior products Superior products

23. If you are going to buy any one of these three products (digital camera, MP3 player, and cell phone), how likely are you going to choose Tusor brand?

1 2 3 4 5 6 7
Very unlikely Very likely

Product line 2 consists of three products: Tusor laptop, Tusor PDA and Tusor portable DVD player. Please evaluate these three products based only on information contained in this booklet.

24. Overall, these three products are (Tusor laptop, Tusor portable DVD player, Tusor PDA):

1 2 3 4 5 6 7
Low quality High quality

25. I believe products under the Tusor brand are (Tusor laptop, Tusor portable DVD player, Tusor PDA)

1 2 3 4 5 6 7
Inferior products Superior products
26. If you are going to buy any one of these three products (laptop, portable DVD player, PDA), how likely are you going to choose Tusor brand?

Very unlikely 2 3 4 5 6 7 Very likely

Scenario 2-b

Imagine that you already have a Tusor product. You are satisfied with the quality of the Tusor product. Based on this scenario, please answer the following questions:

27. If you are going to buy any one of these six products (digital camera, MP3 player, cell phone, laptop, PDA, portable DVD player), how likely are you going to choose Tusor brand?

Very unlikely 2 3 4 5 6 7 Very likely

Following is a list of the fair price for an average product on the market.

<table>
<thead>
<tr>
<th>Product</th>
<th>Fair price for an average product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital camera</td>
<td>$200</td>
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<td>MP3 player</td>
<td>$100</td>
</tr>
<tr>
<td>Cell phone</td>
<td>$150</td>
</tr>
<tr>
<td>Laptop</td>
<td>$600</td>
</tr>
<tr>
<td>PDA</td>
<td>$200</td>
</tr>
<tr>
<td>Portable DVD player</td>
<td>$150</td>
</tr>
</tbody>
</table>

Imagine that you are going to purchase a Tusor product, how much are you willing to pay for the Tusor product? (Please write down the exact amount you are willing to pay)

28. I am willing to pay for a
a. Tusor digital camera

b. Tusor MP3 player

c. Tusor cell phone

d. Tusor laptop

e. Tusor PDA

f. Tusor portable DVD player

29. How similar are products in Line 1 to each other (three products: digital camera, mp3 player and cell phone)

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

30. How similar are products in Line 2 to each other (three products: laptop, PDA and portable DVD player)

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

31. How similar are products in Line 1 to products in line 2?

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

32. Generally, how important is this wireless feature to the electronic products?

1  2  3  4  5  6  7
Not important at all
Very important
33. How familiar are you with the electronic products?

Not familiar at all

Very familiar

34. Have you ever heard of Tusor before? If so, please list products associated with the brand.

35. Have you ever heard of Mantec before? If so, please list products associated with the brand.
CHAPTER 4
ESSAY THREE: THE MARKET VALUATION OF BRAND LEVERAGE STRATEGIES

4.1 Introduction

The 2006 Interbrand report (Interbrand 2006) shows that the total value of the world’s top 10 brands is around US$396,569 million, equaling 20% of these companies’ market value at the year end of 2006. With these highly valuable brands, companies face the challenge of how to maximize the benefits from them. A common practice is to leverage established brands to launch new products. In this way, firms reduce the high marketing costs associated with new products as well as increase sales driven by established brand names. In this study, I define brand leverage strategy as companies use established brands to launch new products. In the realm of inquiry, marketing scholars have investigated three types of brand leverage strategies: line extension (Reddy, Holak and Bhat 1994; Lomax and McWilliam 2001; Nijssen 1999), brand extension (Aaker and Keller 1990; Broniarczyk and Alba 1994; Keller and Aaker 1992) and brand alliances (Park, Jun and Shocker 1996; Simonin and Ruth 1998). Most of these studies focus only on one strategy, and few compare the three closely related strategies.

The goal of the study is two-fold. First is to establish the link between brand leverage strategies and a firm’s shareholder value, and the other is to identify a firm’s characteristics that contribute to this link. The study is organized as follows: the first
session reviews literature that linked marketing strategies to shareholder values. Next session profiles the characteristics of each strategy were profiled. Then the study links the financial measurements to each strategy and develops hypotheses. After that, the study proposes the estimation approach, the data, the measures, and the results. The study concludes with a discussion of the findings and its implications.

4.2 Literature Review

Linking marketing strategies to shareholder value has received significant attention in the past decade. Studies capture the changes in shareholder value through the stock market responses (Aaker and Jacobson 1994; Aaker and Jacobson 2001; Agrawal and Kamakura 1995; Barth, Clement, Foster, and Kasznik 1998; Cheng and Chen 1997; Geyskens, Gielens and Dekimpe 2002; Horsky and Swyngedouw 1987; Lane and Jacobson 1995). Further, researchers use market valuation models to identify firm characteristics contributing to the stock returns. A body of literature links a firm’s market value to various factors, such as the advertising spending (Chauvin and Hirschey 1993, 1994; Cheng and Chen 1997; Erickson and Jacobson 1992), strategic emphasis (Mizik and Jacobson 2003) and management ownership structure (Chen, Hexter and Hu 1993).

4.2.1 Event Study in Marketing

Two methodologies capture the market response: the event study method and the stock return response model. These two methods are in spirit similar. The major
difference is that the event study captures the market reaction to a specific event announcement on a given day (Agrawal and Kamakura 1995; Cheng and Chen 1997; Geyskens, Gielens and Dekimpe 2002; Horsky and Swyngedouw 1987; Lane and Jacobson 1995), and the stock return response model looks at changes in a series over a period (Aaker and Jacobson 1994; Aaker and Jacobson 2001; Mizik and Jacobson 2003). This study adopts the event study methods to assess the different stock market responses to different types of brand leverage strategy announcements.

Event study in marketing starts with examining the impact of company name changes (Horsky and Swyngedouw 1987). The study finds that the market responds favorably to most announcements of companies’ name changes. Moreover, the greatest returns are found for firms in industrial goods and for firms with poor performance. With the similar approach, marketing researchers show that the stock market respond favorably to other strategy announcements: such as new product introductions (Chaney, Devinney, and Winer 1991), celebrity endorsement (Agrawal and Kamakura 1995), brand extensions (Lane and Jacobson 1995), joint ventures and contracts (Houston and Johnson 2000) and introduction of Internet channel for newspapers (Geyskens, Gielens, and Dekimpe 2002).

Lane and Jacobson (1995) provides empirical support to the positive market valuations of brand extension announcements in the food industry. The study further suggests that the direction and magnitude of the response depend on the brand familiarity and brand attitude. The most favorable responses are found when the parent brand name is of high esteem attitude and high familiarity.
This study has commonalities with Lane and Jacobson (1995). Both studies link the brand strategy announcements to stock returns. Each study seeks to determine whether other factors besides the announcement provide incremental explanatory to explain stock returns. Meanwhile, this study differs from the previous one most notably in that it incorporates different brand strategy announcements. This study investigates three strategies related to the new product launch: line extension, brand extension and brand alliances. Furthermore, this study relates companies’ profiles to the stock market responses. Companies’ characteristics have always been key factors contributing to the strategy outcome. Specifically, the firm size, R&D expenditures, marketing support (such as advertising expenses) are critical in the strategy implementations. Thus, market valuation model assesses whether or not the firms’ characteristics provide explanatory power to the stock market response.

4.2.2 Market Valuation Model

Market valuation model expresses the market value of a firm as a function of a number of important firm-related factors considered by investors. The assumption is that in an efficient market, stock prices reflect investors’ expectations based on available information (Fama and French 1992). The market value is usually measured by either the stock return (Bublitz and Ettredge 1989; Erikson and Jacobson 1992; Geysken, Gielens and Dekimpe 2002) or Tobin’s q (Chen, Hexter and Hu 1993; Rao, Agarwal and Dahlhoff 2004; Simon and Sullivan 1993). Stock price reflects the discounted future cash flow while Tobin’s q is a forward-looking measure of the firm’s profit potential (Rao,
Agarwal and Dahlhoff 2004). This study examines the stock market responses to different brand leverage strategy announcements, so the stock return is used as an index of the market value.

Although studies address different strategic issues that change a firm’s market value, they all use a common set of control variables related to the change. Typically, these variables include the firm size, earnings, growth rate, R&D expenditures, market share etc. Based on the previous empirical evidence of these variables’ relationships to a firm’s stock return (Conchar, Crask and Zinkhan 2005; Geysken, Gielens and Dekimpe 2002; McWilliams and Siegel 1997) and the availability of the data, this study includes the following variables in the market valuation model: (1) firm size (2) earnings (3) advertising expense (4) R&D expense and (5) return on equity, and (6) intangible asset.

4.3 Conceptual Framework and Hypotheses Development

The study focuses on two questions: 1) what are stock market responses to the three types of brand leverage strategies? 2) Will the responses to the three strategies differ from each other? The following session first explains the role of brand equity in firms’ financial performance. Then previous findings of each strategy are reviewed and linked to firms’ stock market performance.
4.3.1 Linking Brand Equity to Financial Performance

Barney (1991) broadly defines asset as any physical or human attribute that enables the firm to implement strategies that improve efficiency and effectiveness in the marketplace. In this sense, established brands improve companies’ marketing efficiency by clearly communicating with consumers about their products’ attributes and benefits. Companies save marketing costs and generate higher sales revenues by using existing brands on new products. Consequently, these benefits will improve companies’ financial performance.

Srivastava et al (1998) develop a three components framework: linking together the market-based asset, market performance and the shareholder value. The framework suggests that the direct outcome of the brand equity is the improved market performance. Measurements of the market performance include the price premium, saved sales costs, increased customer loyalty and retention rate. Ultimately, a valuable brand helps improve market performance, and therefore leads to improve the shareholder value. Specifically, brand equity maximizes shareholder value through two ways: accelerate the cash flow and reduce the volatility of the cash flow.

Brands accelerate cash flow when consumers respond promptly to marketing activities of a favorable brand. Keller (1993) suggests that the brand awareness and brand attitude increase consumers’ willingness to adopt a brand. Usually, consumers respond more quickly to the marketing efforts of their familiar and favorable brands. An industry study supports this argument. In the computer industry, Zandan (1992) finds that consumers adopt new products from well-known brands, such as Compaq, Hewlett-
Packard, three to six months sooner than other brands. In addition, consumers are more likely to refer these established brand names to other people. All these positive responses from consumers accelerate the cash flow of new products under the brands.

Brands also help reduce the volatility of the cash flow. The brand loyalty helps stabilize companies’ cash flow. Srivastava et al. (1998) asserts that cash flow from brands with loyal customer base is less susceptible to competitive activity. The reduced volatility decreases the risk associated with a company’s cash flow. Companies with a stabilized cash flow have a lower discounted rate when estimating the net present value. In other words, stable cash flow increases companies’ net present values and consequently improves the shareholder value.

In essence, a strong brand expedites and stabilizes a company’s future cash flow. Brand leverage strategies leverage established brands to introduce new markets. These brands help generate future cash flow for a company. Thus, stock price, indicating the discounted future value of a company, should also reflect the value of these strategies. Thus, we propose:

**H1:** Stock market should respond positively to the announcements of brand leverage strategies.

### 4.3.2 Brand Leverage Strategies

Brand leverage strategies launch new products using established brands. Literature has explored three types of strategies: line extension, brand extension, and brand alliances. Both line extension and brand extension use a single brand to introduce new products. Line extensions use an established brand in the same product category
with changes in relatively minor ways, such as flavors, sizes, and compositions (Reddy, Holak and Bhat 1994). Brand extensions stretch the established brands to different product categories (Aaker and Keller 1990). Brand alliances refer to any cooperative marketing activity involving short-term or long-term association and/or combination of two or more individual brands (Rao and Reukert 1994; Simonin and Ruth 1998). In the short term, brand alliances can be the cross-promotions, such as the campaign run by Krups coffeemakers and Godiva Chocolate’s gourmet coffee (Simonin and Ruth 1998). In the long term, it includes the new products with two brand names on it. For example, Apple and Nike just jointly developed the ipod-Nike kit. Next session describes the characteristics of each strategy, and their influences on firms’ shareholder value.

**Line extension** Reddy et al (1994) empirically examines several factors determining the success of a line extension. The study uses longitudinal data of cigarette industry including 75 line extensions during 1950-1984. Success is indicated by the market share of the line extension. Results imply three factors important in the line extension success: parent brand, extension product and the firm support. First, the favorability of parent brand is critical since line extensions, in essence, capitalize on consumers’ awareness of and associations with the brand (Reddy, Holak and Bhat 1994). Second, both the marketing support for and the timing of the extension product are critical to the market performance. Third, from a firm’s perspective, two factors are important: the firm size and the marketing competency. The firm size is generally important to a firm’s overall performance, such as the profitability and sales (Hofer 1975;
Marketing competency relates to a firm’s capability to implement marketing strategies. The capability relates to a firm’s speed of new product development, marketing effectiveness, distribution advantages. All these factors contribute to the performance of new line extensions (Reddy, Holak and Bhat 1994).

Line extension studies also address the issue of cannibalization (Lomax and McWilliam 2001; Nijssen 1999). Line extensions work mainly on existing buyers (Barnard and Ehrenberg 1997; Ehrenberg et al. 1994). Lomax and William (2001) reports that, on average, half of line extension’s sales are derived from the parent brand. Along that line, Nijssen (1999) posits that the main purpose of line extension is to enhance the brand’s current position by differing supply rather than to expand the market. Therefore, due to its different strategic purpose, line extension has limited capability to generate new cash flow.

**Brand extension** Brand extensions not only build brand image, but also generate earnings and create opportunities in other markets (Park, Jaworski and MacInnis 1986). Brand extension studies assess the strategy from two perspectives: consumers’ evaluations of the extension product and market’s response to the strategy. Literature in both streams attempts to identify determinants of brand extensions success.

From a consumer’s perspective, two factors are important in the evaluation; product category relationship and brand-product relationships. The first one captures the relationship between parent category and the extension one. Aaker and Keller (1990) develops a construct of perceived fit that is commonly used to capture the product
category relationship. Perceived fit consist of three items: the complement and substitute between the parent and the extension categories, and the perceived difficulty to produce the extension product. A second important dimension captures the relationship between the parent brand and the extension category (Broniarczyk and Alba 1994). The study asserts that the match between the brand benefit associations and the extension category influences consumers’ evaluation of the extension. Volckner and Sattler (2006) simultaneously tests more than 10 factors identified previously as important to brand extensions. The study confirms that both relationships contribute to the brand extension success.

From market’s perspective, studies examine the influences of brand extension on the shareholder value (Lane and Jacobson 1995) as well as on the new product’s market share (Smith and Park 1992). Both studies emphasize the role of parent brand. Lane and Jacobson (1995) suggests that the brand attitude and familiarity positively influence the stock market responses to the brand extension announcement. In a similar vein, the parent brand strength also increases the market share of the extension product (Smith and Park 1992). In essence, the role of parent brand is critical in the brand extension performance.

**Brand alliances**

Brand alliances involve two brands in the marketing activities. Compared with other two strategies, the success of brand alliances involves more uncertainties. Uncertainties come from two parts: one is the combination of two brands, and the other is the expansion across usually two markets.
The combination of two brands generates two issues. First, the fit between these two brands influence consumers’ perceptions about the alliance product. A study addresses the fit issue in the context of composite branding alliances (Park, Jun and Shocker 1996). Composite brand alliances involve two brands in different position: the header defining the product category and the modifier displaying the attribute. For example, Slim-fast chocolate cake mix by Godiva. The study suggests that when the composite branding product has a favorite header brand, then a modifier brand with complementary attributes with the header brand is more favorably evaluated than a mere favorable modifier brand. Second, the possible spillover effect makes companies more cautious when putting the two brands together. The alliance of two brands influences consumers’ subsequent attitudes toward each brand later (Simonin and Ruth 1998).

On the other side, brand alliances help companies to reach beyond its current consumers and create opportunities in expanding market. In this sense, brand alliances are a more aggressive strategy than the line extension or brand extension. The aggressiveness also increases the uncertainties of the strategy performance. Based on that, the magnitude the stock market responses to brand alliances should the largest among three leverage strategies.

To summarize, the three brands leverage strategies have different degrees of potential to generate future cash flow. Brand alliances expand to different market and has the greatest potential among the three strategies to generate cash flow. The main strategic role of line extension is to strength its brand position rather than the sales
increase. Brand extension is in the middle of these strategies. Since a stock price captures a company’s future cash flow, I propose that:

H2: Different brand leverage strategies differ in their potential to increase shareholders value: with the brand alliances have the greatest, brand extensions in the middle and the line extensions have the least.

4.4 Methodology

The methodology used in this study consists of two parts. The first part shows how the event study methodology captures the stock market’s instant responses to companies’ strategic announcements. The second part uses market valuation model to identify firm characteristics related to the stock market response.

4.4.1 Overview of Event Study Methodology

The methodology of event study links the marketing strategy to the shareholder value. Studies examine the stock market responses to company’s strategic announcements. Stock price reflects the discounted present value of all future cash flows that are expected to accrue to stockholders (Rappaport 1997). When company releases information positively or negatively related its future value, it should immediately influence the stock price in the same direction. Introduced by several seminal papers (Brown and Warner 1980, 1985; Dolley 1933; Fama et al, 1969), the event study methods have been widely used in accounting, finance, management and marketing.

Event study measures the change of stock return due to an event announcement. Events can be any new information released to the market. The
standard approach is to calculate the abnormal return as the difference between the estimated return and actual return. Following Brown and Warner (1985), event studies in marketing adopt the market model to estimate the return. The market model calculates the rate of return on the share price of firm i on day t is expressed as:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it}$$  \hspace{1cm} (1)

Where

- $R_{it}$ = the rate of return on the share price of firm i on day t
- $\alpha$ = the intercept term
- $\beta$ = the systematic risk of stock i associated with the market portfolio
- $R_{mt}$ = the rate of return on a market portfolio of stock on day t

and

$\epsilon_{it}$ = the error term, with $E(\epsilon_{it}) = 0$

From the above equation, the daily abnormal return (AR) for firm i on day t is:

$$AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt})$$  \hspace{1cm} (2)

Appendix 4.2 lists the detail definition of daily return ($R_{it}$). Where $\hat{\alpha}_i$ and $\hat{\beta}_i$ are parameter estimates obtained from the regression of $R_{it}$ on $R_{mt}$ over an estimation
period (T) preceding the event. $\hat{\alpha}_i$ is an intercept and $\hat{\beta}_i$ indicates the variability of the firm i’s return adjusted by the market portfolio. Therefore, $\hat{\alpha}_i + \hat{\beta}_i R_m$ indicates the estimated return. Difference between the estimated return and the actual return is the abnormal return. Event study explains the abnormal return as the impact of the new information release. The more influential of the information, the larger degree of the abnormal return results.

To capture the cumulative effects of an event over time, event study also calculates the CAR (cumulative abnormal returns) aggregating the AR over event period. Therefore, the CAR for company i over a period of T is:

$$ CAR_i^{[-t_1,t_2]} = \sum_{t=-t_i}^{t_2} AR_i $$

Cumulative abnormal effects capture the market responses during a short period of the event. Since stock market responds instantly to any new information, effects of an event usually can be captured on the two day period (t to t+1, relative to the event announcement date, t=0). A positive abnormal return in the day before the announcement date usually is a sign of information leakage.

The validity of the conclusions drawn from event study relies on three assumptions: 1) stock markets are efficient, 2) the event was unanticipated, and 3) there was no other factors influencing the stock price during the event window.
Market efficiency means that stock prices incorporate all relevant information available to shareholders (Bromiley, Govekar and Marcus 1988). Thus, the impact of the information release will be reflected in the stock price immediately.

The second assumption is that the event is unanticipated. It means that traders get the information from the announcement and there is no leakage in advance. Since I assume that the market is efficient, stock prices incorporate any information immediately. Information leakage will greatly reduce the magnitude of the market responses to the announcement.

The third assumption is that the study has isolated the effects of any other confounding events. Confounding events include anything that could possibly have an impact on the stock price. Event studies attribute the daily return changes to the single event being investigated. Therefore, confounding events close to the announcement date have to be eliminated.

4.4.2 Data

Sample Overview  The sampling procedure started from the list of Fortune 500 in 2006. The list included top 500 U.S public corporations as measured by gross revenue and published by Fortune magazine each year. To investigate the link between these announcements and shareholder’s value, data were compiled from three sources: 1) announcements information using brand leverage strategies are collected from Factiva. Factiva, owned by Dow Jones, provided news from more than 10,000 authoritative sources including the Wall Street Journal, The Financial Times, Down Jones, Reuters
Newswires and the Associated Press; 2) stock return information was from the Center for Research in Securities Prices (CRSP) at the University of Chicago database; 3) firms’ characteristics and their accounting performance measure were from Standard and Poor’s Compustat database.

**Event Identification** The sample consists of 114 announcements of using brand leverage strategies to launch products between the year of 2000 and 2006. Several sampling criteria were applied in selecting the final sample. First, I started from the list of Fortune 500 in the year of 2006. I selected four industries that commonly practice brand leverage strategies in consumer products: apparel, beverage, household and personal products, and food consumer products. There were 51 Fortune 500 companies in these industries. Announcements made by these companies from during year of 2000 to 2006 were collected from the Factiva. In total, there were 214 announcements using line extension, brand extension or brand alliances for the new product launch.

Second, firms with any contemporaneous announcement during the event window (day=-1, 0, 1) were excluded. Following McWilliams et al (1997), nine types of confounding events were deleted (McWilliams and Siegel 1997): unexpected dividend or earnings announcements, takeover bids, merger negotiations, changes in key executives, restructuring, joint ventures, major contract awards, significant labor disputes or liability suits and announcements of major new products. An event was excluded from the sample if any type of the confounding announcement was made during the event window (day=-1, 0, 1). The screening procedure decreased the sample
size from 214 to 114 announcements made by 15 firms during the period from 2000 to 2006.

**Abnormal Returns** Abnormal return was the difference between the actual return and the estimated return. I used the market model in equation (2) to calculate the estimated daily return (Brown and Warner 1985). I estimated the parameters of the market model ($\hat{\alpha}_i$ and $\hat{\beta}_i$) by regressing the actual daily returns on the return of CRSP Weight S&P 500 portfolio of securities using an estimation period of 260 days (t-320 to t-60, relative to the event announcement date, t=0) for the total 114 observations. Table 4.1 provided descriptive statistics of the abnormal returns for a window of $\pm$ 5 days around the event.

**Type of announcements** One hundred and fourteen event announcements were coded into three categories: 1 as line extension, 2 as brand extension, 3 as brand alliances. Line extension included the improvement of current products or making minor changes to existing products, such as size, package and flavor. Brand extensions leverage an established product in a new product category. The major difference was that line extensions introduced new products within the current categories whereas brand extensions launched products in a different category. Sometimes this new category could be the categories first identified by the brand. For example, Tide introduced Tide to go, a pen-shape stain remover. It is considered a brand extension since the pen-shape stain remover was a newly created category. Brand alliances were any marketing activities involving more than one brand (Rao and Reukert 1994; Simonin...
and Ruth 1998). Therefore, it included the co-branding announcements and marketing cooperation between two companies as well as brand acquisitions. Although brand alliances involved two brands (usually from two companies), this study only examined the changes related of the firms in the Fortune 500 list. For example, Nike and Google created an online community for football fan. Only Nike was in the list of Fortune 500 in 2006, so the effect was captured through the Nike’s stock return. With the 34 alliances announcements in the sample, the majority belonged to this category. In the case that both firms were in the sample, the firm first made the announcement was selected. Table 4.2 listed the categorization of 114 announcements.

Financial measurements  COMPSTAT provided brand equity and six other control variables: firm size, advertising expense, return on equity (ROE), earnings, R&D expenses, and intangible asset. Each variable was measured at the end of calendar year in which the announcement was made. For all the financial measures, Appendix I provided detail description of each variable from the two databases. To reduce the differences in scale units, log-transformed all six financial measurements. Table 4.3 also presented the descriptive statistics of these variables after the transformation.

4.4.3 Event Study Results

Main Effects of Brand Leveraging Announcements  Overall, the market responded favorably to brand strategies announcements. Table 4.4-A revealed that the stock market adjusted instantaneously to the announcement. Results showed that, on average, firms making the announcements experienced a 0.224% (t=2.77, P=0.006)
abnormal return on the event day and a 0.14% (t=1.899, P=0.06) return on the following day. Therefore, H1 was supported. The magnitude of the returns was similar to results reported in other marketing-related event studies. Lane and Jacobson (1995) reported a 0.32% abnormal return due to the brand extension announcements on the event date. Chaney, DeVinney, and Winer (1991) reported a 0.25% abnormal return on the introduction of new product announcement.

Table 4.4-B broke down the abnormal returns by the type of announcements. Stock market responded positively to all three types of announcements. The magnitude of response was stronger for brand extension and brand alliances than for line extension. For line extension, the abnormal return was 0.02% (t= 0.21, P=0.83) on the event day (T=0). On the next day (T=1), the abnormal return increased to 0.21% (t=1.88, P<0.1). On the announcement day, brand extension yielded an abnormal return of 0.40 (t=2.04, P<0.05), and brand alliances generated such return of 0.43 (t=2.60, P<0.05). Thus, H2 was supported that the market responded most favorably to the brand alliances and the least to the line extension.

**Cumulative Abnormal Returns** Since the event effects could spread over several days surrounding the event date, studies usually also examined the cumulative abnormal returns (CAR) to capture the event effects across time. Table 4.5-A listed the cumulative abnormal returns for various periods around the event day. Results indicated that the CAR over two days window (including the event day) were significant (M (-1,0)=0.30%, P<0.05; M(0,1)=0.37%, P<0.05). For the three-day period, only the window
of CAR from -1 to 1 days was significant ($M(-1,1)=0.43\%$, $P<0.05$). It suggested that the market responded to the announcement on both the day of the announcement and the following day. Meanwhile, the insignificant ACR from -2 to 0 days meant that there was no information leakage in prior to the announcement. The absence of significant ACR results beyond the 3-day period around the event day validated the market model used to estimate the returns.

Table 4.5-B listed ACR results by the type of announcements. Generally, the market responded positively to announcements on both two-day and three-day periods. For line extension, market responded only on the event day and the day after ($M(0,1)=0.23\%$, $P<0.1$). Brand extension results implied possible information leakage in prior to the announcement date. ACR were significant different from 0 when the period covered both the announcement day and the day(s) before that ($M(-2,0)=0.71\%$, $P<0.05$; $M(-1,0)=0.68\%$, $P<0.05$; $M(-1,1)=0.74\%$, $P<0.1$). Therefore, stock market had responded to the strategy before the official announcement. Results of brand alliances indicated that the most of the announcement effects were captured on the announcement day and the day after ($M(0,1)=0.52\%$, $P<0.05$). In conclusion, the impacts of the all three types of announcements were mostly captured during the two-day period (the announcement day and the day after).

4.4.4 Results of Market Valuation model

The event study results showed that the stock market, on average, responded positively to the brand leverage strategies. However, there were still more than 49 cases
with negative abnormal return on the day after the announcement. It led to the second part of the study to identify determinants of a successful brand leverage strategy.

To assess the impact of the strategy type on the stock return, I specified a regression model of each event’s abnormal return:

\[
AR_{it} = \alpha + \beta_{Type} + \sum_{k=1}^{6} \beta_k \times CV
\]

Where

\(AR_{it}\) = daily abnormal return for company i on the announcement day (t=0)

Type = the type of the brand leveraging announcement

CV = control variables including firm size, earnings, advertising expenditures, R&D expenses, return on equity and intangible asset.

**Overview** Table 4.6 summarized statistic results of the two models. Model 1 only includes six control variables. Model 2 added the variable of announcement type. The added variable improved the model fit (\(F_{model\ 1}=2.392, P<0.05; F_{model\ 2}=3.38, P<0.01\)). Model 2 improved the adjusted \(R^2\) from 0.107 in model 1 to 0.189 in model 2. As \(H_2\) predicted, model 2 in Table 4.6 revealed that the type of brand leveraging announcement influenced the stock price abnormal return (\(F=4.245, P=0.019\)). Among the six control variables, the firm’s return on equity and intangible asset had the largest impacts on the abnormal return.
Type of brand announcement  

To understand the role of brand equity in the three strategies, the dataset were divided into three sub-groups by the strategy type: group of line extension announcements, group of brand extension announcement and group of brand alliances announcements. For each group, I ran the regression as follows:

\[
AR_{it} = \alpha + \sum_{k=1}^{6} \beta_k \cdot CV
\]

Where

\(AR_{it}\) = daily abnormal return for company i on the announcement day (t=0)

CV = control variables including firm size, earnings, advertising expenditures, R&D Expenses, return on equity and intangible asset.

Table 4.7 showed that the size of the firm mattered most for the line extension announcement. Line extension involved least risks among the three strategies. The future sales generated by the line extension largely depended on the sales of current brand. Due to the high degree of cannibalization, the current brand sales largely determined the potential sales driven by line extension. Thus, the firm size, as an indicator for the current brand sales, influenced the stock market responses to the line extension announcements.

Within the group of line extension, the earnings had negative correlation with the abnormal return. Earnings indicated companies’ profits. Although line extension had low
risk, the strategy also involved a large degree of cannibalization. Cannibalization meant that the sales increase in new product came from the sale decrease in existing products. Therefore, with the additional marketing expenditure of line extensions, the total sales would not increase proportionally. In turn, line extension, with the highest possibility of cannibalization, risked reducing a firm's profits. Companies with high profits would be hurt the most by this strategy. Therefore, investors of these firms responded negatively with the line extension announcements. In summary, line extension is suitable for firms with large sales and low profits. Companies engaged in industries such as consumer-packaged products are usually among the list.

Among the group of brand extensions, I did not find any company-related characteristic significantly influence the stock performances. Although the result was consistent with the previous study (Lane and Jacobson 1995), the result encouraged us for the future study to identify other characteristics contributing the brand extension success.

4.5 Conclusions and Discussions

Companies leverage successful brands to launch products in different categories. The study first time compares these strategies in terms of the impact on the shareholder value. Results show that the market responds positively to three types of strategies: line extension, brand extension and brand alliances. Meanwhile, the stock market responses vary with the type of the strategy. The magnitudes of stock market responses are different for each strategy because these strategies differ in the ability to
generate revenues and in the degrees of cannibalizations. Brand alliances show the
greatest potential of driving revenues whereas line extensions most serve to strength the
brand position rather than expanding the market. Brand extension strategy is in the
middle.

Although the strategies all use established brand(s) to launch new products, the
purposes are quite different, and several findings are noticeable. First, the market
valuation model reveals that shareholder of a firm with high earnings tend to respond
less favorable to the line extension. This result provides evidence for the cannibalization
consequences of line extension. Cannibalization occurs when the sales of new products
decreases the sales of existing products. As the sales driven by new products cannot
justify the marketing expense associated with that product introduction, a firm’s overall
profitability drops. In this way, line extension is not suitable for firms seeking for a high
profitability. However, the conclusion is based on the indirect evidence of the stock
market responses to the line extension. It points to a new research avenue to directly
investigate impact of line extensions on a firm’s profitability.

Second, the study shows that the magnitude of the market responses is the
largest to the brand alliances announcements. The finding is based on the stock
responses to one of two firms involving in the announcements. To fully capture the brand
alliances impacts, future studies can observe the stock market responses to both
companies. As two companies take different roles in the alliances, the consequences
and possible stock market responses may also differ. As the hypothetical example used
in the previous discussion, Slim-fast chocolate cake mix by Godiva involves a utilitarian-
oriented brand (slim-fast) and a prestigious one (Godiva). Introduction of such products may generate different responses to the two alliances companies.

Third, this study finds several firms’ characteristics contributing to the stock market responses. However, one of the most obvious information in the announcements is the brand(s). The essence of brand leverage strategy is to utilize the established brands to generate more revenues for a firm. Thus, the market responses should be correlated with the brand equity being leveraged. This study does not investigate the brand effect due to the data availability. As possible future research stream, studies can link brand equity to the market responses to that brand’s leverage strategy announcement.
Bibliography


Horsky, Dan and Patrick Swyngedouw (1987), "Does It Pay to Change Your Company’s


Table 4.1

Descriptive Statistics of Abnormal Returns (N=114)

<table>
<thead>
<tr>
<th>Event Day</th>
<th>Average Abnormal Return (%)</th>
<th>Standard Deviation</th>
<th>Maximum (%)</th>
<th>Minimum (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td>0.0090</td>
<td>0.008030</td>
<td>2.4392</td>
<td>-2.3739</td>
</tr>
<tr>
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<td>0.0208</td>
<td>0.008970</td>
<td>5.6098</td>
<td>-2.4507</td>
</tr>
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<td>0.0130</td>
<td>0.008302</td>
<td>2.5037</td>
<td>-3.7891</td>
</tr>
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<td>1.8165</td>
<td>-1.7977</td>
</tr>
<tr>
<td>-1</td>
<td>0.0694</td>
<td>0.008442</td>
<td>2.8168</td>
<td>-3.5925</td>
</tr>
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<td>0</td>
<td>0.2241</td>
<td>0.008627</td>
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</tr>
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<td>2.2994</td>
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</tr>
<tr>
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<td>0.007128</td>
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</tr>
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<td>5</td>
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<td>2.3311</td>
<td>-4.4208</td>
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Table 4.2  
Categorization of Event Announcements (N=114)

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<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line extensions</td>
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</tr>
<tr>
<td>Brand extensions</td>
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</tr>
<tr>
<td>Brand alliances</td>
<td>34</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>114</strong></td>
</tr>
</tbody>
</table>
Table 4.3  
Financial Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Operationalization</th>
<th>Mean (SD)</th>
<th>Minimum</th>
<th>Maximum</th>
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</thead>
<tbody>
<tr>
<td>Brand Equity</td>
<td>Intangible assets</td>
<td>8.52 (1.71)</td>
<td>5.35</td>
<td>11.40</td>
</tr>
<tr>
<td></td>
<td>Number of employees</td>
<td>3.74 (0.79)</td>
<td>2.62</td>
<td>4.93</td>
</tr>
<tr>
<td></td>
<td>Advertising expense</td>
<td>6.90 (1.35)</td>
<td>4.83</td>
<td>8.82</td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertising Expense</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE (return on equity)</td>
<td>Return on Equity</td>
<td>3.76 (0.94)</td>
<td>2.55</td>
<td>5.84</td>
</tr>
<tr>
<td>Earnings</td>
<td>Earning before interest and taxes</td>
<td>7.98 (1.05)</td>
<td>6.58</td>
<td>9.61</td>
</tr>
<tr>
<td>R&amp;D Expense (Research and Development)</td>
<td>R&amp;D expense</td>
<td>5.54 (1.59)</td>
<td>3.12</td>
<td>7.64</td>
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</tbody>
</table>
Table 4.4-A
Mean Percentage of Abnormal Return (N=114)

<table>
<thead>
<tr>
<th>Event Day</th>
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<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td>0.0009 (0.80)</td>
<td>0.0121</td>
<td>0.99034</td>
</tr>
<tr>
<td>-4</td>
<td>0.0208 (0.90)</td>
<td>0.2476</td>
<td>0.80488</td>
</tr>
<tr>
<td>-3</td>
<td>0.0130 (0.90)</td>
<td>0.2476</td>
<td>0.86765</td>
</tr>
<tr>
<td>-2</td>
<td>-0.0961 (0.72)</td>
<td>-1.4256</td>
<td>0.15674</td>
</tr>
<tr>
<td>-1</td>
<td>0.0694 (0.84)</td>
<td>0.8782</td>
<td>0.38171</td>
</tr>
<tr>
<td>0</td>
<td>0.2241 (0.86)**</td>
<td>2.7739</td>
<td>0.00648</td>
</tr>
<tr>
<td>1</td>
<td>0.1411 (0.79)*</td>
<td>1.8997</td>
<td>0.06002</td>
</tr>
<tr>
<td>2</td>
<td>0.0292 (0.87)</td>
<td>0.3603</td>
<td>0.71928</td>
</tr>
<tr>
<td>3</td>
<td>0.0381 (0.84)</td>
<td>0.4793</td>
<td>0.63266</td>
</tr>
<tr>
<td>4</td>
<td>-0.0611 (0.71)</td>
<td>-0.9117</td>
<td>0.36389</td>
</tr>
<tr>
<td>5</td>
<td>-0.1289 (0.90)</td>
<td>-1.5218</td>
<td>0.13088</td>
</tr>
</tbody>
</table>

* P<0.1, **P<0.05
Table 4.4-B

Mean Percentage of Abnormal Return for: Line Extension, Brand Extension, Brand Alliances

<table>
<thead>
<tr>
<th>Event Day</th>
<th>Line Extension (SD)</th>
<th>Brand Extension (SD)</th>
<th>Brand Alliances (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td>-0.0503 (0.88)</td>
<td>0.0925 (0.85)</td>
<td>0.0203 (0.65)</td>
</tr>
<tr>
<td>-4</td>
<td>-0.0354 (0.78)</td>
<td>0.2418 (1.27)</td>
<td>-0.0508 (0.73)</td>
</tr>
<tr>
<td>-3</td>
<td>0.1235 (0.79)</td>
<td>-0.1443 (0.73)</td>
<td>-0.0501 (0.96)</td>
</tr>
<tr>
<td>-2</td>
<td>-0.0321 (0.67)</td>
<td>0.0278 (0.74)</td>
<td>-0.2909 (0.76)**</td>
</tr>
<tr>
<td>-1</td>
<td>0.0432 (0.77)</td>
<td>0.2885 (1.23)</td>
<td>-0.0492 (0.55)</td>
</tr>
<tr>
<td>0</td>
<td>0.0200 (0.70)</td>
<td>0.3953 (0.97)</td>
<td>0.4285 (0.96)**</td>
</tr>
<tr>
<td>1</td>
<td>0.2101 (0.83)*</td>
<td>0.0535 (1.04)**</td>
<td>0.0939 (0.47)</td>
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<tr>
<td>2</td>
<td>-0.0194 (0.89)</td>
<td>0.1040 (0.94)</td>
<td>0.0529 (0.80)</td>
</tr>
<tr>
<td>3</td>
<td>-0.0420 (0.94)</td>
<td>0.2837 (0.76)*</td>
<td>-0.0154 (0.72)</td>
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<tr>
<td>4</td>
<td>-0.0096 (0.69)</td>
<td>-0.0289 (0.71)</td>
<td>-0.1668 (0.76)</td>
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<td>5</td>
<td>-0.1974 (0.84)</td>
<td>-0.1058 (1.22)</td>
<td>-0.0370 (0.71)</td>
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</table>

* P<0.1, **P<0.05
<table>
<thead>
<tr>
<th>Interval</th>
<th>Mean (SD)</th>
<th>t-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(-5, 5)</td>
<td>0.20 (0.03)</td>
<td>0.77</td>
<td>0.44</td>
</tr>
<tr>
<td>(-5, -2)</td>
<td>-0.08 (0.02)</td>
<td>-0.6</td>
<td>0.55</td>
</tr>
<tr>
<td>(-2, 0)</td>
<td>0.20 (0.01)</td>
<td>1.49</td>
<td>0.14</td>
</tr>
<tr>
<td>(-1, 0)</td>
<td>0.29 (0.01)**</td>
<td>2.56</td>
<td>0.01</td>
</tr>
<tr>
<td>(0, 1)</td>
<td>0.37 (0.01)**</td>
<td>3.39</td>
<td>0.00</td>
</tr>
<tr>
<td>(-1, 1)</td>
<td>0.43 (0.02)**</td>
<td>3.18</td>
<td>0.00</td>
</tr>
<tr>
<td>(1, 5)</td>
<td>0.03 (0.02)</td>
<td>0.15</td>
<td>0.88</td>
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</table>

*P<0.1, **P<0.05,
Table 4.5-B

Mean Percentage of Cumulative Abnormal Returns (CAR): Line Extension, Brand Extension, Brand Alliances

<table>
<thead>
<tr>
<th>Interval</th>
<th>Line Extension (SD)</th>
<th>Brand Extension (SD)</th>
<th>Brand Alliances (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(-5, 5)</td>
<td>-0.0418 (2.90)</td>
<td>1.1565 (3.13)</td>
<td>-0.0646 (2.04)</td>
</tr>
<tr>
<td>(-5, -2)</td>
<td>-0.0197 (1.47)</td>
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<tr>
<td>(-1, 0)</td>
<td>0.0633 (1.14)</td>
<td>0.6838 (1.38)**</td>
<td>0.3792 (1.19)*</td>
</tr>
<tr>
<td>(0, 1)</td>
<td>0.2301 (0.95)*</td>
<td>0.4488 (1.58)</td>
<td>0.5224 (1.07)**</td>
</tr>
<tr>
<td>(-1, 1)</td>
<td>0.2733 (1.31)</td>
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<td>0.4731 (1.30)**</td>
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<tr>
<td>(1, 5)</td>
<td>-0.0413 (2.14)</td>
<td>0.3066 (2.02)</td>
<td>-0.0723 (1.28)</td>
</tr>
</tbody>
</table>

*P<0.1, **P<0.05,
Table 4.6
Impact of Brand Leveraging Type and Brand Equity on Abnormal Return
Dependent variable: abnormal return (%)

<table>
<thead>
<tr>
<th></th>
<th>Model 1 F Value</th>
<th>Model 2 F value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>3.224 *</td>
<td>1.511</td>
</tr>
<tr>
<td>Advertising Expense</td>
<td>1.431</td>
<td>0.767</td>
</tr>
<tr>
<td>ROE (return on equity)</td>
<td>3.587 *</td>
<td>3.759**</td>
</tr>
<tr>
<td>EBIT (Earnings before interest and taxes)</td>
<td>2.188</td>
<td>1.614</td>
</tr>
<tr>
<td>R&amp;D Expense (Research and Development)</td>
<td>0.969</td>
<td>0.620</td>
</tr>
<tr>
<td>Intangible Asset</td>
<td>2.419</td>
<td>3.113*</td>
</tr>
<tr>
<td>Brand Leveraging Type</td>
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<td>4.245**</td>
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<tr>
<td>Adjusted R²</td>
<td>0.107</td>
<td>0.189</td>
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</table>

*P<0.1, **P<0.05,
Table 4.7
Line Extension, Brand Extension and Brand Alliances
Dependent Variable: abnormal return (%)

<table>
<thead>
<tr>
<th></th>
<th>Line Extension Standardized Coefficients (Standard Error)</th>
<th>Brand Extension Standardized Coefficients (Standard Error)</th>
<th>Brand Alliances Standardized Coefficients (Standard Error)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>1.652 (0.81)*</td>
<td>2.166 (1.85)</td>
<td>0.423 (2.16)</td>
</tr>
<tr>
<td>Advertising Expense</td>
<td>0.149 (0.41)</td>
<td>0.161 (0.92)</td>
<td>1.884 (1.66)</td>
</tr>
<tr>
<td>ROE (return on equity)</td>
<td>-0.571 (0.24)</td>
<td>0.524 (0.40)</td>
<td>0.919 (0.85)</td>
</tr>
<tr>
<td>EBIT (Earnings before interest and taxes)</td>
<td>-2.565 (0.73)**</td>
<td>-2.858 (3.73)</td>
<td>0.943 (1.70)</td>
</tr>
<tr>
<td>R&amp;D Expense (Research and Development)</td>
<td>1.469 (0.67)</td>
<td>0.502 (1.84)</td>
<td>-5.415(2.45)</td>
</tr>
<tr>
<td>Intangible Asset</td>
<td>-0.535 (0.24)</td>
<td>-0.099 (0.38)</td>
<td>2.371(0.44)**</td>
</tr>
</tbody>
</table>

*P<0.1, **P<0.05,
### Appendix 4.1

**Financial Measurement Definitions**  
(Data source: COMPUSTAT)

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Operationalization</th>
<th>Definition</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>number of employees</td>
<td>Number of company workers as reported to shareholders</td>
<td>Year end of the announcement date</td>
</tr>
<tr>
<td>Advertising Expense</td>
<td>Advertising Expense</td>
<td>Cost of advertising media (i.e. radio, television, and periodicals) and promotional expenses. (Income before extraordinary items/Common Equity)*100</td>
<td>Year end of the announcement date</td>
</tr>
<tr>
<td>ROE (return on equity)</td>
<td>Return on Equity</td>
<td>Operating income After Depreciation</td>
<td>Year end of the announcement date</td>
</tr>
<tr>
<td>EBIT (Earnings before interest and taxes)</td>
<td>Earnings Before Interest and Taxes</td>
<td>Operating income After Depreciation</td>
<td>Year end of the announcement date</td>
</tr>
<tr>
<td>R&amp;D Expense (Research and Development)</td>
<td>Research and Development Expense</td>
<td>All costs during the year that relate to the development of new products or services</td>
<td>Year end of the announcement date</td>
</tr>
<tr>
<td>Brand Equity</td>
<td>Intangibles</td>
<td>The unamortized value of intangible assets</td>
<td>Year end of the announcement date</td>
</tr>
</tbody>
</table>
Appendix 4.2
Calculation of Stock Daily Return (Data source: CRSP)

\[ R_{it} = \frac{p(t) f(t) + d(t)}{p(t')} - 1 \]

Where
\[ R_{it} = \text{stock return for company } i \text{ on day } t \]
\[ p(t) = \text{sale price or closing bid/ask average on the day} \]
\[ d(t) = \text{dividend amount for the day } t \]
\[ f(t) = \text{factor to adjust price in day } t \]
\[ p(t') = \text{last sale price or closing bid/ask average at time of the previous day (t-1)} \]
5.1 ESSAY ONE CONCLUSIONS

Despite more than a decade of studies in brand extension evaluations, the conceptual framework in this area can be best described as divergent. The central issue remains as: based on consumers’ liking of the parent product, how much will they like the extension product? Studies approach the problem from two perspectives: the relationship between P₀ and Pₑ, and the relationship between B₀ and Pₑ.

The results presented here are an effort to integrate the two dimensions. Evidence supports that both factors are important in the affect transfer process from B₀P₀ to B₀Pₑ, and the greatest amount of affect is transferred when both conditions (expectancy and relevancy) are met.

The framework provides a theoretical basis explaining the different roles of each factor. Expectancy matches up Pₑ with B₀Pₑ to make the affect transfer possible. Moreover, confirmation of the expectations also generates affect (Olson, Roese and Zanna 1996). Relevancy indicates the strength of affect transfer, influencing the amount of affect that will be transferred to P₀Bₑ. Collectively, both factors have different roles in the affect transfer process, and this research offers the first empirical evidence to support that view.

The experimental findings provide evidence for affect transfer at the product and attribute level. At the product level, most affect is transferred when the extension is
highly expected and the brand fits that extension well. Expectancies are based on various factors, such as product knowledge and experience. Moreover, a competitor’s product launch may also create expectations for the firm’s current products. For example, the phenomenal success of Apple’s extension into the cell phone category may also create consumer expectancies for other PC manufacturers to unveil a multifunctional cell phone. Extensions meeting such expectancies are likely to be favored by consumers. A possible stream of future research can identify factors related to consumers’ expectancies.

At the attribute level, the results show that a larger amount of affect is transferred via high-relevancy attributes than via low-relevancy attributes. This finding provides some implications to practitioners. As a brand grows, it develops a rich body of associations. A firm is presented with different options to present the brand in the extension categories. This study suggests that a brand should highlight different attributes in different extensions. For example, Colgate is associated with two attributes: expertise in dental care and fresh feeling. Rather than advertising the Colgate brand in the same way in different extension categories, the study implies that Colgate should highlight its fresh feeling in the mouthwash category but address the dental care expertise in the toothbrush category. The implication also yields an interesting research question. Will different positioning in various extensions generate spillover effects among extension categories? Future studies can explore conditions under which brand positioning in one category will influence its positioning in other categories.
5.2 ESSAY TWO CONCLUSIONS

The study applies network externalities theory to explain the portfolio characteristics of brand equity. As the study addresses three portfolio characteristics (size, similarity and attribute compatibility), this study first highlights the role of attribute compatibility. First, results demonstrate that consumers do value the attribute compatibility of a product portfolio. Next, the similarity among the product set enhances the attribute-compatibility impact. This makes sense, since attribute compatibility brings extra convenience when products are used together. The more similar products are to each other, the higher the chances that consumers will use these products together. In other words, consumers do recognize the value of attribute compatibility in the product portfolio. They put more value on this feature as the chances of using this feature increase.

In addition, examining the portfolio size effect reveals an interesting finding. Results vary for different dependent variables. A curvilinear relationship is observed when measuring brand equity as the dependent variable; whereas a negative relationship is found using brand evaluations. The use of an anonymous brand could cause the mixed effect. Since the study focuses on the portfolio effects, the use of an anonymous brand controls for other confounding effects. Meanwhile, knowing nothing about the brand prevents consumers from taking any meaningful signal from the brand. Previous explanations for the positive relationship between size and brand equity suggest that the number of products under a brand serves as collateral for that brand. The more products involved, the less likely a brand will fail. Therefore, the number of
products associated with a brand is a positive signal for the brand. Given anonymous brands, consumers have no idea about the credibility of the brand, so the signaling effect is weak.

Based on the above discussion, a possible future direction for research is to examine the role of parent brand strength on the effectiveness of attribute compatibility. Usually consumers do not want to buy all the products under a brand. The presence of compatibility under a large portfolio seems less effective to consumers, since they are unlikely to fully benefit from the feature. However, the strength of a brand may help remove the concern. For example, all Apple products nicely connect to each other. As the Apple brand position strengthens on the market, concerns over choosing all products under the Apple brand are lessened.

5.3 ESSAY THREE CONCLUSIONS

Companies leverage successful brands to launch products in different categories. The study first time compares these strategies in terms of the impact on the shareholder value. Results show that the market responds positively to three types of strategies: line extension, brand extension and brand alliances. Meanwhile, the stock market responses vary with the type of the strategy. The magnitudes of stock market responses are different for each strategy because these strategies differ in the ability to generate revenues and in the degrees of cannibalizations. Brand alliances show the greatest potential of driving revenues whereas line extensions most serve to strength the
brand position rather than expanding the market. Brand extension strategy is in the middle.

Although the strategies all use established brand(s) to launch new products, the purposes are quite different, and several findings are noticeable. First, the market valuation model reveals that shareholder of a firm with high earnings tend to respond less favorable to the line extension. This result provides evidence for the cannibalization consequences of line extension. Cannibalization occurs when the sales of new products decreases the sales of existing products. As the sales driven by new products cannot justify the marketing expense associated with that product introduction, a firm’s overall profitability drops. In this way, line extension is not suitable for firms seeking for a high profitability. However, the conclusion is based on the indirect evidence of the stock market responses to the line extension. It points to a new research avenue to directly investigate impact of line extensions on a firm’s profitability.

Second, the study shows that the magnitude of the market responses is the largest to the brand alliances announcements. The finding is based on the stock responses to one of two firms involving in the announcements. To fully capture the brand alliances impacts, future studies can observe the stock market responses to both companies. As two companies take different roles in the alliances, the consequences and possible stock market responses may also differ. As the hypothetical example used in the previous discussion, Slim-fast chocolate cake mix by Godiva involves a utilitarian-oriented brand (slim-fast) and a prestigious one (Godiva). Introduction of such products may generate different responses to the two alliances companies.
Third, this study finds several firms’ characteristics contributing to the stock market responses. However, one of the most obvious information in the announcements is the brand(s). The essence of brand leverage strategy is to utilize the established brands to generate more revenues for a firm. Thus, the market responses should be correlated with the brand equity being leveraged. This study does not investigate the brand effect due to the data availability. As possible future research stream, studies can link brand equity to the market responses to that brand’s leverage strategy announcement.